



# TOSHIBA

Toshiba E6580772 Instruction Manual

Optional add-on cassette



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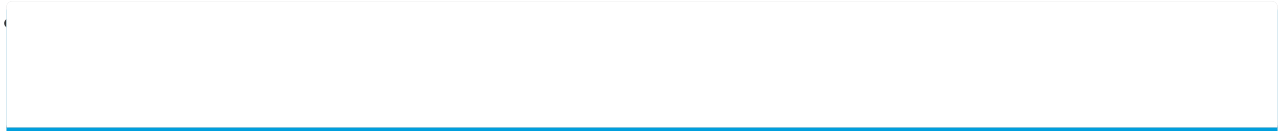
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**TOSHIBA**

Optional add-on cassette

F10M option unit Instruction manual

- 1. Make sure that this instruction manual is delivered to the end user of the the F10M option unit.
- 2. Read this manual before installing or operating the inverter unit, and store it in a safe place for reference.

NOTE

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E6580772

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## Related Manuals for Toshiba E6580772

### [Accessories Toshiba Adjustable Speed Drive H3 Operation Manual](#)

Variable torque adjustable speed drive (122 pages)

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Occupancy sensor (2 pages)

### [Accessories Toshiba TCB-SIR41UM-E Operation Manual](#)

Occupancy sensor (4 pages)

### [Accessories Toshiba TCB-SIR41UYP-E Installation Manual](#)

Occupancy sensor kit (2 pages)

## Summary of Contents for Toshiba E6580772

[Page 1](#) E6580772 Optional add-on cassette F10M option unit Instruction manual NOTE 1. Make sure that this instruction manual is delivered to the end user of the the F10M option unit. 2. Read this manual before installing or operating the inverter unit, and store it in a safe place for reference.

### [Page 2: Safety Precautions](#)

Disassembling the inverter could cause electric shocks, fire or injuries. Never Disassemble Request your TOSHIBA dealer for repairs. Do not remove connectors when the power is on. It could lead to electric shocks. ▼ Do not put or insert foreign objects such as waste cable, bars, or wires into the inverter.

[Page 3](#) E6580772 Warning Do not install the inverter in any place subject to vibrations or it could fall. Otherwise it can cause injury to people. Prohibited Wiring Danger ▼ Be sure to perform the following preparatory work before proceeding to wiring.

[Page 4](#) E6580772 Introduction Thank you for purchasing the "F10M option unit" for industrial inverter TOSVERT VF-A7 and later series. Read this manual carefully before using the unit. Keep this manual near at hand of the operator who uses the "F10M option unit" for future reference in the maintenance and inspection.

### [Page 5: Table Of Contents](#)

E6580772 Contents 1. NAME AND FUNCTION OF EACH SECTION .....5 1.1 Appearance .....5 1.2 Name of each section (terminal) .....6 2. CONNECTION TO THE INVERTER..... 7 2.1 Connection to the inverter .....7 2.2 Wiring .....9 3. FUNCTIONAL DESCRIPTION.....10 3.1 F10M communication function .....10...

## [Page 6: Name And Function Of Each Section](#)

E6580772 1. Name and function of each section Following figure shows appearance and name of each section of the F10M option unit. 1.1 Appearance Inverter connecting side Connector (left side) View when the cover is removed TB1 detachable terminal block Phoenix MSTBT2.5/4-ST-5.08...

## [Page 7: Name Of Each Section \(Terminal\)](#)

E6580772 1.2 Name of each section (terminal) TLF001Z ○ ○ SCAN LED for status display ○ ○ POWER 1 SL1 Transmitting and receiving data (positive) 2 SL2 Transmitting and receiving data (negative) 3 SG Signal ground 4 SHD Terminal for shield (no connection inside)

## [Page 8: Connection To The Inverter](#)

E6580772 2. Connection to the inverter Connect the F10M option unit to the inverter according to the procedures below. 2.1 Connection to the inverter (1) Confirm that the all power to the inverter are turned off beforehand. Note: Wait 10 minutes or more after turning the power off and confirm that the charge lamp on the inverter is unlit.

[Page 9](#) E6580772 Connection with options When two or more optional add-on cassettes are used, connect them with reference to the following diagram. Mounting of relay board for connecting options Following the diagram below mount the board which is attached to the F10M option unit onto the unit for connecting options.

## [Page 10: Wiring](#)

E6580772 2.2 Wiring When conduct wiring, follow the instructions below. Use shield wire for control signal line and ground the unit with shield wire. Applicable wire size for TB1 is 0.2 to 2.5mm For TB2, it is 0.2 to 1.5mm Peel off the end of the wire by about 5mm (7mm for TB1).

## [Page 11: Functional Description](#)

E6580772 3. Functional description In this section, functions added by the installation of this F10M option unit, on top of the standard inverter functions, are described. 3.1 F10M communication function Through the communication network, drive and stop control and concentrated monitoring control of operation status can be carried out by the programmable controller and industrial computer.

## [Page 12: Setting Of Communication Parameters](#)

E6580772 3.1.2 Setting of communication parameters To enable F10M communication, set following parameters to the inverter. The parameters will be validated by rebooting a power supply or changing a reset setting (f899) to1. When interrupting a transmission to change the setting of command input, reboot a power supply if necessary, since the data which have been received before the interruption of transmission are stored in the inverter.

## [Page 13: Communication Parameters](#)

E6580772 3.1.3 Communication parameters F10M communication parameters Parameter name Title Setting value Details Inverter number 0 to 255 Sets inverter station address. (Note 1) f802 When using a message transmission, set the address of the master station to 0 and address of the inverter station to 1 or over.

[Page 14](#) E6580772 Parameter name Title Setting value Details Com. Error 0 to 4 Sets the inverter operation at time of communication error. f850 selection The action of inverter will be different depending on the status (during operation or halt) of the inverter. (Note 2) 0: During halt Inverter stops after free run.

[Page 15](#) E6580772 Continuous operation depends on the status information that was before the communication error happens. Display of communication error will be [t]. Display of trip will be [err8]. When interrupting a transmission to change the setting of command input, reboot a power supply if necessary, since the data which have been received before the interruption of transmission are stored in the inverter.

## [Page 16: Vector Control With Sensor](#)

E6580772 3.2 Vector control with sensor Using the pulse-train feedback signal from the encoder installed on the motor shaft or load rotation shaft, vector control with sensor can be conducted.

Speed control operation :150% torque at 0 speed, speed control range 1:1000 (1000 ppr PG)  
speed accuracy  $\pm 0.02\%$  (50Hz base digital input)

### [Page 17: Connection Of Pg](#)

E6580772 3.2.2 Connection of PG As for the pulse input signals, PGA1 and PGA2 are connected for Phase A, PGB1 and PGB2 are connected for Phase B, and PGZ1 and PGZ2 are connected for Phase Z. (The wiring for Phase Z is done only when using Z-marker is necessary.) The polarity of the pulse input signals should be as follows: □+ side: PGA1, PGB1, PGZ1...

[Page 18](#) E6580772 Inverter Free run is stopped when OFF. Forward rotation with ON and reduce speed and stop with OFF Reverse rotation with ON and reduce speed and stop with OFF. When both forward and reverse rotation is ON, reverse rotation.

### [Page 19: Selection Of Encoder Type](#)

E6580772 ★ Caution in case of using open collector encoder connection In case using pulse command oscillator and open collector encoder, the rise time of the voltage when the transistor is OFF tends to be longer than the fall time at the time when the transistor is ON. Therefore, if the maximum input frequency becomes higher, the pulse duty cannot maintain the  $50\pm 10\%$  specification.

### [Page 20: Vector Control Setting Parameter](#)

2, 4, 6, 8, 10, 12, 14, 16 f412 Rated capacity of motor 0.1□280kW Depends on type. f413 Motor type 0: TOSHIBA Standard Motor 1 1: TOSHIBA VF motor 2: TOSHIBA V3 motor 3: TOSHIBA Standard motor 2 4: Other The motor constant parameter (f400 to f413) requires setting according to the motor used.

[Page 21](#) : Coefficient by number of motor poles (2 poles: 1.8 4 poles: 2.0 6 poles: 2.2) : Inverter capacity (Example: in case of 3.7kW unit P =3.7) : Load inertia/TOSHIBA standard motor inertia (Example: In case of inertia ratio being 4, J = 4) <Speed loop integration gain>...

### [Page 22: Monitoring Method For Feedback Amount](#)

E6580772 3.2.5 Monitoring method for feedback amount Motor rotation speed can be monitored. The motor is equipped with status monitor which is displayed on the panel and analog monitor which used analog output terminals (FM, AM terminals) Set items① and② for motor speed monitoring.

### [Page 23: External Diagram](#)

E6580772 4. External diagram Do not forget to reserve the space for the options at time of installation. External diagram of add-on options / External dimension diagram of unit with option installed (unit: mm) Dimension of optional unit When installing optional add-on cassette, secure sufficient space on the right side and front of inverter body.

### [Page 24: Specification](#)

E6580772 5. Specification <Environment Specification> Item Specification Indoor, less than 1,000 m from the sea level. Use Environment No direct sunlight, corrosive or explosive gas, steam, cutting dusts or dusts, grinding solution, and grinding oil. -10 to +50 Ambient Temperature...

[Page 25](#) E6580772 <<< Specifications of transmission> Use TOSLINE-F10M as a master station. For the connection with master station TOSLINE-F10 (standard type), refer to the instruction manual of "TOSLINE-F10M Communication function" (E6580773). Network (TOSLINE-F10M) specification Specification:TOSLINE-F10M (when repeater is used)

### [Page 26: Warranty](#)

E6580772 6. Warranty TOSHIBA provides warranty with the product under the following conditions. If and when a trouble occurs on the option unit properly installed and handled within one year of delivery, □. and if the trouble is clearly attributable to defects inherent in our design and manufacture, the product will be repaired free of charge.

This manual is also suitable for:

F10m