
1000
SERIES
TOSHIBA INTERNATIONAL CORPORATION

Toshiba RELIABILITY IN MOTION 1000 Series User Manual

Single phase 1000 va to 3000 va uos

1
2
3
Table Of Contents
4
5
6
7
8
9
10
11
12
13
14
15
16
17

-

Table of Contents

-

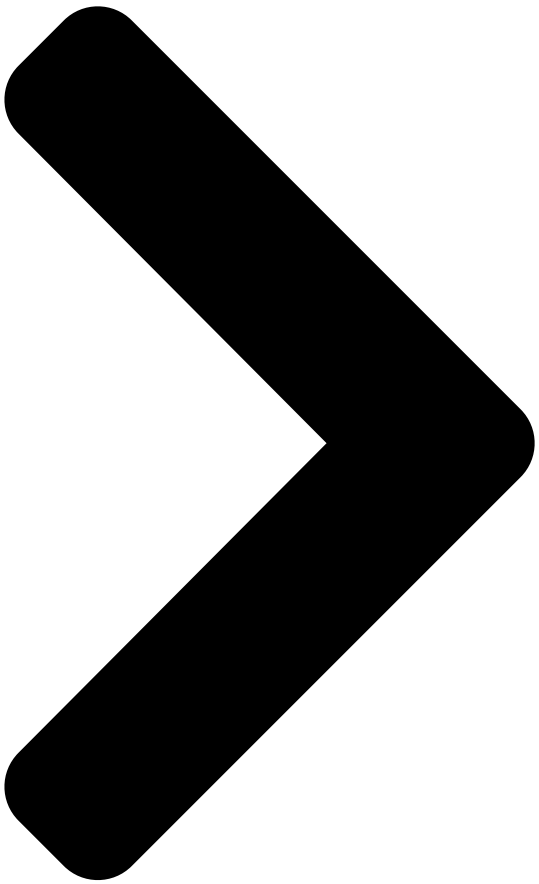
Troubleshooting

-

Bookmarks

Quick Links

Download this manual



TOSHIBA

UNINTERRUPTIBLE

Table of Contents

Next Page

Related Manuals for Toshiba RELIABILITY IN MOTION 1000 Series

Laptop Toshiba 1000-S157 User Manual

1000-s157 user's guide (246 pages)

Controller Toshiba V Series User Manual

Integrated controller, loop controller (158 pages)

Laptop TOSHIBA Satellite 1000 Series User Manual

Toshiba satellite portable personal computer (126 pages)

Laptop Toshiba Satellite 1000 User Manual

Toshiba satellite 1000 notebook (126 pages)

UPS Toshiba 1000 SERIES User Manual

(64 pages)

UPS Toshiba 1000 Series User Manual

Reliability in motion single phase 1000/1200 va (60 pages)

UPS Toshiba UT1A1A010C6 User Manual

User guide (51 pages)

UPS Toshiba 1000 Series Installation Instructions

Toshiba power supply user manual (4 pages)

UPS Toshiba 1000 SEREIS Brochure & Specs

1000 series (2 pages)

UPS Toshiba 1000 Series Specification

Ups rack-mount 2u rail kit (2 pages)

UPS Toshiba 1500 Series Operation Manual

(32 pages)

UPS Toshiba 1600EP Series Operation Manual

Battery cabinet system single phase – 3.6/6.0 kva (22 pages)

UPS Toshiba 1500 Series Operation Manual

Single phase - .6/.8/1.0/1.2 kva; single phase - .6/.8/1.0 kva plus (32 pages)

UPS Toshiba UNINTERRUPTIBLE POWER SYSTEM 1600XP Installation And Operation Manual

Single phase - 3.6/6/8/10/14/18/22 kva (90 pages)

UPS Toshiba 1600XP Specifications

Single phase uninterruptible power systems (9 pages)

UPS Toshiba 1600XP SERIES Installation And Operation Manual

(140 pages)

Summary of Contents for Toshiba RELIABILITY IN MOTION 1000 Series

Page 2 Should further information be required or if problems arise which are not covered sufficiently, contact your local Toshiba sales office or (800) 231-1412 or by e-mail at toshibaups@tic.toshiba.com.

Page 3 UNINTERRUPTIBLE POWER SYSTEM Complete the information below for the UPS received. Unless otherwise specified on the warranty card, the warranty period for the UPS or UPS part is 36 months from the shipment date (see TIC Bill of Lading). Unless otherwise

specified on the warranty card, the warranty period for a UPS battery is 24 months from the shipment date (see TIC Bill of Lading).

Page 4: Table Of Contents

Table of Contents Manual’s Purpose and Scope.....V Contacting Toshiba International Corporation’s Customer Support Center ..VII EMC Statements.....VIII General Safety Instructions ..... X Important Safety Instructions .....XIII Instructions Importantes Concernant.....XVI Inspection/Storage/Disposal .....XVII Installation Precautions .....XIX Operating Precautions .....XXI 1.

Page 5 5.4 EPO Port (emergency power off) .....16 5.5 Network Transient Protector .....16 5.6 Load Segments .....16 6. User’s Guide to Operations.....17 6.1 UPS Startup and Shutdown .....17 6.2 Button Operation..... 17 6.3 Control Panel Functions ..... 18 6.4 Normal Display .....

Page 6: Manual's Purpose And Scope

Manual’s Purpose and Scope The purpose of this manual is to provide information on how to safely install, operate, and maintain your TIC power electronics product. This manual includes a section of general safety instructions that describes the warning labels and symbols that are used throughout the manual.

Page 7 TOSHIBA is a registered trademark of Toshiba Corporation. All other product or trade references appearing in this manual are registered trademarks of their respective owners. Toshiba International Corporation (TIC) shall not be liable for direct, indirect, special, or consequential damages resulting from the use of the information contained within this manual.

Page 8: Contacting Toshiba International Corporation's Customer Support Center

Contacting Toshiba International Corporation’s Customer Support Center Toshiba International Corporation’s Customer Support Center can be contacted to obtain help in resolving any Uninterruptible Power System problems that you may experience or to provide application information. The center is open from 8 a.m. to 5 p.m. (CST), Monday through Friday. The Support Center’s toll free number is US (800) 231-1412, Fax (713) 896-5212.

Page 9: Emc Statements

EMC Statements FCC Part 15 NOTICE: Pursuant to section 15 of the FCC rules this product has been tested and complies with the conditions of a Class B digital device. The product has been established as offering sufficient protection against dangerous interference for installations in a residential area.

Page 10 Declaration of Conformity Request Units labeled with a CE mark comply with the following standards and directives: Harmonic Standards: EN 50091-1-1 and EN 50091-2. EU Directives: 73/23/EEC, Council Directive on equipment designed for use within certain voltage limits. 93/68/EEC, Amending Directive 73/23/EEC. 89/336/EEC, Council Directive relating to electromagnetic compatibility.

Page 11: General Safety Instructions

General Safety Instructions DO NOT attempt to install, operate, maintain or dispose of this equipment until you have read and understood all of the product safety information and directions that are contained in this instruction manual. Safety Alert Symbol / Signal Words The Safety Alert Symbol indicates that a potential personal injury hazard exists.

Page 12 2. Warning — The word WARNING in capital letters preceded by the safety alert symbol indicates that a potentially hazardous situation exists that, if not avoided, could result in death or serious injury to personnel. WARNING 3. Caution/Attention — The word CAUTION or ATTENTION in capital letters preceded by the safety alert symbol indicates that a potentially hazardous situation exists that, if not avoided, may result in minor or moderate injury.

Page 13 Special Symbols Other warning symbols may appear in conjunction with the Danger, Warning, and Caution symbol and are used to specify special hazards. These warnings describe particular areas where special care and/or procedures are required in order to prevent serious injury and possible death. 1.

Page 14: Important Safety Instructions

UPS output and the load input. 3. The maximum ambient operating temperature is 104° F (40° C). 4. Battery servicing should be performed by a qualified Toshiba Representative only. 5. Unauthorized personnel should not service batteries.

Page 15 WARNING Misuse of this equipment could result in injury and equipment damage. In no event will Toshiba Corporation be responsible or liable for either indirect or consequential damage or injury that may result from the misuse of this equipment. CAUTION Do not dispose of the batteries in a fire.

Page 16 —Strict adherence to the following precautions is a requirement when working with batteries— To be performed by Qualified Personnel only. 1. Verify that the UPS is off and that the power cord is disconnected from the power source. 2. Remove watches, rings or other metal objects. 3.

Page 17: Instructions Importantes Concernant

Instructions Importantes Concernant LA SÉCURITÉ CONSERVER CES INSTRUCTIONS Cette notice contient des instructions importantes concernant la sécurité. ATTENTION Une battery peut présenter un risque de choc électrique, de brûlure par transfert d' énergie. ATTENTION L' élimination des batteries est règlementèe. Consulter les codes locaux à cet effet.

Page 18: Inspection/Storage/Disposal

Inspection/Storage/Disposal CAUTION Inspection Upon receipt of the UPS, an inspection for shipping damage should be performed. Use caution when removing the unit from the pallet. Refer to labels or documentation attached to packing material. Uncrating Check the unit for loose, broken, bent or otherwise damaged parts. If damage has occurred during shipping, keep all original crating and packing materials for return to the shipping agent.

Page 19 It is illegal to dump lead-acid batteries in landfills or dispose of improperly. Please help our Earth by contacting the environmental protection agencies in your area, the battery manufacturer, or call Toshiba toll-free at (800) 231-1412 for more information about recycling.

Page 20: Installation Precautions

Installation Precautions CAUTION 1. Install the unit in a well-ventilated location; allow at least 10 cm (4 inches) on all sides for air ventilation and for maintenance. 2. Install the unit in a stable, level and upright position that is free of excessive vibration.

Page 21 12. Connect the output terminals of the UPS to the load (refer to NEC Article 300 – Wiring Methods and Article 310 – Conductors For General Wiring). Size the branch circuit conductors in accordance with NEC Table 310.16. Conductor Routing and Grounding 1.

Page 22: Operating Precautions

CHARGE LED has gone out before opening the door of the UPS once the UPS power has been turned off. 8. Do not attempt to disassemble, modify, or repair the UPS. Call your Toshiba sales representative for repair information.

Page 23 12. The heat sink and other components may become extremely hot to the touch. Allow the unit to cool before coming in contact with these items. 13. Warning signs should be placed on or near the load as a notification that the load is being powered by the UPS.

Page 24: Introduction

1. Introduction The information provided in this manual covers single phase 1000 – 3000 VA uninterruptible power systems (UPS). Included in this manual is information on the installation, operation, safety precautions, shipping, and storage of the equipment. Installation must be carried out in accordance with this manual. Electrical installations must also follow local legislation and regulations.

Page 25: General Description

General Description As a double conversion on-line UPS, it is able to supply uninterrupted, clean single-phase power to your critical systems while keeping batteries charged continuously, even if the utility power fails. Other features of the UPS includes • Auto-Restart and Cold Start

features •...

Page 26: Efficiency Optimizer Function

IGBT Control SNMP Port/Dry Contact IGBT Control Figure 1. Block diagram • An input filter reduces transients on the main supply. • For maintaining full battery charge, AC-power is rectified and regulated in the rectifier feeding power to the inverter and battery converter. •...

Page 27: Free Run Mode

Alternating between bypass and on-line modes is achieved automatically and in accordance with the conditions of the utility power. On-line mode may be used during times of utility power irregularities. The bypass mode should be used when power flows smoothly in order to obtain the greatest efficiency. Irregularities can be detected in less than a second and the on-line mode can be reactivated immediately.

Page 28

Planning a UPS system should include the following considerations: • The total demand of the protected system shall dictate the output power rating (VA). Allow a margin for future expansion or calculation inaccuracies from measuring power requirements. • Backup time needed will determine the battery size needed. If the load is less than the UPS nominal power rating then the actual backup time will be longer.

Page 29: Storage

3. Storage Please adhere to the following instructions if the UPS is not installed when received: • Store the equipment in its original packing and shipping carton. • Store the unit in a temperature of 15° C to 25° C. •...

Page 30: Installation

4. Installation Environment To ensure safe and proper operation, ensure that the installation conforms to the following specifications. Ensure that the installation location is consistent with the following: • Avoid extreme temperature and humidity. Maximal battery life can be attained with a recommended temperature range of 15°...

Page 31: Rear Panel Views

Rear Panel Views 1000VA – 1500VA Tower Rear Panel EXTERNAL EXTERNAL BATTERY BATTERY (120V NEMA) (230V IEC) 2000VA – 3000VA Tower Rear Panel (120V NEMA) (230V IEC)

Page 32

1000 – 1500 VA Rack mount (2U) Rear Panel RM-2U 120V NEMA RM-2U 230V IEC 2000 – 3000 VA Rack mount (2U) Rear Panel RM-2U 120V NEMA RM-2U 230V IEC...

Page 33: Connection To Main Supply And Loads (1000 - 3000 Va)

Connection to main supply and loads (1000 – 3000 VA) The input cable is supplied with all models. • Ensure that the UPS is disconnected from the main supply and loads while connecting the External Battery Cabinets. • Use the battery cable supplied with the External Battery Cabinet to connect the External Battery Cabinet to the UPS.

Page 34

Figure 2 Example of Installation of Plug & Play products.

Page 35: Front Panel Settings

Front Panel Settings Listed below are the default settings of the primary UPS parameters. Settings Options Default Remarks 1) O/P VOLT SET 100V/110V/115V/120V/127V 120V 120V (FOR LV series) (output voltage 208/220/230/240 Vac 230V 230V (FOR HV series) set) 2) I/P FREQ SET +/- 2% +/- 5% Input Frequency range in...

Page 36

Settings Options Default Remarks 7) OUTLET GROUP1/GROUP2 Option 1 This is a load-shed feature. SETTING Option 1: 1 On /2 On Option 2: 1 Off /2 On Option 3: 1 Off /2 Off Option 4: 1 On /2 Off 8)BATTERY TEST TEST? Perform battery test immediately...

Page 37: Computer And Alarm Connections

5. Computer and Alarm Connections At the rear of the UPS is an interface that allows direct communication with a computer system (see figure 2). There is a RS232 serial data interface, a USB data interface, and an emergency power off switch. The RS232 port and the USB interface

cannot be used simultaneously.

Page 38: Dry Contact Interface (Optional Card)

Dry Contact Interface (optional card) DB9 Male Connector Outline (facing connector) Pin # Description I/O Type UPS fail, relay contact, normally open, active close. output Summary alarm, relay contact, normally open, active close. output One of the following signals activate this signal: 1) Output fault 2) Bus fault 3) Over temperature...

Page 39: Epo Port (Emergency Power Off)

port cannot be used when using the USB port. The USB cable is a standard cable and may be purchased separately. EPO Port (emergency power off) A customer-supplied switch located remotely may be used to open the EPO connection and force the UPS output receptacles to be switched off. The EPO function shuts down the equipment immediately.

Page 40: User's Guide To Operations

6. User’s Guide to Operations Normal ongoing UPS operation requires little or no user input. Startup and shutdown requirements of the user are discussed in this section. UPS Startup and Shutdown Starting the UPS • Ensure that installation is correct and that the input power cable is connected to a properly grounded outlet.

Page 41: Control Panel Functions

2. “ ” is the Enter button. (a) Press and hold the Enter button for at least 2 seconds to read the parameter settings of the UPS. Press the Enter button again to read the next parameter. (b) Ten seconds of inactivity will return the display to the original status. 3.

Page 42: Normal Display

Status of the UPS, measurements, and alarms are all indicated on the LCD screen. Tower Unit Rack Unit Figure 3 Control panel Normal Display The UPS status is shown in the normal display mode. The UPS Meters display and the Setting display may be accessed by pressing the Return button on Tower Unit and FUNC button on the Rack Unit.

Page 43: Ups Configurations

BACKUP TIME= xx min Shows Estimated Backup Time in Minutes BAT CHARG= xx% Shows Approximate Percentage of Battery Capacity TEMPERATURE= xxC Shows Approximate Ambient Temperature BAT PACK NUM= x Shows External Battery Pack Number RATING = xxxxVA Shows UPS Rating CPU VERSION xx.x Shows CPU Version UPS Configurations...

Page 44: Ups Manual Test

UPS Manual Test Manual UPS and Battery tests may be performed from the UPS configuration screen. Tests may be performed when the battery is not being charged. To run the battery test scroll to the “Manual Bat Test” parameter press the Enter button twice.

Page 45: Troubleshooting

6.11 Troubleshooting Displayed on LCD Audible Alarm Alarm Description What You Should Do Output Overload Two Beeps/sec The UPS is overloaded (in Remove loads from the UPS; least to Line Mode). More power most critical. If this solves the required than the UPS can problem, the UPS will return to provide.

Page 46: Maintenance

7. Maintenance With a minimal amount of maintenance you can expect years of satisfactory operation from the UPS unit. The most critical issues for the reliability of the UPS are environmental issues. Ensure that the temperature and humidity are always in accordance with the specifications and keep the area around the unit clean and dust free.

Page 47: Technical Specifications

NEMA 5-15 P (12 / 4) (Tower/2U) Environ- Operating 0 - 40°C (32 - 104°F) ment Temperature Altitude 11500 ft (3500 m) above sea level Warranty Three years on electronics Two years full replacement on battery (See Toshiba warranty policy for full details.)

Page 48: Power Range 1000-3000 Va (230V)

0 - 40°C (32 - 104°F) ment Temperature Altitude 11500 ft (3500 m) above sea level Warranty Three years on electronics Two years full replacement on battery (See Toshiba warranty policy for full details.) Standards - Safety: EN50091-1-1, Emissions: EN50091-2, Immunity: EN50091-2 B (1000-1500VA)

Page 49: Warranty Information

Toshiba Plant or a Toshiba Designated Authorized Service Center. Note (5) Toshiba Service dispatch available at normal business hours. Contacting Toshiba is possible 24 hours 7 days a week. User can purchase 24x7 dispatch programs offered through TIC's Service Department. TIC also encourages users to review TIC's UPS Preventative and Scheduled Maintenance/Parts Programs for...

Page 50: Limitations And Exclusions

(5 conditions below): Valve Regulated Lead Acid (VRLA) Batteries for Toshiba UPS Required Operating, Installation, and Maintenance Conditions Annual Average Temperature is to be 77°F (25°C) with no greater 1.

Page 51 FITNESS FOR A PARTICULAR PURPOSE. PROCEDURE User must contact TIC via e-mail upsservice@tic.toshiba.com, or phone 1-800-231-1412, no later than 90 days after User's discovery of occurrence or defect in UPS, UPS part, and/or BATTERY but in no event after the expiration of the respective warranty period. Subject to the limitations of this policy and product type, TIC service or TIC service representative shall repair/replace the UPS/part warranted hereunder, without charge for material, labor (on-site except in cases presented herein).

Page 52 THIS WARRANTY REPRESENTS THE ENTIRE AGREEMENT BETWEEN TIC AND USER WITH RESPECT TO THE SUBJECT MATTER HEREIN AND SUPERSEDES ALL PRIOR OR CONTEMPORANEOUS ORAL WRITTEN COMMUNICATIONS, REPRESENTATIONS, UNDERSTANDINGS OR AGREEMENTS RELATING TO THIS SUBJECT. End User: Model Number: Serial Number: Startup Date: Warranty End Date:...

This manual is also suitable for:

Ut1a1a010c6Ut1a1a015c6Ut1a1a020c6Ut1a1a030c6 kb2Ut1a1a015c6r kb2Ut1a1a020c6r kb2 ... Show all