

Toshiba 1500 Series Operation Manual

| 18 |  |  |  |
|----|--|--|--|
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |
| 26 |  |  |  |
| 27 |  |  |  |
| 28 |  |  |  |
| 29 |  |  |  |
| 30 |  |  |  |
| 31 |  |  |  |
| 32 |  |  |  |
|    |  |  |  |
|    |  |  |  |
|    |  |  |  |

Table of Contents

•

Troubleshooting

•

Bookmarks

•

Download this manual

Quick Links



# SINGLE PHASE 1500 1500

# SERIES and TOSHIBA MANUFACTURED IN THE U.S.A. OPERATION MANUAL

Table of Contents

### Related Manuals for Toshiba 1500 Series

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 1500 Plus Series Operation Manual 6/.8/1.0 kva 220v uninterruptible power system (31 pages) UPS Toshiba 1700 Series User Manual Uninterruptible power system single phase 1.5/2.0/2.4 kva (43 pages) UPS Toshiba 1600EP Series Operation Manual Battery cabinet system single phase- 8/10/14/18 kva (16 pages) **UPS Toshiba 1600EP Series Operation Manual** Battery cabinet system single phase - 3.6/6.0 kva (22 pages) **UPS Toshiba 1600EP SERIES Instruction Manual** (58 pages) UPS Toshiba RELIABILITY IN MOTION 1000 Series User Manual Single phase 1000 va to 3000 va uos (54 pages) UPS Toshiba 1000 Series User Manual Reliability in motion single phase 1000/1200 va (60 pages) **UPS Toshiba 1600 Series Instruction Manual** Single phase - 2.4/3.6/6/8 kva plus (49 pages) **UPS Toshiba 1600XP Specifications** Single phase uninterruptible power systems (9 pages) UPS Toshiba 1400XL Plus Series Operation Manual Uninterruptible power system single phase - 2.4/3.6/6.0/8.0 kva plus (37 pages) UPS Toshiba 1400 Series Operation Manual Toshiba 1400 series; 1400 plus series ups (31 pages) UPS Toshiba 1600XPi Series Installation And Operation Manual 8-22kva battery cabinet (23 pages) UPS Toshiba 1600XPi Series Installation And Operation Manual Single phase - 3.6/5.2/6/8/10/14/18/22 kva (140 pages) **UPS Toshiba 1400SE Series Operation Manual** Single phase - .6/.8/1.0/1.2/1.5/2.0/2.4 kva, single phase - .6/.8/1.0/1.5 kva plus (41 pages) UPS Toshiba 1400 XL PLUS Series Operation Manual

Battery cabinet system single phase - 2.4/3.6/6.0/8.0 kva plus (18 pages)

## Summary of Contents for Toshiba 1500 Series

Page 1 TOSHIBA UNINTERRUPTIBLE POWER SYSTEM SINGLE PHASE - .6/.8/1.0/1.2 kVA SINGLE PHASE - .6/.8/1.0 kVA PLUS 1500 1500 SERIES MANUFACTURED IN THE U.S.A. OPERATION MANUAL...

Page 2 TOSHIBA...

<u>Page 3</u> TOSHIBA NOTE Any electrical or mechanical modifications to this equipment, without prior written consent of Toshiba International Corporation, will void all warranties and may void UL listing or other safety certification. Unauthorized modifications also can result in personal

injury, death, or destruction of the equipment.

#### Page 4: Table Of Contents

TOSHIBA CONTENTS SECTION PAGE Disclaimer ......i Contents ......i-iii Introduction ...... iv General Safety Instructions .....v Important Safety Instructions ......vi-vii Product Description ......1-1 Theory of Operation ......1-1 Application and Use ......1-1 Power Backup ......1-1 Power Conditioning .....

#### Page 5: Contents

#### Page 6: Introduction

TOSHIBA INTRODUCTION safely Read this operation manual All safety warnings must be followed Follow all precautions General safety instructions are found on page v and important safety instructions are found on pages vi, vii, and viii. Read and save these instructions...

#### Page 7: General Safety Instructions

TOSHIBA GENERAL SAFETY INSTRUCTIONS Warnings Danger WILL DANGER Warning COULD COULD WARNING Caution CAUTION Attention warnings ATTENTION Danger Caution Electrical warnings Explosion warnings...

#### Page 8: Important Safety Instructions

TOSHIBA IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS- Model Capacity Manufacturer Type Quantity CAUTION CAUTION CAUTION WARNING WARNING...

<u>Page 9</u> TOSHIBA IMPORTANT SAFETY INSTRUCTIONS WARNING WARNING A battery can present a risk of electrical shock and high short DANGER circuit current. Contact with any part of a grounded battery can result in electrical shock.

Page 10 TOSHIBA INSTRUCTIONS IMPORTANTES CONCERNANT LA SÉCURITÉ CONSERVER CES INSTRUCTIONS ATTENTION ATTENTION Model Capacity Manufacturer Type Quantity ATTENTION viii...

#### Page 11: Product Description

TOSHIBA Product Description Theory of Operation Application and Use Power Backup Power Conditioning 1 - 1...

#### Page 12: Inspection/Storage/Disposal

TOSHIBA Inspection/Storage/Disposal Inspection of the new UPS equipment After Uncrating: Storage of UPS equipment. Avoid: Before storing: Storing: After storing: Disposal It is illegal to dump lead-acid batteries in landfills or to dispose of them improperly. 2 - 1...

#### Page 13: Precautions

TOSHIBA Precautions CAUTION Installation Precautions (General) 3 - 1...

#### Page 14: Prestart Precautions

TOSHIBA Precautions CAUTION Prestart Precautions CAUTION Operating Precautions The UPS may be supplying power to the output load receptacles through the bypass circuit. 3 - 2...

#### Page 15: Specifications

RS232 ASCII Options Software for unattended computer shutdown Contact Toshiba for details on this option External battery pack Contact Toshiba for details on this option (\*) Output capacity reduced when input voltage is between -15% and -30% of nominal. (\*\*) Battery backup time may vary depending on the operating conditions including ambient temperature at the installation site. Page 16 RS232 ASCII Options Software for unattended computer shutdown Contact Toshiba for details on this option External battery pack Contact Toshiba for details on this option (\*) Output capacity reduced when input voltage is between -15% and -30% of nominal. (\*\*) Battery backup time may vary depending on the operating conditions including ambient temperature at the installation site.

#### Page 17: Plus Series Specifications (With Isolation Transformer)

RS232 ASCII Options Software for unattended computer shutdown Contact Toshiba for details on this option External battery pack Contact Toshiba for details on this option (\*) Output capacity reduced when input voltage is between -15% and -30% of nominal. (\*\*) Battery backup time may vary depending on the operating conditions including ambient temperature at the installation site.

#### Page 18: Operating The Ups

TOSHIBA Operating the UPS Operation Modes 5.1.1 AC Input Mode (normal operation) Power flow in AC input mode 5.1.2 Battery Backup Mode Power flow in battery backup mode 5 - 1...

#### Page 19: Circuit Bypass Mode

TOSHIBA Operating the UPS Operation Modes 5.1.3 Circuit-bypass mode Power flow in circuitbypass mode. The energy flow must be transferred manually from the UPS's bypass circuit back to the inverter circuit after first correcting the fault. System Protection Features [...

#### Page 20: Operation Monitoring

TOSHIBA Operating the UPS Operation Monitoring 5.3.1 Visual Indicator Functions AC Input On Line Fault 5.3.2 Audible Alarm Functions 5.3.3 Visual and Audible Indicator Function Chart Audible Condition Cause Visual Alarm Indicators Operation Pattern 1.5s .5s .5s .5 - 3...

#### Page 21: Front Panel Layout

TOSHIBA Operating the UPS Front Panel Layout green green UPS On-Line Mode Display green When output current is During battery backup all between 30% and 100%, green lamps flash and the the green lamps light in red Backup lamp is lit 15% increments (from continuously.

#### Page 22: Battery Recharging

TOSHIBA Operating the UPS (Cont'd) Battery Recharging Rated battery voltages 5 - 5...

#### Page 23: Battery Backup Time

TOSHIBA Operating the UPS Battery Backup Time Battery Low Voltage Tolerances UPS Capacity 600VA 800VA 1000VA 1200VA 600VA 800VA 1000VA Plus Plus Plus Battery Check Function If the batteries are indicated "bad" then STOP the UPS and allow a 24 hour charge on the batteries before restarting.

Page 24 TOSHIBA UPS Control Interface DB25 Connector Pinout Symbol Description 6 - 1...

#### Page 25: Ups Control Interface

TOSHIBA UPS Control Interface RS-232C Serial Communication Interface Output voltage Output current Battery voltage Input frequency Output frequency Utility power OK Low battery voltage detected UPS in BYPASS mode UPS in NORMAL mode Input and output frequency synchronized UPS [fault] occurred...

#### Page 26: Troubleshooting Procedures

TOSHIBA Troubleshooting Procedures Non-Fatal Fault Mode Non-Fatal Fault Mode Display Chart 7 - 1...

#### Page 27: Fatal Fault Mode

TOSHIBA Troubleshooting Procedures Fatal Fault Mode Fatal Fault Mode Display Chart 7 - 2...

#### Page 28: Preventive Maintenance/Parts Replacement

TOSHIBA Preventive and Scheduled Maintenance/Parts Replacement Preventive Maintenance Before performing any maintenance, the technician should CAUTION be familiar with and follow the important safety instructions located on pages vi and vii. WARNING Parts Replacement 8 - 1...

#### Page 29: Fuse Rating Chart

TOSHIBA Preventive and Scheduled Maintenance/Parts Replacement Fuse Rating Chart Fuse rating 8 - 2...

#### Page 30: External Dimensions/Panel Layout/Shipping Weights

TOSHIBA External Dimensions/Shipping Weights/Panel Layout External Dimensions 9 - 1...

#### Page 31: Panel Layout

TOSHIBA External Dimensions/Shipping Weights/Panel Layout Panel Layout Shipping Weights Shipping Weight Model Pounds Kilograms 9 - 2...

Page 32 TOSHIBA TOSHIBA INTERNATIONAL CORPORATION INDUSTRIAL DIVISION 13131 West Little York Rd., Houston Texas 77041 Tel: [800] 231-1412 Fax: [713] 466-8773 Telex: 762078 Printed in U.S.A.

# This manual is also suitable for:

1500 plus series600 va800 va1000 va1200 va600 va plus ... Show all