OMNIPOWER

Authorized Dealer :

OMNIPOWER

POWER TROLLEY 8

Model: SINE 1548

Instruction Manual for:

Self Contained Sinewave
Mobile Power Backup System

Version 04

POWER TROLLEY 8

CONTENTS

IMPORTANT!!!

Please read the entire instruction manual before connecting the “Power Trolley 8”

POWER TROLLEY 8

1. INTRODUCTION

Thank you for purchasing a “Power Trolley 8”

Your Power Trolley is a versatile unit specifically designed to provide power when normal Utility power fails. It can provide quick-acting emergency power for many situations where either power has failed or when a ready source of portable mains power is needed for small businesses, service professionals and home use for powering TV’s, DSTV Decoders, M-Net Decoders, Lights, Alarm Systems, Laptop Computers, Desktop Computers, DeskJet Printers, Radios, Hi-Fi Systems, Security Systems, Cash Registers, PABX systems, modems, hubs, routers, etc.

It is very user friendly and has the added benefit of being clean and noiseless to the environment. It requires no installation, virtually no maintenance, and is inexpensive to operate.

It has a number of advanced features allowing you to:

- ✓ See at a glance the condition of the unit with easy to understand LED indicators
- ✓ Connect an additional battery to extend back-up time up to 24 hours of use (load dependant)
- ✓ Upgrade the unit to work off solar power or wind generator
- ✓ Have virtually instantaneous back-up power when a mains power failure occurs – very smooth changeover.
- ✓ Easily wheel the unit to where it is needed
- ✓ Accidentally tip or tilt or turn over the unit without fear of spilling acid from the fully sealed internal batteries
- ✓ Smooth sine–wave power – no worries about interference with electronic equipment

This manual describes the simple steps to use the unit and explains to you the operation of the “Power Trolley 8”.

2. USING THE POWER TROLLEY

Moving the unit to where you want to use it is easy. It comes with a retractable handle exactly the same as you have on your “carry-on” airline suitcase. Push the button on the handle, lift and fully extend the handle. Put your foot on the centre axle between the wheels, tilt the unit to about 45° and you’ll find the unit easy to wheel wherever you need it. If you have to lift it into the boot of a car, for instance, it is easier with two people using the white handles on both sites.

Handling the trolley

Avoid rough terrain and do not twist the handle

On unpacking the unit, you’ll find an AC power connector for the unit and a battery extension cord to connect to an external set of 4 x 12V ***in series*** connected batteries should you need extended back-up.

10. WARRANTY

We warrant this product against defects in equipment, materials and workmanship for a period of 12 months from the date of purchase and will repair or replace any defective item within the Power Trolley The unit must be returned in its entirety to the Dealer from which you purchased the unit. Proof of purchase must be retained.

Warranty is subject to the unit being used in an adequately ventilated, suitable environment and excludes any fault attributable to incorrect use, misuse or service by unauthorised personal.

The warranty is void if the fault is due to the end user or third party causing in particular, improper or negligent handling, improper operation or use.

Warranty repairs do not include any shipping, transportation or re-installation costs.

The Dealer limits liability for any damage caused to external devices connected to the Power Trolley 8.

It is the responsibility of the end user or third party to ensure sufficient care is taken to protect the Power Trolley 8 when connected to external devices, from incorrect connection and overload.

No claims will be considered if the Power Trolley was opened by unauthorised personal and where the Power Trolley 8 is used for applications outside the functional specifications for which it is intended.

Severability

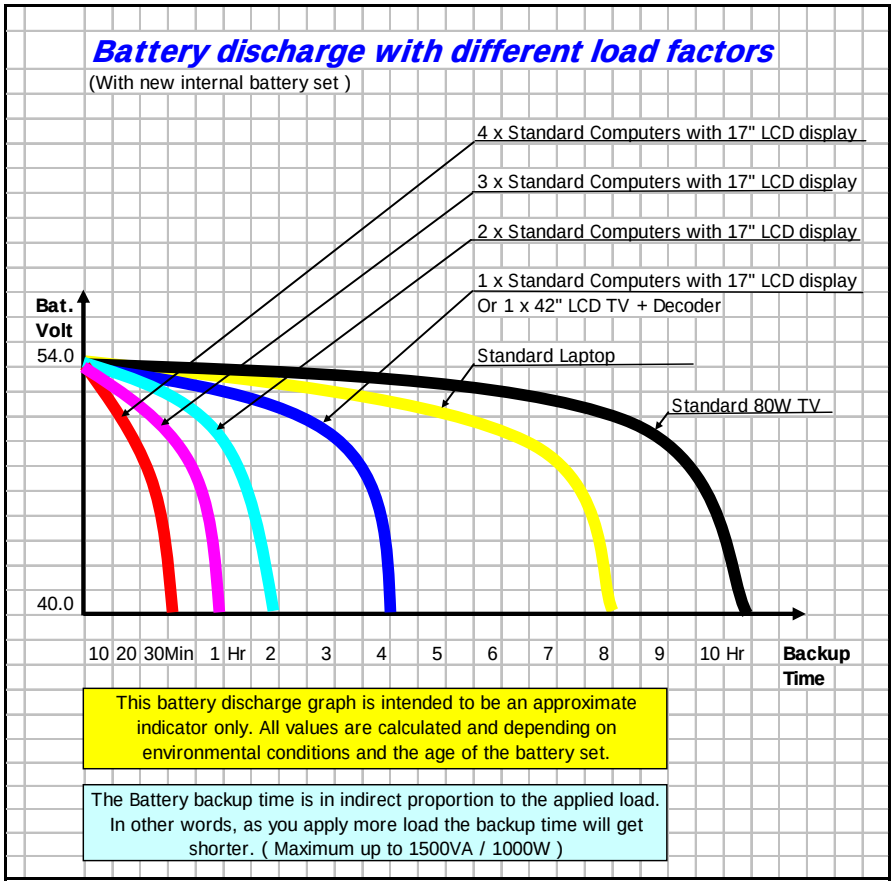
If a part of the terms and conditions set out above is held invalid, void or unenforceable due to any particular national or international legislation, it shall not affect other parts of the terms and conditions remaining. FULL WARRANY CONDITIONS AVAILABLE FROM SUPPLIER

TECHNICAL SPECIFICATIONS (Contd.)

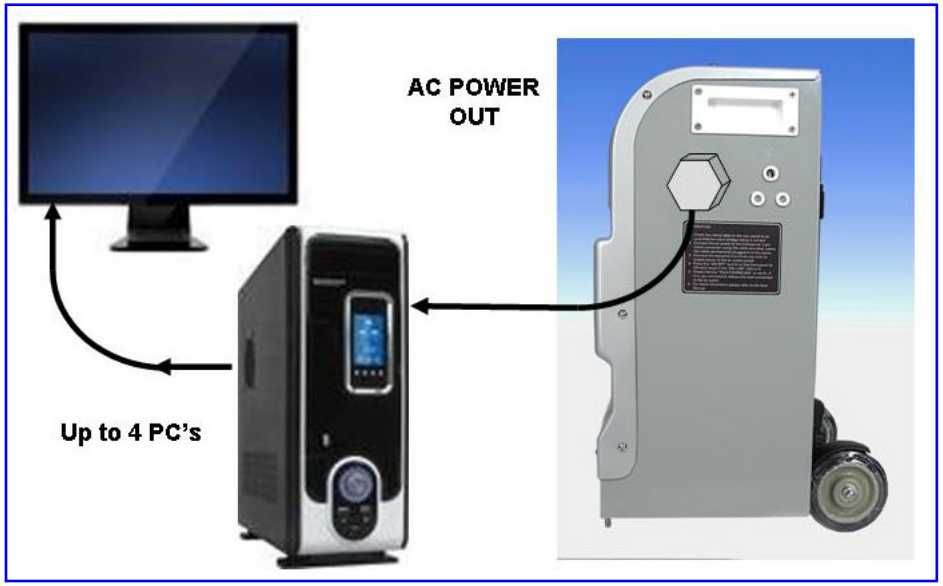
Battery Charger:	
Automatic High Frequency PWM Switch Mode Battery Charger	48V / 5A
AC Input (AC Input Range)	230VAC / 50Hz (180V – 265V)
Charge Voltage Nominal 48VDC / Float +- 54VDC	54V±0.5V
Over Load Protection	YES
Over Temperature Protection	YES
Operating Temperature	-0 deg C - +45 deg C
With iso –Auto transformer for additional safety	YES
Recharge time from discharged internal battery in	Only 8 – 10 Hr
The charger is capable of recharging internal and external up to 48V/100Ah battery in	Only 16 – 20 Hr
Miscellaneous:	
2 x 15A SA-Socket outputs	YES
Supplied with 12 x 12V/7.2 Ah fully sealed internal Lead Acid Batteries in a 48VDC configuration.	YES
Supplied with additional battery input connector and cable for a 48 Volt external Battery set.	YES
Audible Alarms	YES
LED Display UPS Status	Line, Bat, AVR, Bat-Weak/Low Bat
LED Display Load Status	20%,50%,100%,Overload,Fault
Auto temperature controlled cooling fan	YES
Dimensions W x D x H mm (With extended handle)	390×230×450 (980)
Weight net (With Packaging)	48Kg (53 Kg)

For how long will you get power back-up?

The power available is load dependant. Depending on what is plugged into the unit, between 8 – 10 hours of backup is possible with the 'built-in' battery. By connecting an additional specially made power back-up battery, you can extend the time to about 24 hours.



Connecting the Power Trolley to the AC input



Connecting the Power Trolley to computer equipment

9. TECHNICAL SPECIFICATIONS

MODEL	SINE 1548
Inverter:	
Output Power Continuous	1500VA / 1000W
Max Surge Power	2000W
Output wave form	Pure Sinewave
Maximum Output Current	< 6.5 Amps
AC Input Voltage	230VAC / 50Hz
AC Output Voltage when in AC Mode regulated with Buck and Boost Amplifiers	230VAC / 50Hz
Output Regulation when in Inverter mode	±5%
Very Fast Transfer Time	Typical 5 mSec
DC Nominal Input Voltage	48V
Battery low voltage alarm	YES 44V ± 0.5V
Battery low voltage shutdown	YES 42V ± 0.5V
Battery high voltage shutdown	YES 60V ± 0.5V
Efficiency AC - AC	> 95%
Auto Restart and DC Start -Up	YES
Over Temperature protection *	55 deg C ± 5 deg C
Overload protection *	YES
Output short circuit protection *	YES
Input reverse polarity protection / fuse protected / fuse will blow *	YES
Resettable output circuit breaker for additional overload protection	YES
Operating Temperature	-0 deg C - +45 deg C
Humidity	20% – 90% non-condensing

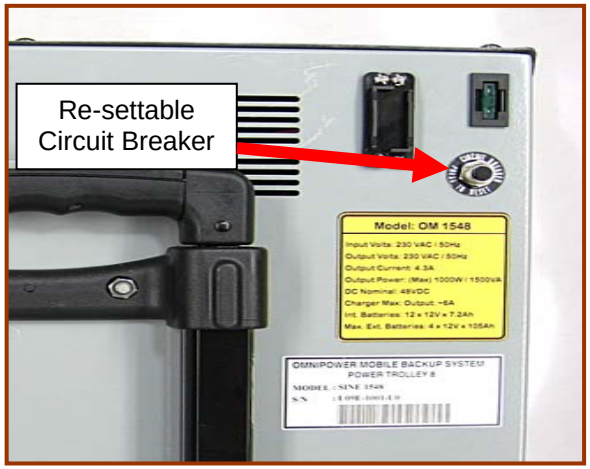
PRECAUTIONARY ADVICE

While the manufacturer has taken all possible precautions to protect this unit against overload, over temperature, reverse polarity, etc. If excessive overload, excessive temperature and/or reverse polarity are applied to the unit, the internal protection circuits try to protect the unit but with excessive mishandling protection could fail and this can cause severe damage to the unit. It is therefore up to the user to connect the correct loads and to use the unit within the specified parameters. The user must also ensure that no reverse power is fed back into the output sockets of the system.

The unit must not be kept or operated in direct sunlight nor in a moist or wet environment.

OVERLOAD RESET

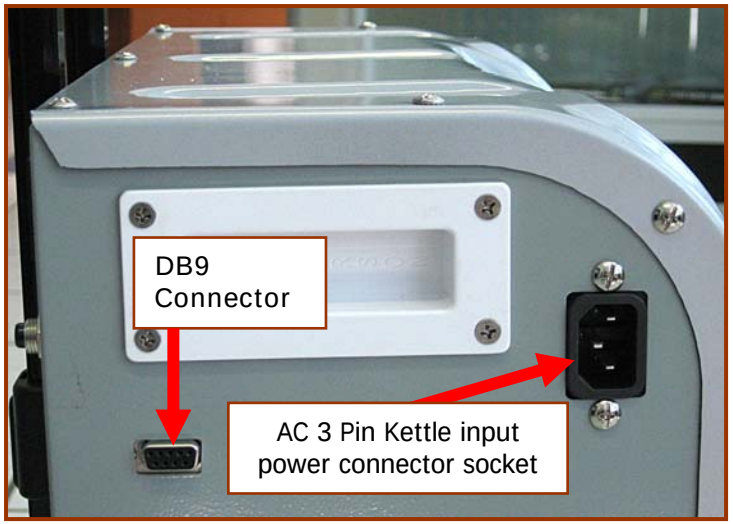
You'll see a 'resettable' circuit breaker on the rear of the Power Trolley 8. This is an additional safety device which will trip if you substantially overload the unit while you connected to mains supply. Disconnect the equipment you have connected to the AC output sockets, reset the breaker and try again connecting with *less* equipment connected to the unit.



3. CONNECTING TO THE POWER TROLLEY

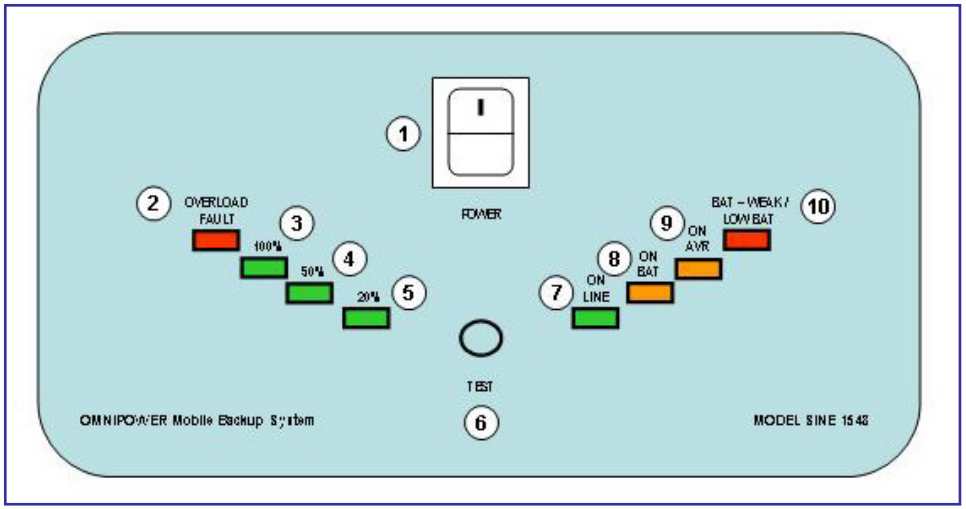
Supplied with the Power Trolley is a 2,5m 3-pin 15A cable with a 3-pin 'kettle connector'. This cable is for the built-in battery charger in the Power Trolley and supplying mains while on standby.

1. Check the rating label on the rear panel to be sure that the line input voltage rating is correct. Normally 220V – 230VAC / 50Hz.



2. Plug the supplied 3-pin kettle connector to the provided socket and then to a wall socket AC power outlet. Leave the cable *permanently* plugged-in to the mains unless you wish to transport the unit. Do not leave the unit disconnected from the mains supply for longer than 2 months.
3. If you are using the equipment for the first time, allow the unit to charge its internal batteries for at least 12 hours.
4. Connect the equipment to one or both of the 15A output sockets.
5. Press the "ON-OFF" switch on the front panel to ON (I) and check after a few seconds if the green "ON-LINE" LED is lit only.
6. Check that the "FAULT/OVERLOAD" is not lit – if it is, you will need to reduce the load connected to the AC outlet.

4. FRONT PANEL CONTROLS & DISPLAY



1	Power ON/OFF switch.	Operates the Power Trolley On/Off
2	Overload fault indicator	Unit 'beeps' continually if LED is lit
3	Load indicator 100%	LED is lit when max power is drawn
4	Load indicator 50%	LED is lit when at half load power
5	Load indicator 20%	LED is lit when minimum power drawn
6	Test button	ON-LINE and ON BAT checks (see note)
7	On Line indicator	Utility AC power is available
8	On Battery indicator	Unit running on internal batteries
9	ON AVR	Unit in Automatic Voltage Regulation mode. Line AC voltage too high or low
10	Battery Weak/Low	LED is lit to indicate battery needs recharging

NOTE :

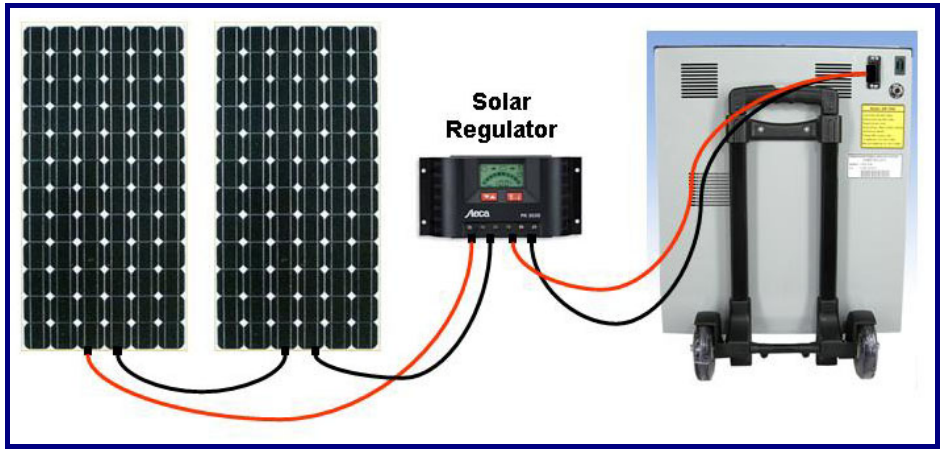
If the unit is in "ON-LINE" mode, i.e. running off of the AC mains, pressing the "TEST" button momentarily transfers the unit to run off its internal batteries to do a check on the condition of the batteries.
If the unit is in "ON BATTERY" mode, i.e. running off of the internal batteries, pressing the "TEST" button momentarily causes the unit to silent the buzzer sound.

8. TROUBLE-SHOOTING

Problem	Check
I've plugged in the equipment I want to use but there's no power output.	Have you checked that you've plugged the unit into a wall socket and that the switch is ON? Is the Power Trolley internal battery fully charged? Check the "BAT WEAK" LED. Is it lit? Have you switched the "Master Switch" to ON? Is the "ON LINE" green LED ON? Is the external Resettable CB pushed in?
I've plugged in the equipment I want to use but there's poor power output, the buzzer keeps beeping. The internal battery is correctly charged and the "Master Switch" is ON.	Check the status of the LOAD LEVEL LED indicators. Is the OVERLOAD LED lit? Disconnect the equipment connected to the Power Trolley. Reconnect the output equipment one – by - one until you reach 100% LOAD.
The internal battery is correctly charged, the "Master Switch" is ON but neither the ON LINE nor ON BAT indicators are lit.	If no LED is lit an internal problem has occurred and the system must be sent to your nearest Dealer to be checked out
The Power Trolley was working then just stopped. Neither the ON LINE nor ON BAT LED's are lit. The "FAULT" LED is lit.	You've got a problem with the internal protection of the Power Trolley. Try switching OFF then ON the Master Switch with the AC output plug(s) removed. If the unit does not come back on again you'll have to take the unit to your Dealer to be checked out.

This Power Trolleys are sophisticated electronic microprocessor controlled equipment and we recommend you do not try to open the system by yourself. The unit contains internally high and dangerous voltages which can lead to injuries if not handled carefully. Only let a fully qualified & authorised electronic technician work on the system.

7. SOLAR / WIND DC POWER CONNECTION

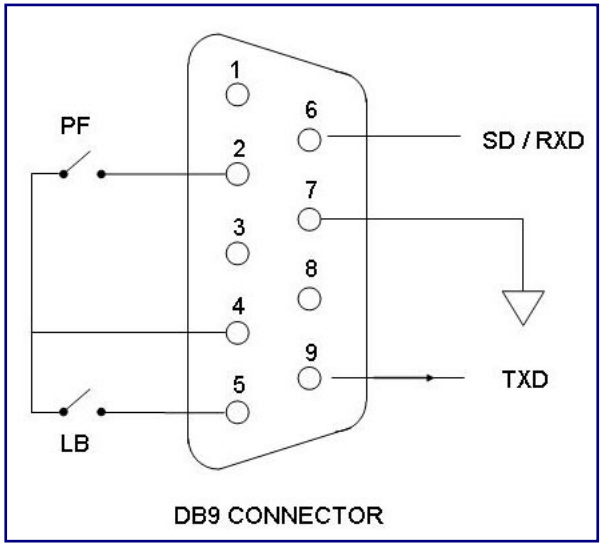


Charging the internal trolley battery from solar panels (2 x 24V or 4 x 12V solar panels connected in series to archive a 48 Volt DC Source & a 48 Volt Regulator, recommended charge current 2A)

Charging the internal trolley battery from a wind generator. This charging system must be a 48Volt system (max. charge 2A).

5. RS232 INTERFACING WITH THE POWER TROLLEY

The Power Trolley 8 provides communications signals such as Power Failure, Low Battery and External Shutdown via an RS232 DB9 cable connection to the user's computer. The communication protocol is:



Baud rate	2400
Data	8
Stop	1
Parity Bit	None

1. Free potential contacts are available on pin 2 and pin 5 with 4 as common.
Max. 30VDC /0,1A

2. Standard RS232 available at pin 6, 9 and 7 system ground.

PIN	ASSIGNMENT
2	PF : Power Failure Alarm (Closes an internal relay contact to indicate a power failure and the Unit is in battery mode)
4	Common pin. (Signal ground for pin 5 and pin 2)
5	LB : Low Battery Alarm (Closes an internal relay contact to indicate that battery voltage is low and shutdown is imminent)
6	RS232 RXD – Receive Data / External Shut-Down. A +5V/+12V signal held down for 0.5 sec. when the Unit is in battery back-up mode, will shut the Unit down 20 seconds later. The Unit will auto-restart when line voltage recovers.
7	Ground for RS232 and External Shut Down
9	RS232 TXD Transmit Data

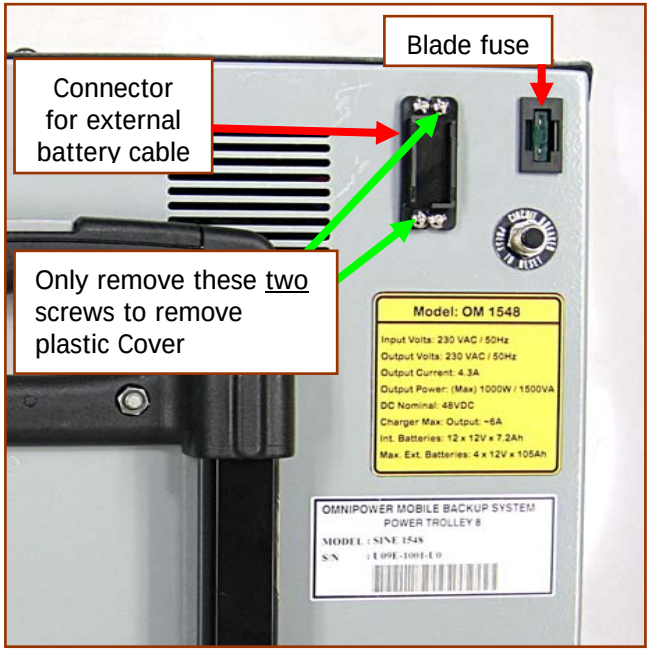
Automatic Shutdown software via the RS232 is available on request.

6 INTERNAL & EXTERNAL BATTERY SET

The Power Trolley comes supplied with the internal batteries fitted.

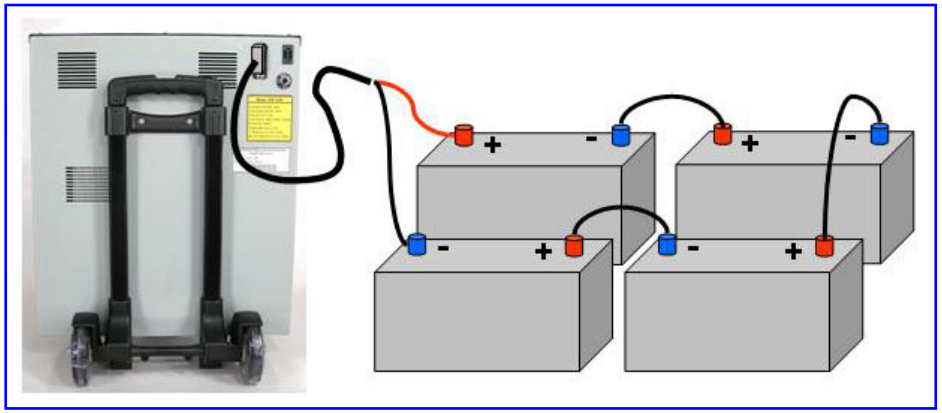
Should there be a need to change one or all of the internal batteries for whatever reason, this operation should only be carried out by a qualified Technician. Changing the internal battery set is dangerous and requires specialized knowledge.

A qualified Technician can however easily fit an External battery set to the unit to extend your backup time.



Connect the red cable to the positive and the black cable to the negative of 4 x 12V in ***series*** connected batteries (48V System). The green/ yellow cable is an earth connector for an external battery box. Remove the plastic cover from the external battery connector. Connect the battery extension cable supplied to the external battery connector. Make sure you not accidentally remove the wrong screws from the connector. ONLY two screws out of the four are removed.

Connecting the Power Trolley to external 48V battery set



Your Dealer will recommend the correct set of batteries to purchase.

Connect the batteries using suitably rated battery links and terminals. Tighten terminal connections to firm but not over tight.

Note: The 30 Amp blade fuse, located at the rear of the Trolley, is only for the protection of the external battery set. Should the fuse ‘blow’ make sure you replace it with an identically rated fuse. You would require long nose pliers to replace this fuse.

Generator use

If the “Power Trolley 8” is powered via a small, good quality generator, a Genset of at least 2.5 - 3 KVA should be used. The Genset must have either a mechanical or electronic governor / regulator installed.

Cheap small imported generators from the east should be avoided as the output voltage is often not regulated and can damage your Power trolley 8.