

TOSHIBA

Toshiba CV-10HB Instruction Manual

High-voltage vacuum contactors

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Summary of Contents for Toshiba CV-10HB

[Page 1](#) TOSHIBA INSTRUCTION MANUAL HIGH-VOLTAGE VACUUM CONTACTORS CAPACITOR APPLICATION C O R P O R A T I O N...

[Page 2](#) TOSHIBA Read this manual carefully to fully understand the operation. And keep for maintenance. WARNING : Never rlsmodel or disassemble the equipment nor mount This equipment shall only be used inside a metal enclosure (grounded) in other establishments than domestic , or those that are connected to the public power source system.

[Page 3](#) TOSHIBA PRECAUTIONS IN SPECIAL APPLICATION (outdoor cubicle etc.) In application, check the follow items, please carry out the maintenance frequently. or perform the countermeasure. (Visual inspection: once a month, regular inspection: once a year) Precaution in special application Table 2...

[Page 4](#) TOSHIBA 3. RECEIVING AND UNPAKING WARNING : If any parts are damaged or

missing. Make the following checks after unpacking : (1) Check if there is any damage , foreign matter trapped , or water seepage into the contactor. (2) Check the nameplate to see if the specifications on the plate are correct.

[Page 5](#) TOSHIBA INSTALLATION When installing , protect from dust. Particularly when the contactor is installed while the building is under construction , shield it from cement dust and other foreign matter. The following precautions should be taken. (1) The mounting surface must be horizontal (level : less than *1 mm).

[Page 6](#) TOSHIBA DANGER : Do not exceed the ratings specified on the contactor. Table 3 Ratings Type- form Operating mechanism Rated operation voltage Rated insulation level Rated operational current Thermal current Rated frequency Rated short-time withstand Rated making capacity Rated breaking capacity...

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[Page 8](#) TOSHIBA STRUCTURE...

[Page 9](#) The drive unit for the electromagnet is installed in the bottom frame. Molded and wired on the printed circuit. The closing circuit can be operated using either in AC or DC by the drive unit. The optional latch trip circuit uses DC as standard. When a latched contactor is operated using AC power, it is recommended that a Capacitor trip device be used.

[Page 10](#) TOSHIBA CONNECTION OF CONTROL POWER SUPPLY Fig.4 and Fig.5 show the internal connections of the normally energized type latched type respectively. According to these figures, connection should be made of the control power supply and open / close command contact (power relay contact).

[Page 11](#) TOSHIBA (2) STANDARD OF OPERATION CIRCUIT Shown below are the vacuum contactor and its auxiliary circuits (control and monitoring). Fig.5 represents the standard operation circuit of the normally energized type and Fig.6 the latched type. Wiring should be done according to these circuit diagrams.

[Page 12](#) TOSHIBA (a) Shunt trip (b) Capacitor trip Fig.7 Standard operation circuit of latched type. NOTE : 0 Electrical trip-free circuit must be prepared outside the contactor. control circuit. if DC power source is not available, employ a AC closing and a Be :sure to use the control connector between No.3 and No.1 3...

[Page 13](#) TOSHIBA 1 0 . Warning : Make sure main power is OFF. After mounting and wiring of the vacuum contactor, make the following inspections. Check for any loose connections. Check for any wiring errors. Perform this test with only the control circuit energized.

[Page 14](#) TOSHIBA 1 1 . INSPECTION AND MAINTENANCE To maintain the function and performance of the vacuum contactor for a long period of time, the following inspections and maintenance procedures are recommended. The intervals between inspections may vary depending on the conditions of use and the environment under which the contactor is used.

[Page 15](#) (2) Periodical Inspection/Detailed Inspection(every 1-2 years or every 20,000 operations) The facility should be removed out of service and perform inspection According to the instruction given in Table 6. : Contact with energized components can cause or death. Turn-off and lock out primary and control...

[Page 16](#) TOSHIBA Table 6 Periodical inspection and detailed inspection What to do Replace broken Parts. dust adheres to the Clean. Under dusty environments, frequent inspection Check for wear, loose or Check by sight. Clean parts and remove foreign check correct matters.

[Page 17](#) TOSHIBA What to do Control wiring Check for discoloration equipment and tightness. Auxiliary switch Amount of dust attached Drive unit Overheat, discoloration. More than 50M R Insulation Main circuit When the insulation Measure insulation resistance resistance between phases, between electrodes and between level, investigate the circuits and ground.

[Page 18](#) TOSHIBA Table 7 Gap/wipe standard value Parts Vacuum interrupter 1 2 . CRITERIA FOR DURABILITY (1) Electrical service life The electrical service life of the vacuum interrupter is

defined by the electrode wear the number of open/close operations (mechanical life).

[Page 19](#) (2) Mechanical service life The normally energized type has the mechanical service life of 0.25 million operations , and the latch type 0.25 million operations. (The mechanical service life of the vacuum interrupter is 100,000 operations.) For the components listed below, replacement or detailed inspection and cleaning are recommended after the indicated number of operations.

[Page 20](#) TOSHIBA (3) Service life of capacitor Opening and closing of the capacitor produces severe conditions for contactors, such as high frequency inrush current and interpole recovery voltage more than twice the normal voltage. The criteria of the maximum number of the capacitor current switching operations is shown in the graph below.

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[Cv-10hbl](#)