SONTRONIC

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BLACKOUT **BUSTER**

OPERATION- UND SERVICE
MANUAL

PK Electronics Blackout Buster

1. System Description

Please refer to BlackoutBuster's Technical Specifications & Product Description Manual.

2. General Safety Considerations

Please observe the following guidelines:

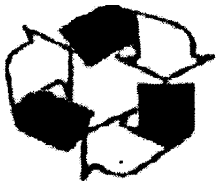
- Do not work alone in any potentially hazardous conditions.
- Always inform your co-workers of hazardous voltages or conditions that pose a threat to yours and/or their safety.
- Always be on the lookout for possible hazards such as worn-out insulation, moisture, non-grounded power source, faulty or poorly maintain electrical safety device such **as** circuit breakers and residual current breakers etc.
- Do not operate UPS without their safety covers.
- Before starting the UPS, ensure that all personnel are not exposed to any potentially hazardous voltages.
- Do not remove or bypass any safety device. Fuses & Circuit Breakers etc. are designed into the system for safety reasons.

WARNING!

Never assume that once power has been removed from a circuit it is safe to work. Always check with a test-pen or voltmeter.

Always think about safety. With good housekeeping and preventive practices, we can keep our workplace safe.

Care for our Environment:



3. Servicing & Maintaining BlackoutBuster™

The Servicing and maintenance of Blackout Buster (BOB), PowerPack and accessories is done at the board level. The only components that are replaceable are the surge protector- Metal Oxide Varistor (MOV), battery and fuses. For service and warranty policy, please consult PK Electronics' Customer Service Center for your country / region.

3.1 Fault Diagnosis

a. Battery Low or Weak (Field Test)

Leave BOB charging for at least 6 hours. The Charge and Regulate Light Emitting Diodes (LED) (green) must be on.

If BOB keeps going into battery mode for short duration, it could be that the supply voltage or frequency falls outside specifications.

When BOB is fully charged, connect the output to a 100 watts lamp.

Simulate a power failure by cutting power to BOB.

Time the battery backup duration. For a fully charged BOB @ 100 watt discharge, you should get at least 10 to 15 minutes of backup time.

For backup times of 5 minutes or less, the battery is suspect to be bad.

b. Battery low or weak (Bench Top Test)

Remove the battery and charge it via an external 12V DC charger. (You could use the automotive type battery charger.) After about 6 hours, connect a 50-watt battery cell load tester to the battery for 10 minutes. Connect a voltmeter in parallel to the lamp & battery to measure the battery voltage while discharging. At the end of 10 minutes, if the battery voltage drops below 11.5 volts, the battery should be replaced.

Notes:
If a load cell tester is not available, you could use a 12V-halogen lamp or an automotive lamp of similar wattage.

Some battery may display an open terminal voltage of 12.5 V or so but when under load, the voltage drops to below 17.5 V. A load test is the best indicator of a battery's health.

If the battery under test shows signs of physical defect such as bulging or depressed side walls, corroded terminals, sealed vent caps that have vented or any indication of acid leakage, the battery should be considered defective and should be replaced.

Please re-cycle all used batteries and help save the environment!

c. **Battery Charger / Battery Fuse**

Symptom: Battery low or dead battery. Example: while simulating a power failure, BOB shutdown immediately or battery backup time is very short. Note: *a faulty charger if not corrected may damage* the *battery* over time.

To test charger, we need to connect a voltmeter across the battery and monitor a rise in voltage when input power is supplied.

Open BOB (Refer to Annex A: Pictorial Guide on Disassembling BlackoutBuster). Next connect the input power cord but do not energize (turn power on). Place your voltmeter probes across the battery terminals. A good battery should indicate a reading of about 12.5 volts. Next supply input power to BOB. The charge LED should come on. Monitor the voltmeter readings, it should rise over the next few minutes. If there is no change at all, replace the battery with a good battery and repeat the test. If the voltage does not climb upwards, the charger is faulty. Change the main circuit board. *Note: The rate of voltage rise when charging depends on the state of battery under charge.*

Battery Fuse: Two* 30A fuses protect BOB's battery. The only know possible condition that could causes this fuse to blow is an overload of BOB in Battery Mode (DC Mode). Should this occur, please contact PK Electronics Customer Service Center listed on the back of this manual.

d. Voltage Regulator

Symptom: BOB keeps going into battery backup mode when utility power is still within specifications (170-270 VAC). The regulate LED does not light up.

You will need a variable transformer to do this test. Connect the output of the variable transformer to the input of BOB. Connect the probes of a voltmeter to the output of BOB. Set the variable transformer to 23OVac. Power on BOB. Monitor the reading of the voltmeter. It should show 230Vac. Now trim down the variable transformer to about 200V and monitor the voltmeter reading. As you trim up/down the variable transformer, the output of BOB will fluctuate between 205 V and 245 V. If it is outside this range, the voltage regulator is faulty. Change the main circuit board.

e. **Inverter Output**

Symptom: When utility power fails, BOB shutdown immediately.

After you have confirmed that this is not due to a battery fault or charger fault, connect a RMS (root mean square) voltmeter to the output of BOB. Power up in battery mode. The voltmeter should read 230Vac. If the reading is low, below 205 V or if BOB will not startup in battery mode (DC Mode) the inverter is faulty. Change the main circuit board.

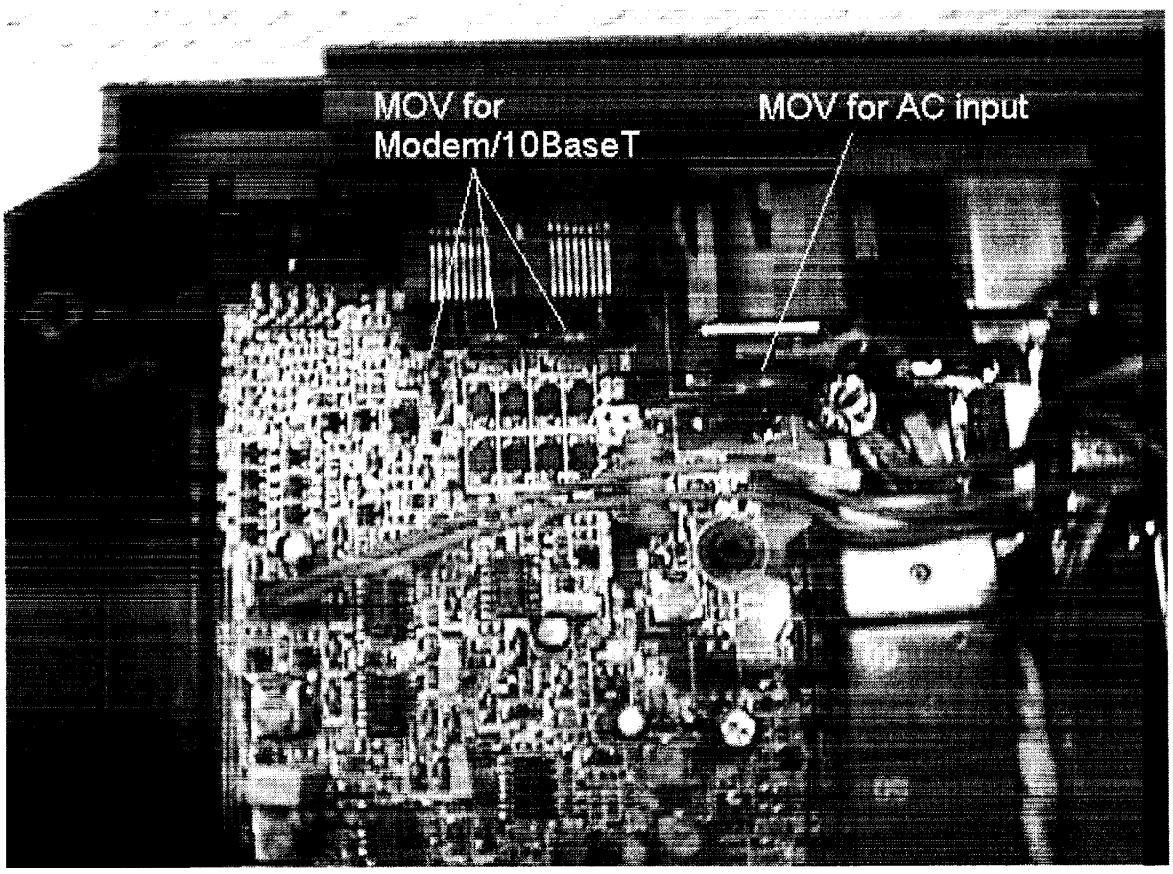
* Revised on 3111198

f. Surge Protection

Symptom: Input fuse blown. After replacing the input fuse and applying input power to BOB, the fuse blows again.

The most probable cause would be a faulty Metal Oxide Varistor (MOV). BOB has one MOV for AC power protection and three for Modem/l OBaseT protection.

Replace the MOV as shown below.



The MOVs are rated as:

a. for AC input - 300V / 4500A / 76Joules (x 1 piece)
b. for Modem/l OBaseT – 130V / 1200A / 9.5Joules (x 3 pieces)

4. Servicing & Maintaining PowerPack™ (Fault Diagnosis)

The PowerPack (PP) does not have a voltage regulator; it uses the regulated output of BOB. Its main components are Battery, inverter/charger board and output transformer. Some test described here requires that BOB stays connected to PP.

a. Battery Low or Weak (Field Test)

To test a PP battery, you need* a custom-made connection cable. (Refer to Annex C: Custom Made Cable for Testing PowerPack). Connect the cable between BOB & PP. Do not forget to connect the Data Cable between BOB and PP. Connect a 100-watt lamp to the output of PP. Simulate a utility power failure. BOB and PP should go into battery mode (DC Mode). Time the battery backup duration. For a fully charged PP @ 100 watt discharge, you should get at least 10 to 15 minutes of backup time.

For backup times of 5 minutes or less, the battery is suspect to be bad.

b. Battery low or weak (Bench Top Test)

Refer to section 3.1 b

c. Charger

Refer to section 3.1 c

Note: The PP gets its input power through BOB's Voltage Regulator. The charge LED will only light up when connected to BOB and BOB is turned on. For testing, you could connect the input power directly to PP.

d. Inverter

Symptom: When utility power fails, BOB shutdown immediately or there is a continuos beep from BOB.

To test a PP inverter, you need to custom make a connection cable. (Refer to Annex C: Custom Made Cable for Testing PowerPack). Connect the cable between BOB & PP. Next connect a 100 watt lamp to the output of PP. In parallel to this lamp, connect a RMS (root mean square) voltmeter. Do not forget to connect the Data Cable between BOB and PP. Power up BOB in battery mode. PP should also power up. The voltmeter should read 230VAC. If the reading is low, below 205 V or if BOB will not startup in battery mode (DC Mode) the inverter is faulty. Change the main circuit board.

5. Servicing & Maintaining SmartPack™

SmartPack contains no serviceable part within. The fuse is rated 5A, slow blow. In most cases, it is treated as a disposable accessory. However depending on conditions, the main circuit board may be replaceable. Please check with PK Electronics Customer Care Center as listed on the back of this manual.

a. Testing SmartPack

Connect SmartPack as in Annex B (How to use SmartPack to control BlackoutBuster)

* Revised on 20/10/98

If you are unable to establish communications with SmartPack and you are certain that the serial port of the PC you are using is working correctly then it is safe to assume that SmartPack has cease to function.

6. Servicing & Maintaining MicroPack™

The MicroPack contains no serviceable parts within. To test that the MicroPack is functioning correctly, carry out the following procedure:

Connect MicroPack to a PC that you know has run PowerMon II without any problems. If PowerMON II reports that BOB has a battery low signal but BOB is operating in Utility Power Mode (AC Mode) then we can assume that MicroPack has ceased to function.

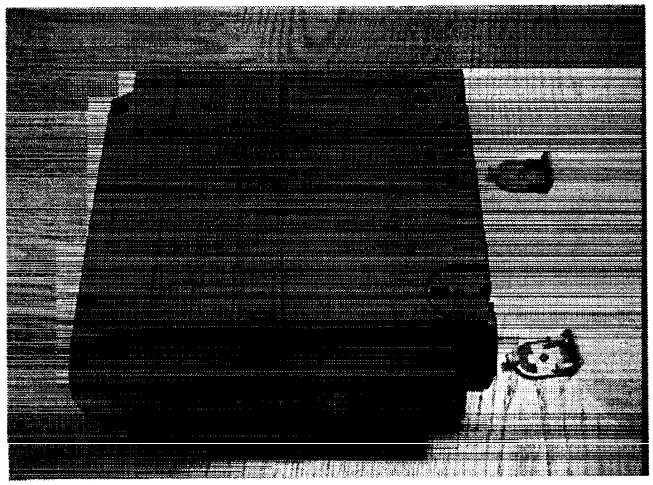
7. Summary

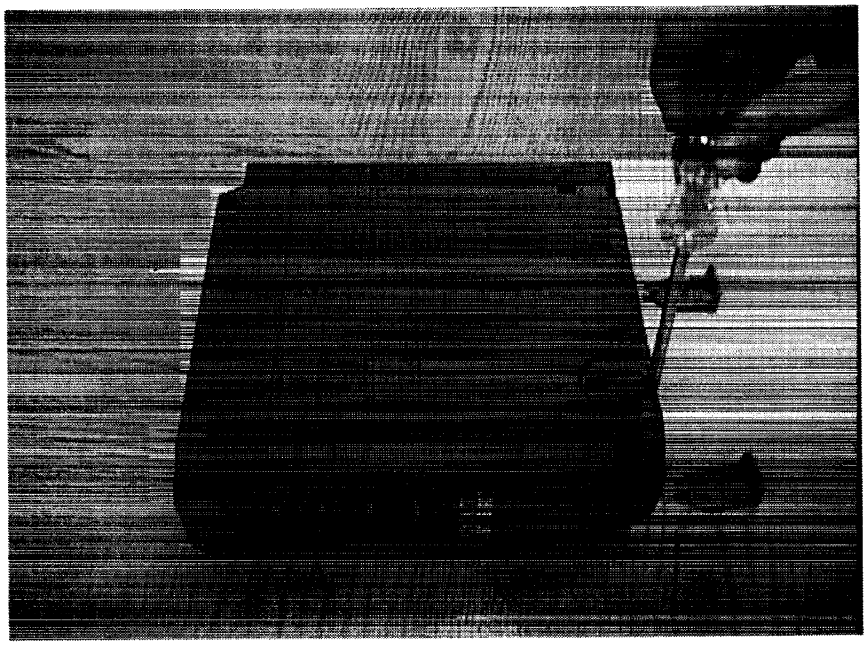
For the information on servicing the BlackoutBuster, PowerPack and accessory, please contact PK Electronics Customer Service Cenfers listed on the back of this manual. Alternatively, you could email to Techsupport@pkworld.com.sg

ANNEX A
Pictorial Guide on Disassemblv of BlackoutBuster™

Place BOB on a flat surface

Remove two legs to access the screws

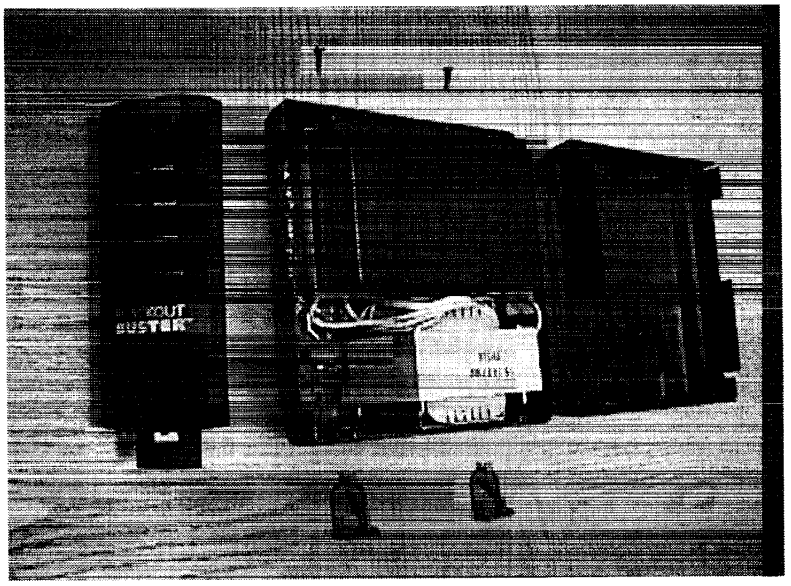


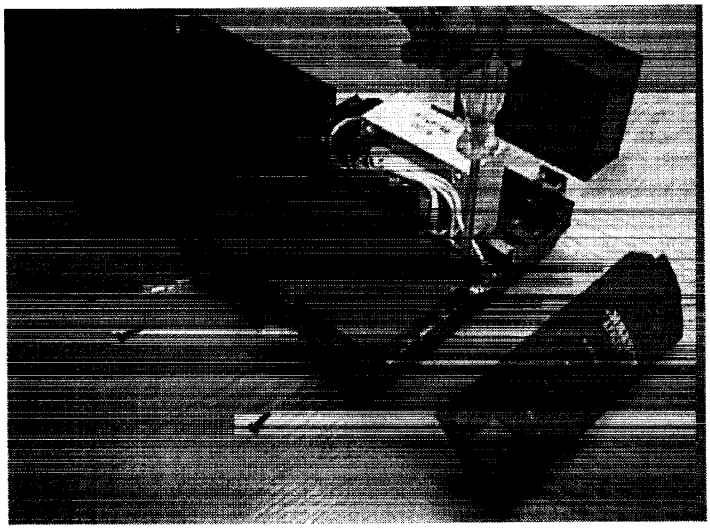


Remove the screws as shown

Carefully push open the front cover latch using a flat blade screwdriver. Push the latch inwards, towards the top of BOB. It is a plastic latch, do not use too much force or it will snap.

View of Blackout Buster with the front cover and side cover removed.

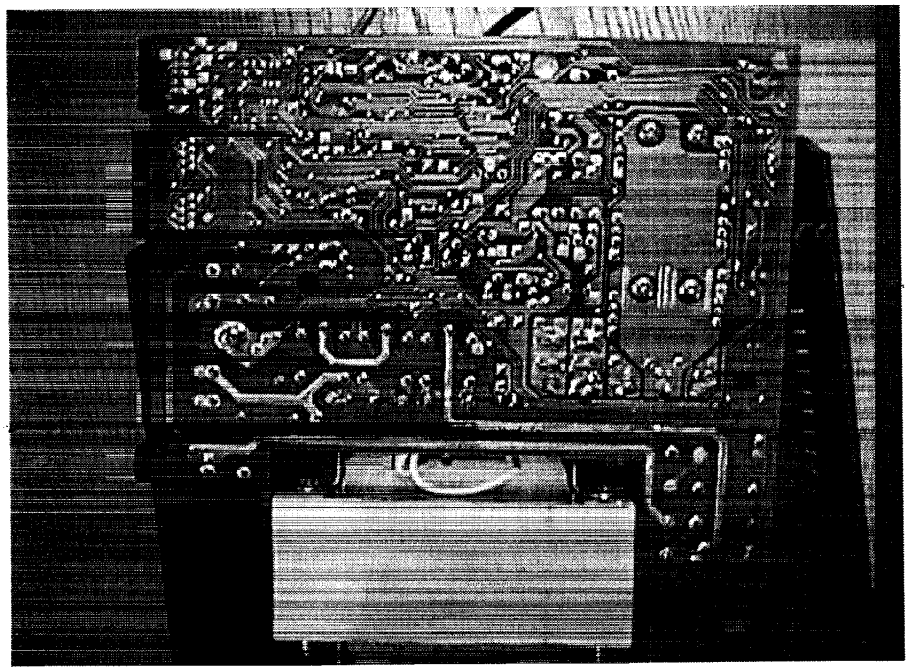




Unscrew the battery tray screws (3) and remove the battery tray to reveal the main printed circuit board.

SONTRONIC GmbH Zur Deutschen Einheit 3/B D-81929 München Tel.: 089 99301160 Fax: 089 937343

Overview of components of BOB



Under-side view of the PCB

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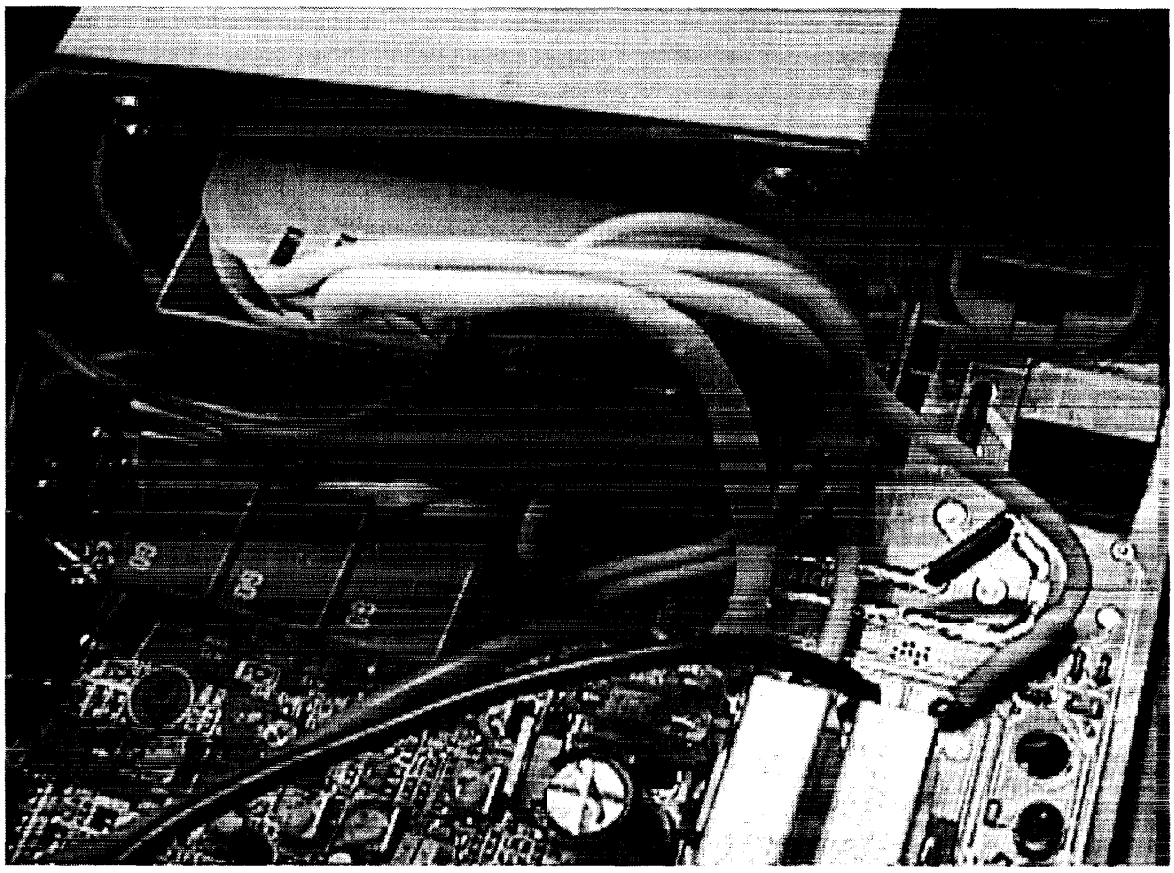


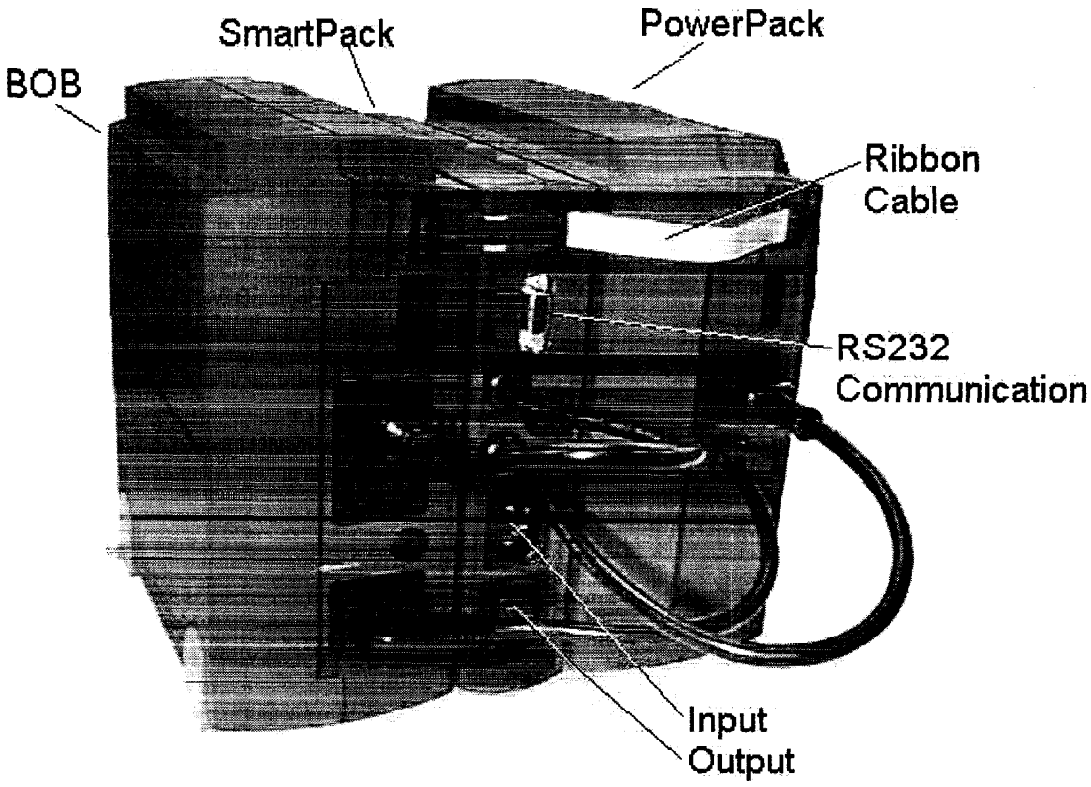
Close-up view of the transformer

* Note: PowerPack disassembly is similar to BOB

ANNEX B

How to use SmartPack™ to control BlackoutBuster™

1. Connect SmartPack, Power-Pack and BlackoutBuster (BOB) as shown. Turn ON BOB.



2. Starts the SEC software (SmartMon). Set Reboot with Duration to 30 seconds. Executes the set command.

3. Turns BOB OFF after waiting for approximately 10 seconds if using Win 3.1X or the 'Safe to shutdown your computer" message appears if using Win 95 or NT

4. Now, BOB is under the control of SmartPack. SmartPack will turn ON BOB in approximately 30 seconds.

5. You can then set any schedule to automatically turn ON or OFF BOB. SmartPack will startup and shutdown BOB as scheduled.

6. If you need to turn ON BOB while BOB is in the scheduled OFF mode, just press the ON button on BOB.

7. Likewise, if you need to switch OFF BOB while it is in the scheduled ON mode, you have 2 options.

a) Issues a OFF command ("Shutdown after Delay") from SmartMon,

or

b) Remove the ribbon cable connecting BOB and SmartPack.

Note:

7. To *have SmartPack controls BOB again, you need to perform the above steps 1 to* 4.
2. *SmartMon will not register any load readings if the load is connected to output socket other than SmartPack.*
3. *For software version 7.3, it allows BOB to start automatically after power failure shutdown. SmartPack is still in control.*

.Revised on 20/10/98

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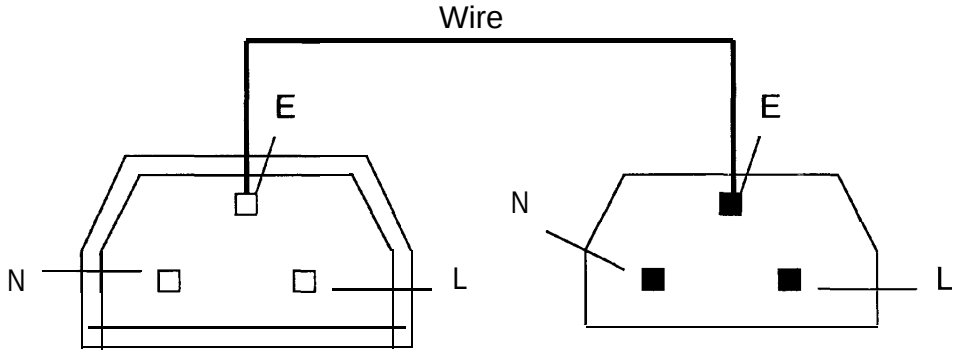
ANNEX C

Custom Made Cable for Testing PowerPack™

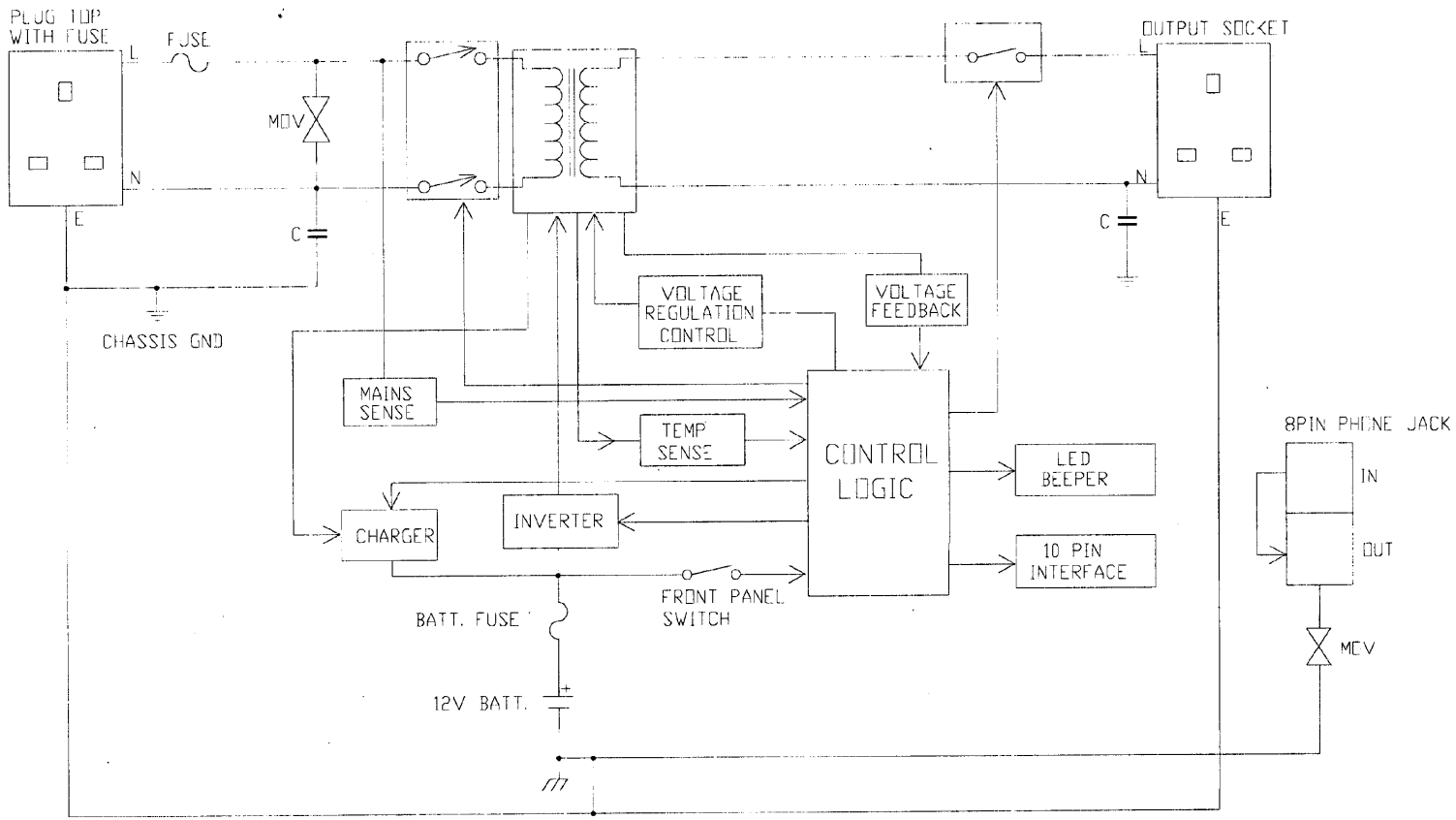
1. BOB communicates with PowerPack via the ribbon cable and the electrical earth connection of the IEC type sockets.

2. To make the test cable, get 1 x IEC 320-plug male and 1 x IEC 320-plug female. Wire ONLY the EARTH. DO not wire the Live and Neutral. Refer to picture below.



IEC 320 (Male connector) IEC 320 (Female connector)

ANNEX D BlackoutBuster™ Block Diagram



REFERENCE DESIGNATIONS	
LAST	NOT USED

DIMENSION: MM	SHEET SIZE: A3	TOLERANCES UNLESS NOTED: LINEAR ±	
PCB REF.		ANGLES ±	

TITLE: BLACKOUTBUSTER B10x BLOCK DIAGRAM

DESIGNED	MATERIAL
DRAWN YEONG 21/12/96	FINISHING
CHECKED	COLOUR

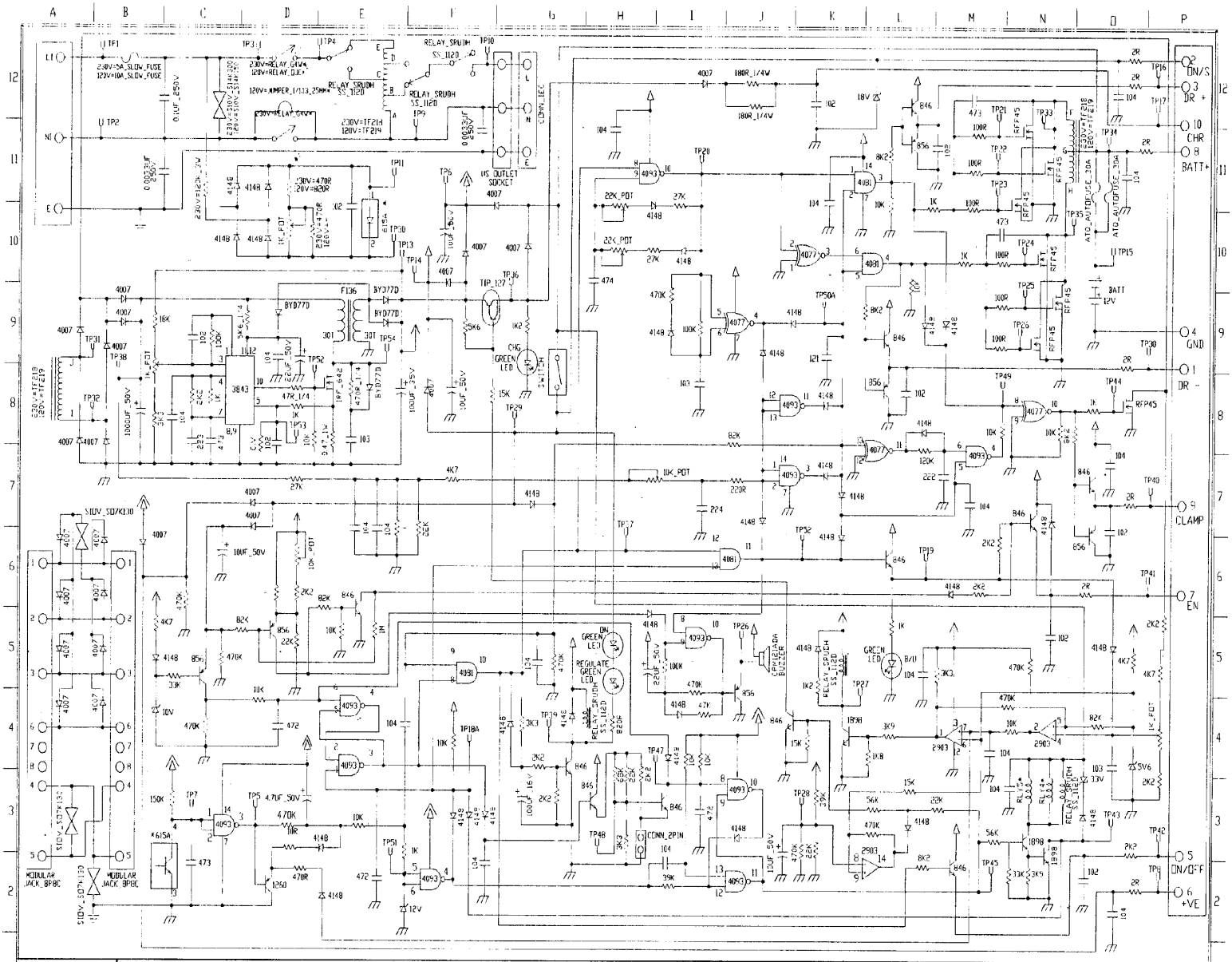
REV.	BY	DATE
1.0	YEONG	21/12/96
2.0	RATHA	20/03/97

SCALE: N.T.S

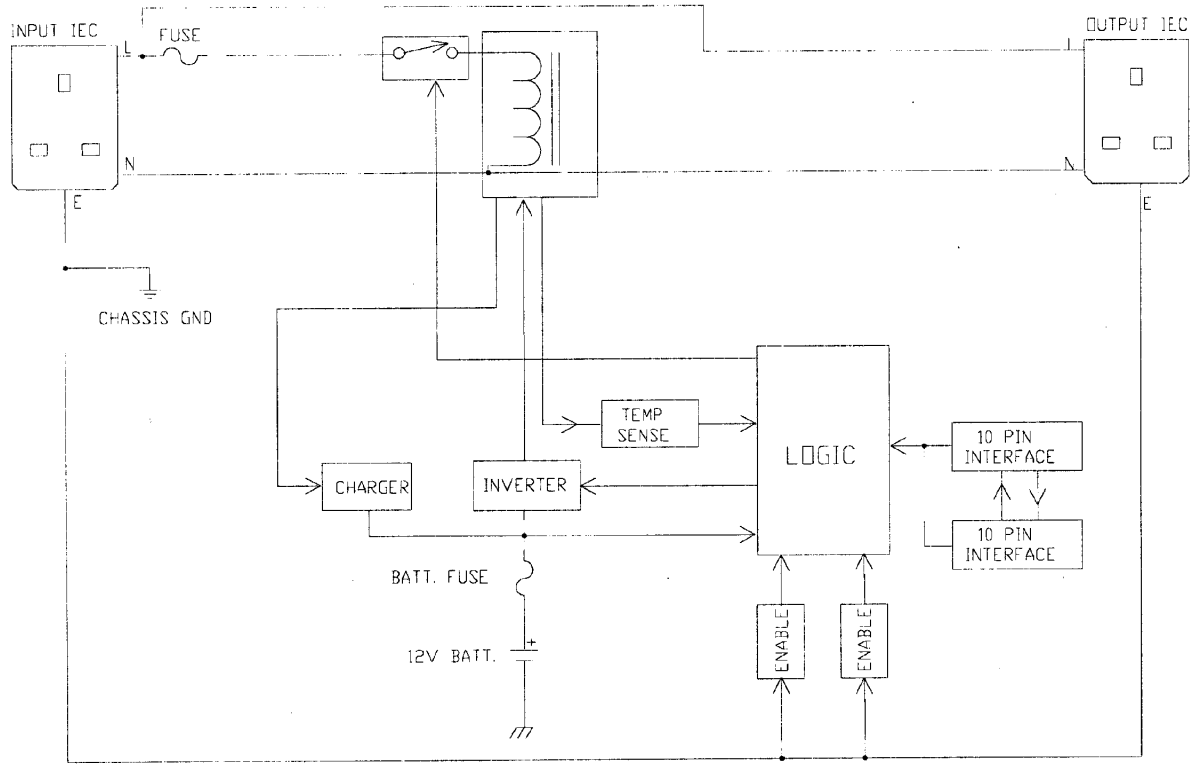
DWG.NO

NC706

PK Electronics


TITLE: UPS LITTLE BABY(M) SCHEMATIC
DESIGNED IVAN HO 11/09/96
DRAWN KF WOO 07/11/96
APPROVED
MATERIAL
FINISHING
COLOUR
REV 5.0
BY CHIAM
DATE 02/04/97
SCALE DWGNO P1459-10V
TOLERANCES UNLESS NOTED
DIMENSION
SHEET 1 OF 1
PCB REF 03145905
LINEAR ±
ANGLES ±
REMARKS:
REFERENCE DESIGNATIONS
LAST REF USED
PK Electronics

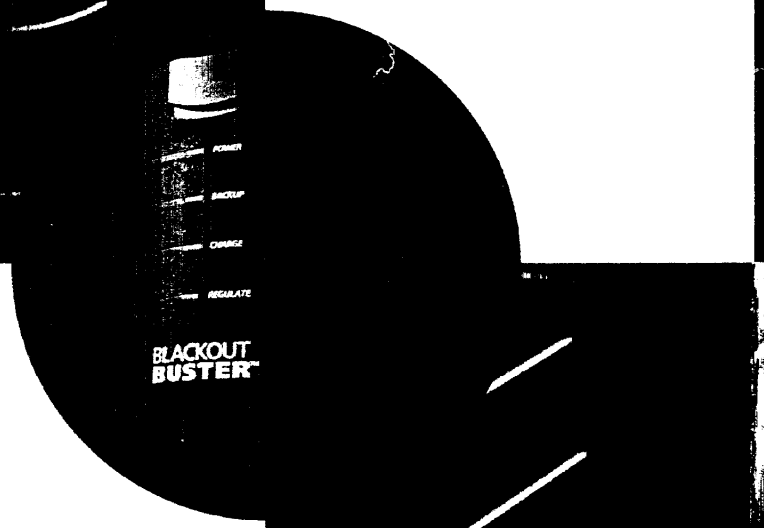
ANNEX E PowerPack™ Block Diagram



REFERENCE DESIGNATIONS	NOTE: x is an alphabet denoting different voltage models	TITLE: PCWERPACK B10Px B. OCK DIAGRAM		REV.	BY	DATE	SCALE: NTS
LAST NUT USED	e.g. C=230V V=120V	DESIGNED	MATERIAL	1.0	WINNIE	29/01/97	DWG NO
		DRAWN WINNIE 29/01/97	FINISHING	2.0	RATHA	20/03/97	N0728
	TOLERANCES UNLESS NOTED	CHECKED	COLOUR				
DIMENSION MM SHEET 1 OF 1	LINEAR ±	THIS DOCUMENT IS THE PROPERTY OF PK ELECTRONICS ITS USE IS AUTHORIZED ONLY FOR RESPONDING TO A REQUEST FOR QUOTATION OR/& IN THE PERFORMANCE OF WORK FOR PK ELECTRONICS NO REPRODUCTION IS ALLOWED UNLESS BY WRITTEN PERMISSION FROM PK ELECTRONICS		PK Electronics			
PCB REF.	ANGLES ±						

BLACKOUT

E POWER SOURCE



For more information please contact:
PK Electronics
www.pkworld.com
America *Fax # 1-602-607 6500 (USA)*
Europe *Fax # 44-171-439 0262 (UK)*
Asia *Fax # 60-6-677 1811 (Malaysia)*

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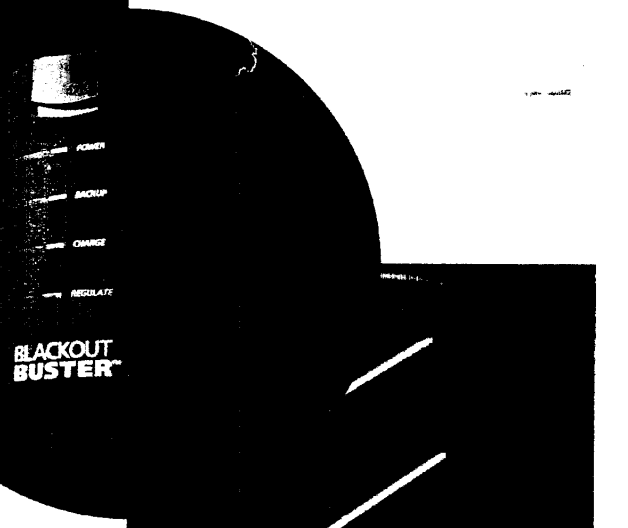
BLACKOUT

E POWER SOURCE



- How your BlackoutBuster protects
- Using your BlackoutBuster
- BlackoutBuster safety
- Troubleshooting

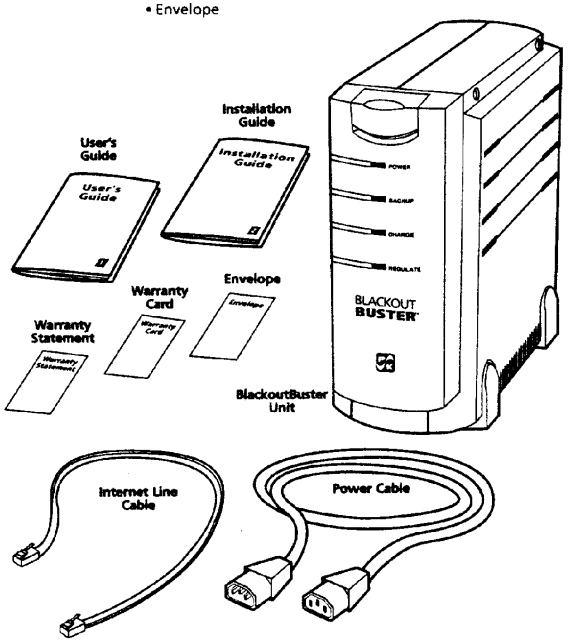
Step-by-step guide

Installing the BlackoutBuster is as easy as following the steps shown. Skip steps 4 and 5 if you do not need Internet/network protection. Keep the Internet line cable provided for future use.

1 BlackoutBuster and accessories.

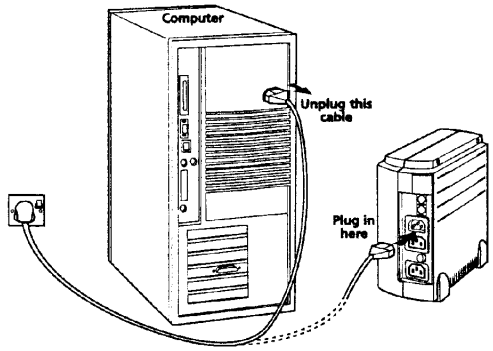
The BlackoutBuster package comes with the following items:

- BlackoutBuster Unit
- Power Cable
- Internet Line Cable
- Installation Guide
- User's Guide
- Warranty Card
- Warranty Statement
- Envelope



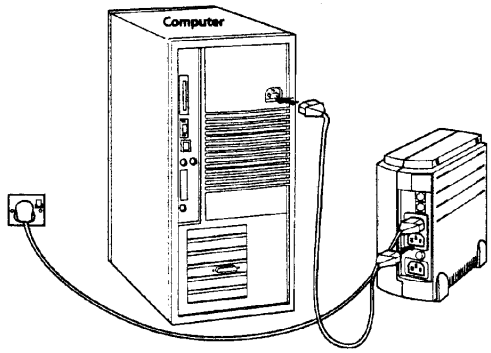
2 Connecting power to the BlackoutBuster

Ensure all power switches are off. Remove the power cable at the back of your computer and plug it into the socket marked "Power In" at the back of the BlackoutBuster.



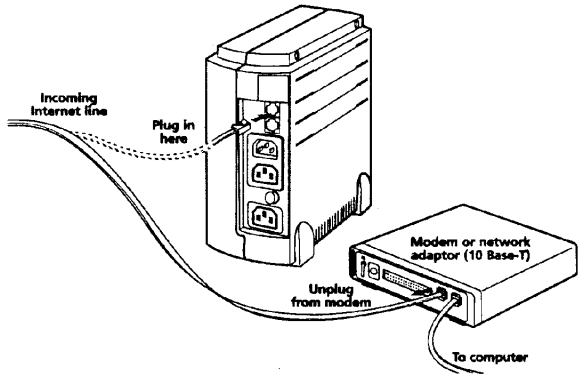
3 Connecting the BlackoutBuster to your computer

Use the power cable supplied to connect BlackoutBuster to your computer. Plug one end of the cable to the socket marked "Power Out" at the back of the BlackoutBuster and plug the other end to the power input at the back of the computer as shown.



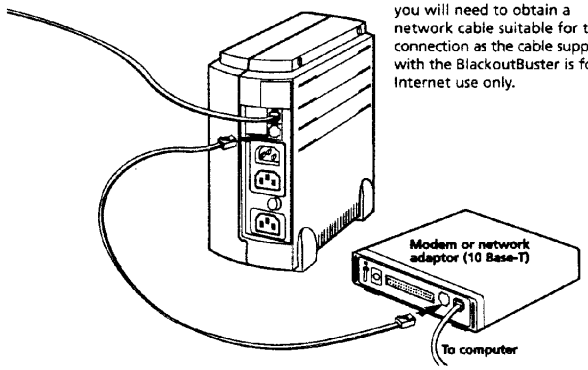
4 *(optional)* Connecting the BlackoutBuster to Internet/10 Base-T

If Internet is used, then unplug the cable at the back of the modem and plug it into the "Internet In" socket at the back of the BlackoutBuster. For 10 Base-T network the procedure is the same.



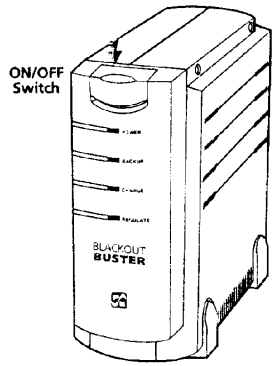
5 *(optional)* Connecting the BlackoutBuster to Internet modem

After step 4, use the Internet line cable supplied to connect the BlackoutBuster to the modem. Plug one end of the Internet line cable to the "Internet Out" socket at the back of the BlackoutBuster and plug the other end to the modem cable input socket as shown. For a 10 Base-T connection, you will need to obtain a network cable suitable for this connection as the cable suppliec with the BlackoutBuster is for Internet use only.



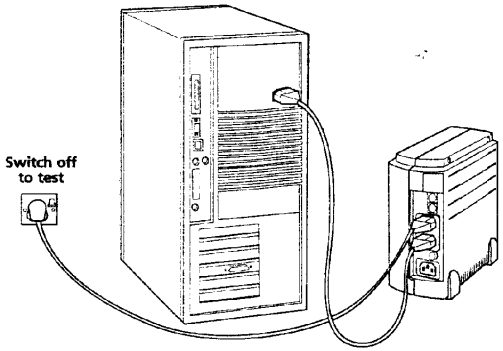
6 Switching the power on

Position the BlackoutBuster in a convenient location beside your computer. Turn your computer power switch on and leave it in this position. Use the switch at the front of the BlackoutBuster to control the ON/OFF of the system.



7 Testing the BlackoutBuster

You may test the functioning of the BlackoutBuster by switching off the power supply while the whole system is switched on. The computer system should continue to function as long as the BlackoutBuster's battery is not depleted. Once you are satisfied with the test, switch the power supply back on to the BlackoutBuster.



BLACKOUT BUSTER™

UNINTERRUPTIBLE POWER SOURCE

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For more information please contact:

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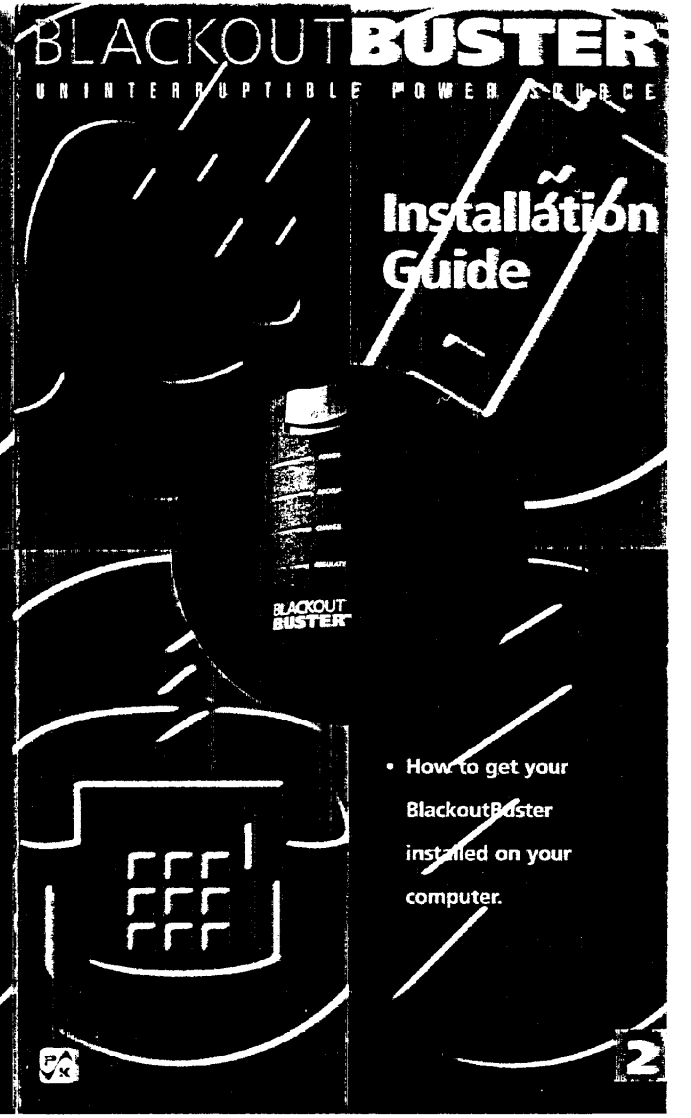
America *Fax # 1-602-607 6500 (USA)*

Europe *Fax # 44-171-439 0262 (UK)*

Asia *Fax # 60-6-677 1811 (Malaysia)*

BLACKOUT BUSTER™

UNINTERRUPTIBLE POWER SOURCE



Installation Guide

- How to get your BlackoutBuster installed on your computer.

2

C BlackoutBuster Troubleshooting

PROBLEM	POSSIBLE CAUSE	REMEDY
System will not power up	• BlackoutBuster power switch not ON • Computer power switch not ON	• Turn the relevant switches to ON position
BlackoutBuster beeper sounds even when AC power is available	• Power cord connection loose • Wall switch not ON • Fuse blown • Wall socket faulty	• Plug cord securely into wall socket • Switch to ON position • Fuse to be replaced by qualified personnel • Plug into another wall socket or have wall socket repaired
BlackoutBuster beeper sounds occasionally but system operates normally	• AC power fluctuating beyond the operating range of the BlackoutBuster	• No action required. BlackoutBuster will go into backup mode when input voltage exceeds limit
BlackoutBuster beeper sounds frequently but system operates normally	• AC power fluctuating widely and frequently • AC power line is heavily loaded	• Install an extra voltage regulator • Plug into another wall socket that is not affected
Blown fuse	• Overload	• Reduce the load connected to the BlackoutBuster. Devices like laser printers have very heavy power consumption and may overload the BlackoutBuster
BlackoutBuster beeps at fast pace soon after power failure	• Overload • Battery not charged • Battery weak	• Reduce load connected to the BlackoutBuster • The BlackoutBuster will recharge its internal battery when the incoming supply is available, leave it to power up for a day to recover its charge • If problem persists although above actions have been taken, replace battery
BlackoutBuster shuts down soon after power failure	• Overload • Battery not charged • Battery weak	• Same remedy as above

D BlackoutBuster Specifications

Specifications

Model	B10E/A/B BlackoutBuster	B10PE PowerPack	
		Stand Alone	When Connected To B10E/A/B
Input Voltage Nominal	230V AC/220V AC	230V AC/220V AC	
Input Frequency Nominal	50Hz/60Hz	50Hz/60Hz	
Input Current	2.2A/2.3A	2.2A/2.3A	4.4A/4.6A
Output Voltage	230V AC/220V AC	230V AC/220V AC	
Output Frequency	50Hz/60Hz	50Hz/60Hz	
Output Current	2.2A/2.3A	2.2A/2.3A	4.4A/4.6A
Output VA	500VA	500VA	1000VA
Output Watts	200W	200W	400W
Output P.F.	0.4		
Ambient Temperature	25°C ± 10°C		
Humidity	< 90% Without Condensation		
Altitude	< 1000m Above Sea Level		
Dimensions (WxHxD)mm	96 x 217 x 215		
Weight (kg)	5.5		

Computer Model	BlackoutBuster	with one PowerPack*
IBM Aptiva Pentium 166	14 minutes	28 minutes
HP Vectra Pentium 166	15 minutes	30 minutes
Compaq Deskpro Pentium 133	19 minutes	38 minutes
Acermate Pentium 100	16 minutes	32 minutes
Most Other Pentium PC	15-20 minutes	30-40 minutes
IBM PC Server 520	-	25 minutes
HP NetServer 5/166LS	-	20 minutes
Compaq Prosignia	-	32 minutes
Most Pentium Servers	-	20-30 minutes

** More PowerPacks, up to a maximum of five per system, can be added to extend backup time.*
** Backup time is for reference only. Actual duration may vary depending on temperature, battery condition and peripherals added.*

B Using your BlackoutBuster Safely

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This User's Guide and the Installation Guide contain important instructions for the BlackoutBuster that should be followed during installation and maintenance of the UPS and batteries. To avoid personal injury or electric shocks, please take note of and observe strictly the following precautions:

- To reduce the risk of electric shocks, install in a temperature and humidity controlled indoor area free of conductive contaminants.
- To reduce the risk of electric shocks, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
- Risk of electric shocks. Battery circuit is not isolated from AC input. Hazardous voltage may exist between battery terminals and ground. Test before touching.
- Risk of electric shocks. Hazardous live parts inside this UPS are energized from battery supply even when the input AC power is disconnected.
- All power cables used must be suitable and in accordance with the total load requirement.
- Servicing of batteries should be performed or supervised by personnel knowledgeable in batteries and the required precautions. Keep unauthorised personnel away from batteries.
- When replacing batteries, replace only with batteries of the same type and rating. Do not dispose of batteries through burning or in a fire. The batteries may explode. Do not open or mutilate the batteries. Electrolyte is harmful to skin and eyes. It may be toxic.

The following additional precautions should be observed when working with batteries:

a) Remove watches, rings or other metal objects as they may accidentally short the battery terminals.
b) Use tools with insulated handles.
c) Wear rubber gloves and boots.
d) Do not lay tools or metal parts on top of batteries.

WICHITIGE SICHERHEITSHINWEISE

- Bitte lesen Sie diese Hinweise sorgfältig durch.
- Heben Sie diese Anleitung für den späteren Gebrauch auf.
- Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen.
- Verwenden Sie Keine Flüssig-order Aerosolreiniger.
- Am besten dient ein angefeuchtestes Tuch sur Reinigung.
- Um eine Beschädigung des Geräes zu vermeiden sollten Sie nur Zubehörteile verwenden, die vom Hersteller zurgelassen sind.
- Das Gerät ist vor Feuchtikeit zu schützen.
- Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten.

Ein Kippen oder Fallen Könnte Verletzungen hervorrufen. Verwenden Sie nur sichere Standorte und beachten Sie die Aufstellhinweise des Herstellers.

Die Belüftungsöffnungen dienen zur Luftzirkuation die das Gerät vor Übertizung schütst. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.

- Beachten Sie beim Anschluß aus Grnüden der elektrischen Sicherheit einen Schutzleiterkontakt haben.
- Verlegen Sie die Netzanschluleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
- Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
- Durch die Lüftungsöfnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Cerät gelangen. Dies Könnte eien Brand bzw. Elektrischen Schlag auslösen.
- Öffenen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur non authorisiertem. Servicepersonal geöffnet werden.
- Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:

  a) Netzkabel oder Netzstecker sind beschädigt.
  b) Flüssigkeit ist in das Gerät war eingedrungen.
  c) Das Gerät war Feuchtigkeit ausgesetzt.
  d) Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  e) Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  f) Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

- Bei Reparaturen düfen nur Orginalersatzteile bzw. Den Orginalteilen entsprechende Teile Verwendet werden. Der Einsatz von ungeeigneten Ersatzteilen kann eine weitere Beschädigung hervorrufen.
- Wenden Sie sich mit allen Fragen die Service und Reparatur betreffen an Ihren Servicepartner. Servicepartner. Somit stellen Sie Betriebssicherheit des Gerätes sicher.
- "Der Arbeitsplatzbezogene Schalidruckkpegel nach DIN 45 635 beträgt 70dB (A) oder weniger" (The sound pressure level at the operators position according to IEC 704-1:1982 is equal or less than 70dB (A)).

"Um ein Umkippen dieses Gerätes zu-verhindern, sind mit der Installation dieses Gerätes die zusätzlichen Sützen an der Unterseite dieses Gerätes anzubringen."

How the BlackoutBuster protects your computer and your files

BlackoutBuster delivers a new way to ensure the smooth running of your computer system. BlackoutBuster's extensive features will handle all the power problems that affect your computer.

This all-in-one power protection product has been designed to handle even the most powerful desk top computers.

EMERGENCY BACKUP BATTERY

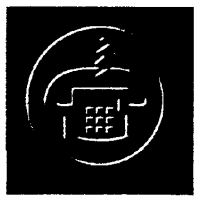
Sudden interruptions to the power supply can lead to the loss of your computer files. BlackoutBuster's long life rechargeable battery will give you time to safely shutdown your system and prevent the loss of valuable work or personal files.

POWER SURGE GUARD

The most commonly known cause of power surge or spike is lightning. When lightning strikes a power line it can send a spike of high voltage electricity through your computer, destroying key components. BlackoutBuster suppresses these major variations in power, protecting your computer and data from damage.

VOLTAGE PROTECTION

Variations in the voltage of the power supply can even be caused by common electrical appliances in the same building. BlackoutBuster will protect your files and hardware against damage caused by these voltage variations.



INTERNET LINE PROTECTION

Just as lightning can strike a power line it can also strike the Internet or network line and send a spike into your computer, damaging or destroying the modem. BlackoutBuster provides protection for your modem or 10 Base-T network adaptor against such spikes.

Using your BlackoutBuster

The BlackoutBuster is designed for ease of operation. The ON/OFF button conveniently located on top of the module allows the computer system to be switched ON or OFF at the touch of a button. Visual indicators and an audible alarm system have been built-in to indicate the state of operation.

In normal operation, the Power, Charge and Regulate LEDs will light up. In case of power failure or input power is out of operating range, BlackoutBuster will immediately switch to its internal battery operation and the Power and Backup LEDs will light up.The audible alarm will sound at a regular interval. When the internal battery is near depletion, the audible alarm will beep continuously indicating the need for file saving and system shutdown. When input power is restored, BlackoutBuster will start up automatically.