

TOSHIBA

Toshiba 288V Installation And Operation Manual

Scib energy storage system

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288V SCiB Energy Storage **TO** System

Part # 203810-000

April 2021

Manufactured in the USA

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INSTALLATION AND OPERATION MANUAL

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[Page 4](#) The instructions contained in this manual are not intended to cover all of the details or variations in equipment, or to provide for every possible contingency concerning installation, operation, or maintenance. Should further information be required or if problems arise which are not covered sufficiently, contact your Toshiba sales office or call Toshiba Power Electronics

Division at 855-803-7087 Nothing in this manual shall alter Toshiba International Corporation's standard terms and conditions or the...

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[Page 9: Introduction](#)

Introduction Thank you for your purchase of your Toshiba Energy Storage System device. This manual provides information on how to safely install and operate your SCiB Energy Storage System (ESS). This manual includes a section of general safety instructions that describes the warning labels and symbols that are used throughout the manual. Read the manual completely before installing, operating, or performing maintenance on this equipment.

[Page 10: General Safety Instructions](#)

Ground Symbol indicates the location of the equipment grounding conductor. Electrical - Voltage & Shock Hazard Symbol indicates parts inside may cause electric shock. Explosion Hazard Symbol indicates parts may explode. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 11: Signal Words](#)

Be trained in the proper care and use of protective equipment such as safety shoes, rubber gloves, hard hats, safety glasses, face shields, flash clothing, etc., in accordance with established safety practices. • Be trained in rendering first aid. For further information on workplace safety visit www.osha.gov. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 12: Factory Authorized Personnel](#)

Factory Authorized Personnel Factory authorized personnel have been factory trained and certified to install, service, and repair the SCiB Energy Storage System (ESS). Contact the Toshiba Customer Support Center for assistance in locating the factory-authorized personnel nearest you. Important Safety Instructions The following contains important instructions that should be followed during the installation, operation, and maintenance of the SCiB ESS.

[Page 13: Scib Energy Storage System Safety](#)

Hazardous DC voltages are present in the system. This hazard will always be present in a battery system including when it is offline. The Toshiba SCiB Modules within the SCiB ESS can present a risk of electrical shock and high short circuit current. Use extreme caution when installing and maintaining the system.

[Page 14: Unintended Usage](#)

Disclaimer IN NO EVENT WILL TOSHIBA CORPORATION BE RESPONSIBLE OR LIABLE FOR EITHER INDIRECT OR CONSEQUENTIAL DAMAGE OR INJURY THAT MAY COME FROM THE MISUSE OF THIS EQUIPMENT. ANY MODIFICATIONS WITHOUT AUTHORIZATION BY TOSHIBA COULD RESULT IN PERSONAL INJURIES, DEATH OR DESTRUCTION OF THE SCiB ESS.

[Page 15: General Maintenance](#)

Contact the authorized Toshiba Customer Support Center or an authorized Toshiba representative for information on proper disposal of SCiB ESS components. It is illegal to dispose of certain components without conforming to environmental regulations for industrial/commercial waste. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 16: Transporting](#)

Always use a crane, forklift, or pallet jack for transporting and positioning the units. Pushing/pulling on the sides of the unit to move it may result in damage to the SCiB ESS. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 17: Battery Disposal](#)

○ Characters are to be at least 12 mm (0.47in.) high. ● Returned SCiB module must be marked with the Toshiba International Corporation UPS RMA#. If possible the Returned SCiB module should be shipped at 30% SOC 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 18: Dc Arc Flash Warning](#)

• If provided, DO NOT remove the protective plastic sheet cover until installation. • Immediately report any abnormalities to Toshiba Customer Support Center or an authorized representative. Unpacking the SCiB ESS Cabinet CAUTION TOP HEAVY EQUIPMENT. THIS EQUIPMENT WILL TIP OVER EASILY UNTIL FIXED IN PLACE.

[Page 19](#) 1. Remove shrink wrap and honeycomb packing from the cabinet. 2. Carefully inspect the SCiB ESS Cabinet for shipping damage. 3. Unbolt the unit rails from the shipping pallet. FIGURE 4.1: UNSHIPPING SCiB ESS CABINET 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 20: Transporting By Forklift](#)

DO NOT tilt units when lifting and/or transporting. Minimize the impact when lowering the cabinet to the floor. Insert the forks here 14in. 6 in. 6 in. FIGURE 4.2: 288V SCiB ESS CABINET: SIDE VIEW - FORK ACCESS DIMENSIONS IN CHANNEL BASE 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 21: Warning Labels](#)

Below are representative warning labels and their location on the SCiB Energy Storage System. NOTICE Make sure all the warning labels are installed in the appropriate locations. If a label is missing or illegible, contact Toshiba Customer Support Center or an authorized representative. NOTICE The SCiB Energy Storage Cabinet contains Lithium Ion Batteries.

[Page 22: Storage/Operating Environment](#)

The optimal relative humidity at the storage location should be between 50 - 60%. • Humidity must not exceed 90%. • Avoid locations where UPS may be exposed to corrosive gas. • Avoid locations with dirt and/or dust. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 23: Operating Precautions](#)

2. DO NOT insert metal objects or combustible materials in the ventilation slots of the SCiB ESS. 3. DO NOT place, hang, or paste any objects on the exterior surfaces of the SCiB ESS. 4. DO NOT attempt to disassemble, modify, or repair the SCiB ESS. Call your Toshiba sales representative for repair information.

[Page 24: Maintenance Precautions](#)

1. Turn off, lockout, and tagout ALL power sources before connecting the power wiring to the equipment or when performing maintenance. factory authorized 2. Only personnel should service the SCiB ESS. Contact Toshiba for the nearest authorized service center. Qualified Personnel ONLY! Qualified Personnel have the skills and knowledge relating to the construction, installation, operation, and maintenance of the electrical equipment and has received safety training on the hazards involved (Refer to the latest edition of NFPA 70E for additional safety

requirements).

[Page 25: Installation](#)

SCiB ESS after initial installation. Electrical shock, injury or UPS/ESS failure may occur if non-authorized technicians attempt to modify or relocate the SCiB ESS. Please contact Toshiba Customer Support Center if you plan to move or make modifications to the ESS CAUTION Install the UPS system in a controlled environment.

[Page 26: Installation Procedure](#)

Voltage exists at battery terminals. Proper PPE should be worn when making electrical connections 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 27: Anchorage](#)

Once unpacked and moved to final location, install the ESS using the four holes in the channel base. Anchor the unit using appropriate hardware. Reference Figure 7.1 for base dimensions and anchoring hole details.. FIGURE 7.1: BOTTOM VIEW OF SCiB ESS 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 28: Seismic Anchorage](#)

Floor & Wall Mounted Floor Mount Only (z/h=1) 1.06g 0.53g (z/h=0) 1.70g 0.85g Values apply to both standalone or a group of modules with or without being physically connected together. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 29: Procedure For Cable/Wire Connections \(4400 Series Ups\)](#)

2. Connect 208VAC from distribution fed by UPS output to the orange connector in the SCiB as shown in Figure 7.5. Toshiba provides the connector CN-UPS-1 and CN-UPS-2. Strip the wire and firmly press into the connector. Use only one conductor per port. Ensure the wire is not exposed after firmly pushing into the connector.

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[Page 35: Operation](#)

UVR. This could be due to the control power breaker (CB1) in the ESS being turned off while MCCB1 is in the "ON" position or after a battery backup where the UPS hits the shutdown setpoint before power is restored. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 36: Specifications](#)

11.9" W x 37.1" D x 66.8" H Shipping Dimensions 31" W x 46" D x 76" H Cable Entry Top, Bottom AC Input (Control Power) 208VAC, 5A, 2 wire 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 37: Interfaces](#)

BMU or Abnormal BMU. Contact Toshiba Seconds Field Service if problem persists. Host to Host (CN5 PCB Blink One 90700) loss of Time Every 5 System General Communication Error. Steady communication. Seconds 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 38: Unit Fault Conditions](#)

4. If SOC percentage \leq Minimum SOC Percentage Threshold (5%). 5. If optional fuse indicators are opened. (Only if installed) 6. If battery breaker is opened. *value is subject to change. 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 39: Appendix A - Dimensional Drawings](#)

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[Page 40: Appendix B - Modbus Register Map](#)

Max. cell voltage indicated by 1mV/LSB (2.75V) Min. cell voltage (warning) 40023 Min. cell voltage indicated by 1mV/LSB (1.5V) Over temp. (warning) 40024 Fault temp. indicated by 1°C/LSB (55°C) 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 41](#) Usage range: module No. module No. 1 to 28. module No. 1 to 28. SOC (%) 40049 SOH (%) 40050 SOC(%) / Avg Cell Temp 40053 SOC(%) / Avg Cell Temp 40054 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 42: Register Details](#)

Bit 4: Overcurrent Bits 5-15: reserved 40025 - Cell Balancing Function Values: 1 - True, 0 - False Bit 0: BMU cell balancing is enabled 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 43: Cell Level Monitoring Registers](#)

40173 40191 40209 40227 40245 Cell Temperature 5 40102 40120 40138 40156 40174 40192 40210 40228 40246 Cell Temperature 6 40103 40121 40139 40157 40175 40193 40211 40229 40247 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 44](#) CMU Registers Name Register Number CMU STATUS BYTE 1 40736 CMU STATUS BYTE 2 40737 CMU STATUS BYTE 3 40738 CMU STATUS BYTE 4 40739 288V SCiB Energy Storage System Installation and Operation Manual - 203810-000...

[Page 46](#) SOCIAL INFRASTRUCTURE SYSTEMS GROUP POWER ELECTRONICS DIVISION - UPS 13131 West Little York Road, Houston, Texas 77041 US (855) 803-7087 Fax. (713) 896-5212 Canada (800) 872-2192 www.toshiba.com/tic/industrial/uninterruptible-power-systems Printed in the U.S.A.