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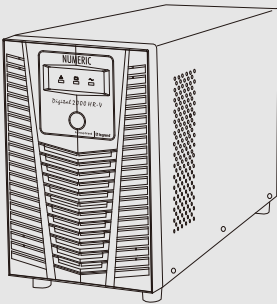
USER MANUAL

Digital 2000 HR-V

**NEW ENERGY
TO POWER**

CONGRATULATIONS!

We are delighted to welcome you to our family of customers. Thank you for choosing Numeric as your reliable power solution partner, you now have access to our widest network of 250+ service centers in the country. Since 1984, Numeric has been enabling its clients to optimize their business with top-notch power solutions that promise seamless and clean power with controlled environmental footprints. We look forward to your continued patronage in the years to come. This manual contains detailed instructions on how to use, install and operate this product.



Disclaimer

The contents of this manual are bound to change without prior notice. We have exercised reasonable care to give you an error-free manual. Numeric disclaims liability for any inaccuracies or omissions that may have occurred. If you find information in this manual that is incorrect, misleading or incomplete, we would appreciate your comments and suggestions. Before you begin the installation of the product, please read this manual thoroughly. The warranty of this product is null and void, if the product is abused/misused.

INTRODUCTION

This UPS is a compact unit which combines both the benefits of UPS and inverter for long-time operation. It can accept input voltage over a wide range and provide stable and pure power source to the connected devices such as personal computer, monitor and other precious 3C products.

- Simulated sine wave output
- Excellent microprocessor control guarantees high reliability
- Boost and buck AVR for voltage stabilization
- Selectable charging current
- Auto restart while AC is recovering
- Off-mode charging
- Cold start function

IMPORTANT SAFETY INSTRUCTIONS

Save these instructions: This manual contains important instructions for this UPS that should be followed during installation and maintenance of the UPS and batteries.

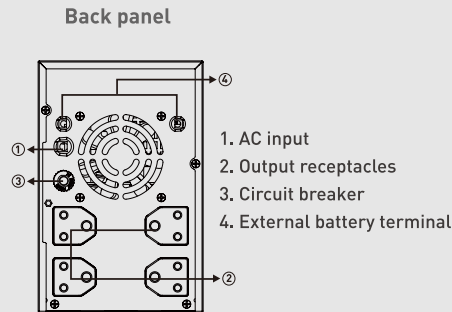
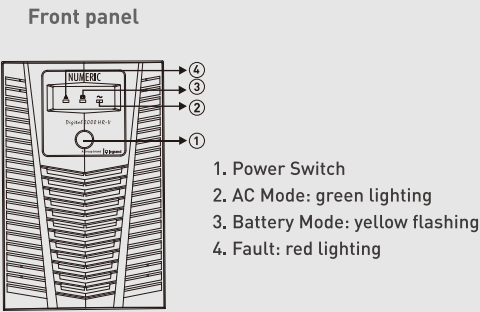
- **CAUTION!** Do not drop a metal tool on the batteries. It could spark or short-circuit the batteries and could cause an explosion.
- **CAUTION!** Remove personal metal items such as rings, bracelets, necklaces and watches when working with batteries. Batteries can produce a short-circuit current high enough to melt metal, and could cause severe burns.
- **CAUTION!** Avoid touching eyes while working near batteries.
- **CAUTION!** Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- **CAUTION!** NEVER smoke or allow a spark or flame in vicinity of a battery.
- **CAUTION!** If a remote or automatic generator start system is used, disable the automatic starting circuit or disconnect the generator to prevent accident during servicing.
- **CAUTION!** The unit is designed for indoor use. Do not expose this unit to rain, snow or liquids of any type.
- **CAUTION!** To reduce risk of injury, only use qualified batteries from qualified distributors or manufacturers. Any unqualified batteries may cause damage and injury. Do NOT use old or overdue batteries. Please check the battery type and date code before installation to avoid damage and injury.
- **WARNING!** It's very important for system safety and efficient operation to use appropriate external battery cable. To reduce risk of injury, external battery cables should be UL certified and rated for 75° C or higher. And do not use copper cables less than 10AWG. Check the external battery cable reference table according to system requirements.

Table 1:
Minimum Recommended Battery Cable Size versus Length

Model	Digital 2000 HR-V
Typical Amp.	59A
1 meter (one-way)	AWG 8
Dia-mm	5.9

- **CAUTION!** Do not disassemble the unit. Contact with the qualified service center when service or repair is required.
- **WARNING!** Provide ventilation to outdoors from the battery compartment. The battery enclosure should be designed to prevent accumulation and concentration of hydrogen gas at the top of the compartment.
- **CAUTION!** Use insulated tools to reduce the chance of short-circuit when installing or working with the inverter, the batteries, or other equipments attached to this unit.
- **CAUTION!** For battery installation and maintenance, read the battery manufacturer's installation and maintenance instructions prior to operating.

SYSTEM DESCRIPTION



INSTALLATION AND OPERATION

1. Inspection

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged.

Checking Package Contents

You should receive the following items inside the package

- UPS unit
- User manual

Connect External Battery

Step 1- Install a DC Breaker in a positive battery line. The rating of the DC Breaker must be according to the inverter's battery current (50 Amp). Keep the DC breaker off. (see Fig. 1)

Step 2- Connect battery cables to the terminals of battery.

Note: For the user operation safety, we strongly recommend that you should use tapes to isolate the battery terminals before operating the unit.

1) Single Battery Connection (Refer to Fig. 1):

When using a single battery, its voltage must be equal to the Nominal DC Voltage of the unit (**See Table 2 below**).

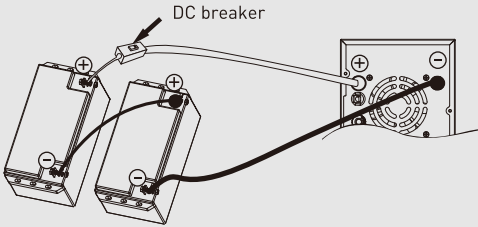


Fig. 1

Model	Nominal Battery DC Voltage
Digital 2000 HR-V	24 VDC

Table 2

2) Multiple Batteries in Series Connection (Refer to Fig. 2):

All batteries must be equal in voltage and amp hour capacity. The sum of their voltages must be equal to the Nominal DC Voltage of the unit.

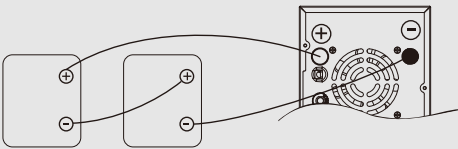


Fig. 2

3) Multiple Batteries in Parallel Connection (Refer to Fig. 3):

Each battery's voltage must be equal to the Nominal DC Voltage of the unit.

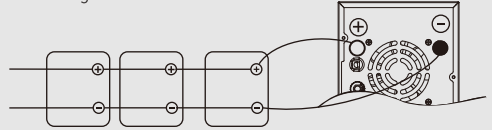


Fig. 3

Step 3- Ensure to connect the polarity of battery side and the unit correctly.

Positive pole (Red) of battery to the positive terminal (+) of the unit.

Negative pole (Black) of battery to the negative terminal (-) of the unit.

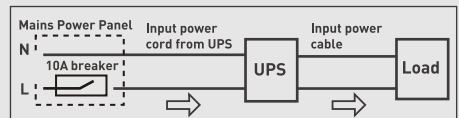
Step 4- Put the covers back to the external battery terminals.

Step 5- Take the DC breaker on.

Connect to Utility and Charge

Plug in the AC input cord to the wall outlet. The unit will automatically charge the connected external battery even though the unit is off.

Note: Circuit Breaker rating of the Branch Circuit supplied from the Mains Input panel sizing must be 20A/250Vac in accordance with National Electrical Codes and Standards as per schematic. (Based on N.E.C NFPA 70 -2014; Reference: Article 240)



Connect to Device

Simply plug devices to battery supplied sockets. During power failure, it will provide continuous power to connected devices.

SPECIFICATIONS

Model	Description	Digital 2000 HR-V
Capacity	VA/W	2000 VA/1200 W
Input	Voltage	230 VAC
	Voltage Range	140 – 300 VAC
	Frequency Range	50 Hz
Output	AC Voltage Regulation (Batt. Mode)	230 V +/- 10%
	Frequency Range (Batt. Mode)	50 Hz +/- 1 Hz
	Transfer Time	Typical 4 – 8 ms
	Waveform (Batt. Mode)	Simulated Sinewave
Battery	Battery Voltage	24 VDC
	Floating Charging Voltage	27.4 VDC +/- 1.0 VDC
	Maximum Charge Current	13A – 15A
Protection	Protection	Discharge, Overcharge and Overload Protection
Alarm	Battery Mode	Sounding every 10 seconds
	Low Battery	Sounding every second
	Overload	Sounding every 0.5 seconds
	Fault	Continuously sounding
Physical	Dimensions (D x W x H) (mm)	395 x 145 x 220
	Net Weight (Kgs)	13.55
Environment	Humidity	0 to 90% Relative Humidity (Non – Condensing)
	Noise Level	Less than 40 dB

*Product specifications are subject to change without further notice

TROUBLE SHOOTING

Use the table below to solve minor problems.

Problem	Possible cause	Remedy
Utility power is normal but the unit is in battery mode.	AC input power cord is not connected well.	Check AC input power connection.
	Input breaker is activated.	Reset the input breaker.
When power fails, the backup time is shortened.	The unit is overloaded.	Remove some non-critical loads.
	Battery voltage is too low.	Charge the unit at least 8 hours.
	Battery capacity is not full even after charging the unit for at least 8 hours.	Check the date code of the battery. If the batteries are too old, replace the batteries.
Nothing displays on the front panel when the utility power is normal.	The unit is not turned on.	Press power switch to turn on the unit.
	Battery is not connected well.	Check the external battery cable and terminal. Make sure all the battery connections to the unit are all correct.
	Battery defect.	Replace the batteries.
	Battery voltage is too low.	Charge the unit at least 8 hours.

Head Office

10th Floor, Prestige Center Court,
Office Block, Vijaya Forum Mall, 183,
N.S.K Salai, Vadapalani,
Chennai - 600 026.
Phone: +91 44 4656 5555

Regional Offices

New Delhi

B-225, Okhla Industrial Area,
4th Floor, Phase-1,
New Delhi - 110 020.
Phone: +91 11 2699 0028

Kolkata

Bhakta Tower, Plot No. KB22,
2nd & 3rd Floor, Salt Lake City,
Sector - III, Kolkata - 700 098.
Phone: +91 33 4021 3535 / 3536

Mumbai

C/203, Corporate Avenue, Atul Projects,
Near Mirador Hotel, Chakala,
Andheri Ghatkopar Link Road,
Andheri (East), Mumbai - 400 099.
Phone: +91 22 3385 6201

Chennai

10th Floor, Prestige Center Court,
Office Block, Vijaya Forum Mall,
183, N.S.K Salai, Vadapalani,
Chennai - 600 026.
Phone: +91 44 3024 7236 / 200

Branch Offices

Chandigarh

SCO 4, First Floor, Sector 16,
Panchkula, Chandigarh - 134 109.
Phone: +91 93160 06215

Dehradun

Unit-1 and 2, Chakrata Road,
Vijay Park Dehradun - 248001.
Uttarakhand
Phone: +91 135 661 6111

Jaipur

Plot No. J-6, Scheme-12B,
Sharma Colony, Bais Godown,
Jaipur - 302 019.
Phone: +91 141 221 9082

Lucknow

209/B, 2nd Floor, Cyber Heights,
Vibhuti Khand, Gomti Nagar,
Lucknow - 226 018.
Phone: +91 93352 01364

Bhubaneswar

N-2/72 Ground Floor, IRC Village,
Nayapally, Bhubaneswar - 751 015.
Phone: +91 674 255 0760

Guwahati

House No 02,
Rajgarh Girls High School Road
(Behind Rajgarh Girls High School),
Guwahati - 781 007.
Phone: +91 6000 87171

Patna

405, Fraser Road, Hemplaza,
4th Floor, Patna - 800 001.
Phone: +91 612 220 0657

Ranchi

202 & 203, 2nd Floor, Sunrise Forum,
Bardwan Compound, Lalpur, 2nd Floor,
Ranchi - 834 001.
Phone: +91 98300 62078

Ahmedabad

A-101/102, Mondeal Heights,
Beside Hotel Novotel, Near Iscon Circle,
S G Highway, Ahmedabad - 380 015.
Phone: +91 79 6134 0555

Bhopal

Plot No. 2, 221, 2nd Floor, Akansha Complex,
Zone-1, M.P.Nagar, Bhopal- 462 011.
Phone: +91 755 276 4202

Nagpur

Plot.No.174, H.No.4181/C/174, 1st Floor,
Loksewa Housing Society, Near Dr. Umathe
& Mokhare College, Bhamti Road,
Loksewa Nagar, Nagpur - 440 022.
Phone: +91 712 228 6991 / 228 9668

Pune

Pinacle 664 park avenue, 8th floor,
Plot no 102+103, CTS No. 66/4,
Final, 4, Law College Rd, Erandwane,
Pune, Maharashtra - 411 004.
Phone: +91 +20 6729 5624

Bengaluru

No-58, First Floor, Firoze White Manor,
Bowring Hospital Road,
Shivajinagar, Bangalore -560 001.
Phone: +91 80 6822 0000

Coimbatore

No. B-15, Thirumalai Towers, No. 723,
1st Floor, Avinashi Road, Coimbatore - 641 018.
Phone: +91 422 420 4018

Hyderabad

Prestige Phoenix Building,
1st Floor, Survey no. 199,
No. 6-3-1219/J/101 & 102, Uma Nagar,
Opposite to Begumpet Metro Station
Begumpet 500016
Phone: +91 40 4567 1717/2341 4398/2341 4367

Kochi

Door No. 50/1107A9, JB Manjooran Estate,
3rd Floor, Bypass Junction,
Edappally, Kochi - 682 024.
Phone: +91 484 6604 710

Madurai

12/2, DSP Nagar,
Dinamalar Avenue,
Madurai - 625 016.
Phone: +91 452 260 4555

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Contact us.:

Email : customer.care@numericups.com

Phone : 0484-3103266 / 4723266

www.numericups.com