The British Power Conversion Company

POWERSTAR I
USER MANUAL

BPC364-05 – 11/05/2022

SAFETY

IMPORTANT NOTICES

- Read instructions carefully before installing and starting the UPS.
- All warnings in the manual should be adhered to.
- All operating instructions should be followed.
- The unit should be supplied by a grounded outlet. Do not operate the unit without a ground source.
- Power cables of the UPS should be routed carefully so that they are not to be walked on.
- Please save this manual.
- Please save or recycle the packaging materials.

- This UPS utilizes voltage that may be hazardous. Do not attempt to disassemble the unit. The unit contains no user replaceable parts. Only factory service personnel may perform repairs.
- This equipment can be installed by the end user, and the batteries will be pre-installed by the supplier.
- The mains socket outlet that supplies the UPS will need be installed near the UPS and need to be easily accessible.
- During the installation of this equipment, it must be confirmed that the sum of the leakage currents of the UPS and the connected loads does not exceed 3.5mA.
- Connection to any other type of receptacle other than a two-pole, three-wire grounded socket may result in an increased risk of electric shock as well as violate local electrical codes.
- In the event of an emergency, press the "OFF" button and disconnect the power cord from the AC power supply to properly disable the UPS.
- Do not allow any liquids or any foreign object to enter the UPS. Do not place beverages or any other liquid-containing vessels on or near the unit.

- This unit is intended for installation in a controlled environment (temperature controlled, indoor area free of conductive contaminants). Avoid installing the UPS in locations where there is standing or running water, or excessive humidity.
- Do not plug the UPS input into its own output.
- Do not attach a power strip or surge suppressor to the UPS.
- Do not attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS.
- Do not dispose of, or expose batteries to extreme heats or fires, as they may explode and pose serious risk to equipment and personnel.
- A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:

  1) Remove watches, rings, or other metal objects from the hands.

  2) Use tools with insulated handles.

  3) Wear rubber gloves and boots.

  4) Do not lay tools or metal parts on top of batteries.

  5) Disconnect charging source prior to connecting or disconnecting batteries terminal.

  6) Determine if battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance.

- The internal battery consists of 12VDC.Sealed, lead-acid, 6-cell batteries.
- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- When replacing batteries, replace with the same number and type of sealed lead-acid battery.
- Do not open, dismantle, or damage the batteries. Electrolyte found in the batteries is harmful to the skin and eyes, and toxic if ingested. Minimise all contact with leaking batteries and request support.
- **Attention -** This UPS utilises voltages that may be hazardous. Disconnection of this unit from the mains is not an acceptable point of isolation, as hazardous voltages may still be accessible through supply from battery.
  The battery supply should be therefore disconnected at the positive and negative pole at the DC connections when maintenance or service work inside the UPS is necessary.
- To reduce the risk of overheating the UPS, do not cover the UPS' cooling vents and avoid exposing the unit to direct sunlight or installing the unit near heat emitting appliances such as space heater or furnaces.
- Unplug the UPS prior to cleaning and do not use liquid or spray detergent.
- **WARNING:** This is a C2 UPS category product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

I. GENERAL DESCRIPTION

1.1 Introduction

The BPC PowerStar I Series Uninterruptible Power Supplies are 1-phase in/1-phase out, line-interactive UPSs, able to provide an uninterruptible, pure sine wave output to supply critical loads.

The advantages of using a PowerStar I UPS:

- *Power blackout protection:*

If the mains power fails, the UPS continues to supply the critical load using the energy stored in its batteries, keeping the load protected from power disturbances.

- *Increased power quality:*

The UPS has its own internal voltage and frequency regulating software, which ensures that its output to the critical load is maintained within close tolerances when operating on battery.

1.2 OPERATING CONDITIONS OF UPS

The UPS may be in one of the following operating conditions:

A. Normal Operation (If Mains supply is available):

All fuses and power switches are closed (except the Maintenance Bypass Switch), and the load is supplied by the mains via a filter and AVR. During normal operation, the incoming mains will feed a rectifier to charge the batteries at the same time.

B. Battery Operation:

The Batteries are connected to the static switch, and in the case of a mains failure (mains power outage or AC input voltage out of tolerance), the inverter located on the output of the batteries will convert the incoming DC to AC and maintain the output, supplied by the batteries. Therefore, the AC voltage output supplying the critical load is not interrupted, until the batteries are fully discharged, or mains is restored.

At the end of the discharging time, the inverter is turned off and the load will be lost if mains is not available. When the mains power is restored, and the UPS returns to normal operation and commence charging of the battery.

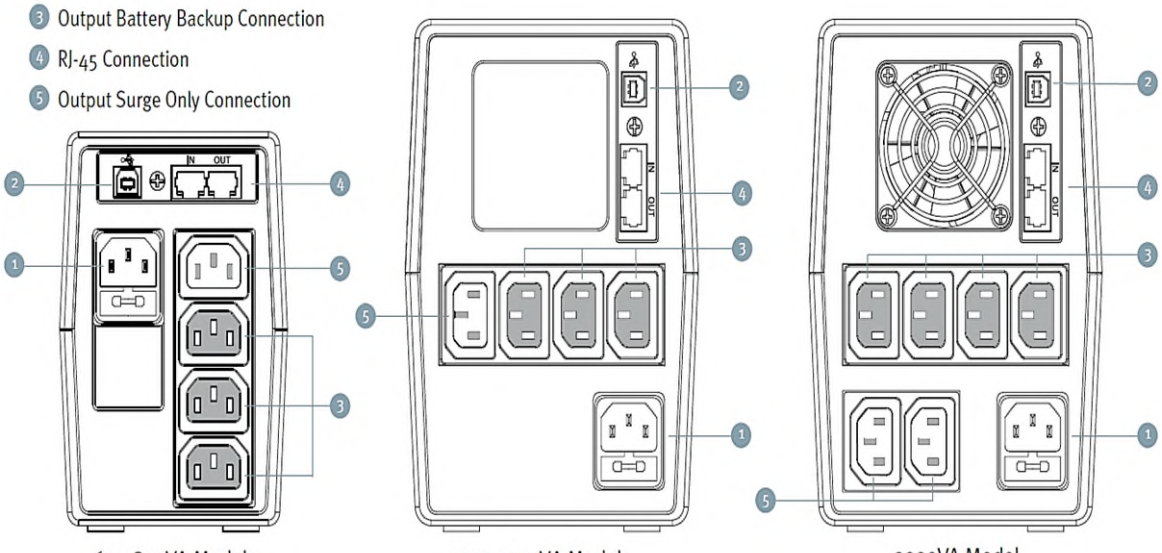
1.3 Front view of UPS

400/600/800 VA
300(D)x101(W)x142(H)

1/2 KVA
320(D)x130(W)x182(H)

1.4 Rear Panels of UPS

1. AC Input
2. USB Communication
3. Output Battery Backup Connection
4. RJ-45 Connection
5. Output Surge Only Connection



600-800VA Models

1000-1500VA Models

2000VA Model

1.5 Outlet description

There are two sets of available output from the PowerStar I series, specified by the colour of the sockets found on the rear as per the example shown on the right.

White (Bypass outlet) sockets will include only surge protection, where the output will be lost in the event of a major mains failure and will not be supplied by battery, but will otherwise be protected from minor disruptions.

Black (Battery backup) sockets will include surge protection and battery backup, where the output will be maintained in the event of a total mains failure through the use of the internal battery, as well as protection against all other potential disruptions.

1.6 Technical Specifications

MODEL (PSTARi)	400	600	800	1000	1500	2000
CAPACITY	400VA/240W	600VA/360W	800VA/480W	1KVA/600W	1.5KVA/900W	2KVA/1200W
Input Voltage	220/230/240 VAC					
Input Voltage Range	162-290 VAC					
Input Frequency	50 or 60 Hz (auto-sensing)					
Output Voltage Regulation	± 10 % (Bat. mode)					
Frequency Tolerance	±1 Hz					
Transfer Time	Typical 2-6 ms					
Waveform	Simulated Sine Wave					
Overload Capacity (Online)	110% ±10% (Fault alarm after 5 minutes), 120% ±10% (shutdown immediately)					
Battery Type & No	12V/4.5Ahx1	12V/7Ahx1	12V/9Ahx1	12V/7Ah x 2	12V/9Ah x 2	12V/9Ah x 2
Charging Current	Approximately 1A					
Charging Time	6 hours recover to 90% capacity					
Dimension (DxWxH)	300 x 101 x 142 mm			320 x 130 x 182 mm		
Net Weight (kg)	3.7	4.4	5	8.2	10.4	11
Humidity	0-90% RH @ 0-40°C non-condensing)					
Noise Level	Less than 40dB					

II. UPS INSTALLATION

2.1 Introduction

WARNING!!!

- Do not apply electrical power to the UPS equipment before the arrival of authorized service personnel.
- The UPS equipment should be installed by qualified service personnel only.
- The connection of the batteries and the maintenance should be done by qualified service personnel.
- Do not make any short-circuit to the battery poles. Because of the high voltage and high short-circuit current, there is significant risk of electrical shock or burn.
- Eye protection should be worn to prevent injury from accidental electrical arcs. Remove rings, watches, and all metal objects. Only use tools with insulated handles. Wear rubber gloves.

2.2 Unpacking

The UPS is packed and enclosed in a structural cardboard carton to protect it from damage.

Please complete the following steps:

1) Inspect for damage that may have occurred during the shipment. *If any damage is noted, call the shipper immediately and retain the shipping carton and the UPS.*

2) Carefully open the carton and take the UPS out.

3) Retain the carton and packing material for future use.

Please note: The supplier must be notified within 3 days of any issues from delivery.

2.2 Equipment Set-up

❶ Connect to Utility Power

Connect AC power cord to utility power. Then, the UPS will start to charge inside battery. For best result, charge the battery for 6 hours prior to initial use.

❷ Connect Modem/Phone Line (only for the model with RJ-11 port)

This UPS protects a single line (1 in/1 out) phone, modem, or fax machine from surges when connected through the UPS. Plug in conning Internet line into the “IN” socket. Use one more Internet line cable in the “OUT” socket and plug one other end to the modem input socket.

❸ Plug in Equipment

Plug your equipment to Battery Backup Outlets on the rear panel of the UPS.

NOTE: Make sure that the UPS is powered on to protect all important devices from data loss during power failure. **CAUTION: NEVER** connect a laser printer or scanner to the battery backup outlets of UPS. The equipment may draw significant power to overload the UPS.

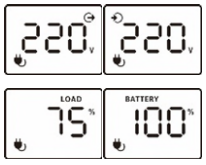
❹ Connect Com. Port and Install Software (only for the model with USB port)

Connect one end of the USB cable to PC and the other to the USB port at the rear of the UPS.

Download the latest version of ViewPower software from http://www.power-software-download.com to your hard drive. Follow on-screen instructions to complete the software installation.

III. FRONT PANEL

3.1 Operation Display

UPS Mode	LCD	Description
UPS Power on		When UPS is powered on, it will enter this mode for 4 seconds.
AC Mode	 When AVR is functioning, icon will flash every second.	LCD information will be displayed in the following order when LCD is touched. 1. Output voltage 2. Input voltage 3. Load level 4. Battery capacity
Overload in AC mode	 icon will flash.	When overload occurs, alarm will beep every 0.5 second.
Battery Mode	 When battery level is low, icon will flash.	Alarm will beep every 10 seconds and LCD information will be displayed in the following order when LCD is touched. 1. Output voltage 2. Input voltage 3. Load level 4. Battery capacity
Overload in battery mode	 icon will flash.	When overload occurs, alarm will beep every 0.5 second.

NOTE: If backlight shuts off, you may activate it by touching the screen.

3.2 Fault Code Table:

Fault condition	LCD	Solutions
Output short circuited		Disconnect short-circuited loads and restart the UPS again.
Overload fault		Disconnect all output loads and restart the UPS again.
Overcharge		Call for service immediately.
Bad or severely discharged battery		Please replace the battery.
High output voltage fault		Call for service immediately.
Over-temperature		1. Turn off the unit and wait for cooling. 2. Or remove excessive loads and wait for cooling.

If fault alarm occurs, please call for service immediately.

IV. FAULTS AND TROUBLESHOOTING

4.1 General Procedure For Fault Checking And Troubleshooting

Problem	Possible Cause	Solutions
Nothing is displayed on LCD panel.	The UPS is not on.	Press the power switch again to turn on the UPS.
	Battery voltage is too low.	Charge the battery at least 6 hours.
	Battery fault.	Replace the battery.
The UPS always on battery mode.	Power cord loose.	Re-plug the power cord.
The UPS continuously beeps.	Please check the fault code for the details.	Please check the fault code for the details.
Backup time too short.	Battery voltage is too low.	Charge the battery at least 6 hours.
	Overload.	Remove some unnecessary loads. Before reconnecting equipment, please verify that the load matches the UPS capability specified in the specs.
	Battery defect.	Replace the battery.

If any abnormal situations occur that are not listed above, please call for service immediately.