



Toshiba HCV-1JBU Vacuum Contactor, 1.5kV - 600A HCV-1KAU Vacuum Contactor, 1.5kV - 720A Instruction Manual

Vacuum contactor, 1.5kv - 600a & 720a

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INSTRUCTION MANUAL

INSTALLATION - OPERATION - MAINTENANCE

HCV-1JBU Vacuum Contactor, 1.5kV - 600A

HCV-1KAU Vacuum Contactor, 1.5kV - 720A

Issued: 12/05

Manufactured in the USA

Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.ctiautomation.net - Email:
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Occupancy sensor (4 pages)

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Occupancy sensor kit (2 pages)

Summary of Contents for Toshiba HCV-1JBU Vacuum Contactor, 1.5kV - 600A HCV-1KAU Vacuum Contactor, 1.5kV - 720A

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MAINTENANCE HCV-1JBU Vacuum Contactor, 1.5kV - 600A HCV-1KAU Vacuum Contactor, 1.5kV -
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[Page 2](#) Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.ctiautomation.net - Email:
info@ctiautomation.net...

[Page 3](#) WARNING you have first read and understood all of the relevant product warnings and
user directions that are contained in this Instruction Manual. To contact Toshiba, address all
correspondence to: Field Service Department Toshiba International Corporation 13131 West
Little York Road...

[Page 4](#) Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.ctiautomation.net - Email:
info@ctiautomation.net...

[Page 5: Safety](#)

SAFETY Page 1 IMPORTANT MESSAGES Read this manual and follow its instructions. Signal
words such as DANGER, WARNING and CAUTION will be followed by important safety
information that must be carefully reviewed. Indicates a situation that will result in death,

serious injury, and severe DANGER property damage if you do not follow instructions.

[Page 6](#) Be trained in rendering first aid. SAFETY CODES Toshiba HCV-1JBU and HCV-1KAU vacuum contactors are designed and built in accordance with NEMA ICS 3-2, UL 508, CSA 22.2-14 and IEC 60470. Installations must comply with all applicable state and local codes, adhere to all applicable National Electric Code (NFPA 70) standards and instructions provided in this manual.

[Page 7](#) SAFETY Page 3 HAZARDOUS VOLTAGE will cause severe injury, death, fire, explosion, and DANGER property damage. • Turn off and lock out Primary and Control Circuit Power before servicing. • Keep all panels and covers securely in place. • Never Defeat, Modify, or Bypass any Safety Interlocks •...

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[Page 10: Introduction](#)

Page 6 INTRODUCTION It is the intent of this manual to provide a guide for safely installing, operating and maintaining Toshiba vacuum contactors. This manual consists of a section of general safety instructions and is marked throughout with warning symbols. Read this manual thoroughly before installation, operation and maintenance of this equipment.

[Page 11: General Description](#)

GENERAL DESCRIPTION Page 7 COMPONENTS The Toshiba HCV-1JB and HCV-1KA vacuum contactors described in this manual are suitable for use on systems of 1.5kV, 600A and 1.5kV, 720A respectively. Arc interruption is accomplished inside sealed vacuum interrupters mounted on track-resistant insulators.

[Page 12: Indicators And Controls](#)

Page 8 GENERAL DESCRIPTION INDICATORS AND CONTROLS The following indicator is provided: On-Off Indicator - Indicates if the contactor is OFF (Green) or ON (Red). When the indicator reads OFF, the main contacts of the contactor are open. When the indication is ON, the main contacts are closed.

[Page 13: Receiving, Inspection And Handling](#)

This may cause damage. File a claim with the carrier for any damaged or missing items and immediately notify the nearest Toshiba representative. Do not install or energize WARNING equipment that has been damaged. Damaged...

[Page 14: Installation](#)

The tightening torque should be 120-150 kgf-cm (9-11 ft-lb). See Table 1 for Toshiba HCV-1JBU and HCV-1KAU contactors tightening torque specifications. are intended for use in usual service conditions as defined in NEMA ICS 1. The temperature of...

[Page 15: Ground Connections](#)

INSTALLATION Page 11 Use two wrenches to The ground wire should be 8 AWG or larger. CAUTION torque the connection to Then reattach the terminal using the same bolt prevent applying excessive previously removed and torque to 9-11 ft-lb force to the terminal, which (120-150 kgf-cm).

[Page 16: Pre-Energization Check](#)

Page 12 PRE-ENERGIZATION CHECK GENERAL ELECTRICAL CHECKS BEFORE ENERGIZING THE CONTACTOR for Electrical shock hazard. WARNING the first time, follow the procedure below to verify Do not touch energized that the equipment is properly installed and components during a test using auxiliary power.

[Page 17: Operation](#)

OPERATION Page 13 MOVING THE CONTACTOR FROM THE OFF TO THE ON POSITION TO MOVE THE CONTACTOR TO THE ON POSITION: 1. Turn ON circuit control power to move the contactor to the ON position 2. Verify that the position indicator reads ON (Red).

[Page 18: Internal Connection Of The Normally Energized Type](#)

Page 14 OPERATION LEGEND 52 CC Closing Coil T1-T4 Terminal Block A1-A2..... Closing Supply AC/DC Vacuum Bottles Auxiliary Switch Drive Unit Closing Supply AC/DC Figure 8 – Internal Connection of the Normally Energized Type LEGEND 52 CC Closing Coil T1-T2

[Page 19: Standard Operation Circuit Of The Normally Energized Type](#)

OPERATION Page 15 LEGEND Re m o t e 52 CC Closing Coil OF F Op e r a t i o n T1-T2 Terminal Block S w i t c h GL Green Light OF F RL Red Light CR.....

[Page 20: Maintenance](#)

Page 16 MAINTENANCE MAINTENANCE PROGRAM MAINTENANCE RECORD In order to ensure continued reliable and safe Keep a permanent record of all maintenance operation of the equipment, a program of work. At a minimum, this record should include periodic maintenance must be established. information on: Operating and environmental conditions will usually dictate the frequency of inspection...

[Page 21: Inspection And Maintenance Types](#)

MAINTENANCE Page 17 RECOMMENDED INSPECTION AND Table 1 - Tightening Torque MAINTENANCE TYPES Screw Nominal Tightening Torque Diameter NOTE: Refer to the SAFETY section of this manual for important information. 15-20 kgf-cm (13-17 in-lb) 1. Acceptance Inspection 30-40 kgf-cm (26-34 in-lb) This inspection confirms that the contactor is 50-65 kgf-cm (43-56 in-lb) complete,...

[Page 22: Table 2 – Check Points For Periodic Inspection](#)

See Electrical contact wear. Service Life (Page wipe. interrupter. 23). Vacuum Apply 10kV AC for 1 Check vacuum level by If breakdown occurs, level. minute. withstand voltage test. contact Toshiba. Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.ctiautomation.net - Email: info@ctiautomation.net...

[Page 23](#) Wipe with a clean, Frame and matter or dust, foreign matter or dry cloth. If Flanges damage breakage. damaged, contact Toshiba. Control Auxiliary See Table 3. Contact wear and wipe. Replace if wear or Circuits Switch Make sure there is no damage is dust.

[Page 24: Table 3 – Gap/Wipe Standard Values \(Contactor In New Condition\)](#)

Measure Measure dielectric 10kV AC or 14kV DC for If breakdown occurs, Strength main circuit strength between 1 minute. contact Toshiba. phases and between circuits and ground. Open/Close Perform open/close If not normal, check Operation operation by electric and repair. If...

[Page 25: Vacuum Check](#)

TEST EQUIPMENT: checker or AC hi-pot machine. Connect all the load side primary terminals together and Toshiba offers a compact vacuum checker (Type to the ground terminal of the vacuum CI35-1D, Figure 11) which enables a quick and checker or AC hi-pot machine.

[Page 26: Application Of Test Voltage For Vacuum Check](#)

Page 22 MAINTENANCE CRITERIA: 1 minute 1. If a current flow above 5 milli-amperes is 10kV AC observed or if breakdown occurs, one or (14kV DC) more of the interrupters has insufficient vacuum and must be replaced. If the current exceeds 5 milli- Voltage Exception: amperes the

first time the voltage is brought...

[Page 27: Electrical Service Life](#)

The maximum number of open/close operations Stationary Core Detailed inspection and is 500,000 regardless of the magnitudes of the cleaning every 500,000 currents interrupted. Contact Toshiba for operations. information regarding replacement vacuum interrupters. Closing Coil...

[Page 28: Storage And Disposal](#)

Page 24 DISPOSAL AND STORAGE STORAGE If the contactor is to be stored for any length of time prior installation, following precautions should be taken. 1. The original packing should be restored, if possible. 2. Do not subject the equipment to moisture or sunrays.

[Page 29: Specifications](#)

SPECIFICATIONS Page 25 Table 5 - Ratings Items HCV-1JBU HCV-1KAU Rated Insulation Voltage Rated Operation Voltage 208-1500 Rated Operational Current Rated Frequency 50/60 Rated Making Current (close 100 times) (close 100 times) Rated Breaking Current 5.76 (close-open 25 times) (close-open 25 times) Rated Insulation Level AC 10 Impulse 45 AC 10 Impulse 30...

[Page 30: Warranty And Limitation Of Liability](#)

WARRANTY AND LIMITATION OF LIABILITY Page 26 Toshiba International Corporation ("Company") warrants that all equipment and parts described herein will be free from defects in materials and workmanship. THIS WARRANTY WILL EXPIRE EIGHTEEN (18) MONTHS AFTER THE DATE ON WHICH SUCH EQUIPMENT AND PARTS (EXCLUDING REPAIRED OR REPLACEMENT...

This manual is also suitable for:

Hcv-1kau