



Toshiba CC-Link TOSVERT VF-S11 Option Instruction Manual

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1. Make sure that this instruction manual is delivered to the end user of the CC-Link option for the VF-S11.
2. Read this manual before installing or operating the CC-Link option unit, and store it in a safe place for reference.
3. All information contained in this manual are subject to change without notice. Please confirm the latest information on our web site "www.inverter.co.jp".

TOSHIBA

TOSVERT VF-S11

Option Instruction Manual

CCL002Z

NOTICE

E6581422③

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Summary of Contents for Toshiba CC-Link TOSVERT VF-S11

[Page 1](#) E6581422© TOSVERT VF-S11 Option Instruction Manual CCL002Z NOTICE 1. Make sure that this instruction manual is delivered to the end user of the CC-Link option for the VF-S11. 2. Read this manual before installing or operating the CC-Link option unit, and store it in a safe place for reference.

[Page 2](#) E6581422© Safety precautions On the inverter and in its instruction manual, important information is contained for preventing injuries to users and damages to assets and for proper use of the device. Read the instruction manual attached to the inverter along with this instruction manual for completely understand the safety precautions, the symbols and

indications shown below.

[Page 3](#) E6581422③ Limitation of use Safety precaution ▼ Never use this unit with any device other than TOSVERT VF-S11 series inverters. Doing so may cause an accident. Handling in general Warning Never disassemble, modify or repair the product. ▼ Disassembling the product may cause electric shocks, fire or injuries. Disassembly prohibited For repairs, call your sales/repair agency.

[Page 4](#) E6581422③ Wiring Warning ▼ Turn off input power before installing and wiring this option. Wait at least 10 minutes and check to make sure that the charge lamp (VF-S11) is no longer lit. Mandatory ▼ Tighten the screws on the terminal block to the specified torque (Refer to Section 3.2 and 3.3).

[Page 5](#) E6581422③ Preface Thank you for purchasing a “CC-Link Option (CCL002Z)” for TOSVERT VF-S11 inverter. This option can connect with open field network CC-Link and data communications with the CC-Link master through installing this option in the VF-S11 and using it. Besides this instruction manual, the “CC-Link option Function Manual”...

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[Page 7: Overview](#)

E6581422③ 1. Overview This option allows the VF-S11 inverter to be connected into a CC-Link network. CC-Link supports a maximum of 42 nodes, allowing for the Master unit and this option is based on CC-Link Ver.1.10. The CCL002Z is able to operate RUN/STOP, monitor the status of the inverter, set the inverter's parameter and etc.

[Page 8: Rj45 Connector For Options \(Cn2\)](#)

E6581422③ Behavior of LED State of LED Cause L.RUN L.ERR Normal communication is made but CRC error has occurred due to noise. Normal communication Hardware fault Hardware fault Cannot answer due to CRC error of receive data. Data sent to the host station does not reach destination. Hardware fault Hardware fault (It is an unstable state by disconnection, etc.) Polling response is made but refresh receive is error in CRC.

[Page 9: Installing The Ccl002Z](#)

E6581422③ 3. Installing the CCL002Z Install the CC-Link communication option to VF-S11 as follows. (1) Turn off the input power of VF-S11 and wait for at least 10 minutes and then check that the CHARGE lamp on VF-S11 is no longer lit. (2) Open the VF-S11 front cover, remove the terminal board fixing screw and take off the VF-S11 standard terminal board.

[Page 10](#) E6581422③ VF-S11 unit (Over 5.5kW) Terminal board fixing screw (M3 screw tightening torque: 0.7 to 0.8Nm) Cabling label position Board fixing screw hole Board catching pin Example Type form label(attached) Stick the CCL002Z type form label like bellow figure. CCL002Z VF-S11 nameplate CC-Link terminal label(attached) Stick the label to the CC-Link terminal.

[Page 11: Description Of Terminals](#)

E6581422③ 3.1. Description of terminals <Control terminals specification> Terminal Input/ Electrical Function Symbol Output specifications This terminal is Multifunction programmable contact input. Shorting across F-CC causes forward rotation; open causes deceleration stop. (Across ST-CC is short state.) Voltage free contact Input input.

[Page 12: Connection Of Control Terminals](#)

E6581422③ 3.2. Connection of control terminals Observe the following when wiring. ▼ Keep the control signal cables 20cm or more separate from the power cables to prevent malfunctioning due to electromagnetic noise. ▼ Use 0.14 to 1.5mm solid/stranded wire (AWG 28 to 16) for control cables. *Provide an inter-lock system stated in below, when using a programmable controller that has the open collector output.

[Page 13: Wiring / Connection With The Cc-Link Master](#)

E6581422③ Fix the communication cables after wiring. If take care of the wire end, use below parts. Manufacture : Phoenix contact corp. Part Number : AI 0,5-8 WH (connect one wire) Part Number : AI-TWIN2x0,5-8 WH (connect two wires) Length : 8mm 3.4.

[Page 14: Functions](#)

1-100s 0805 f805 Communication waiting time 0.00 - 0.00-2.00s 0829 f829 Selection of communication protocol 0: TOSHIBA inverter protocol (*2) 1: Modbus RTU protocol 0870 f870 Block write data 1 0: No selection (*2) 1: Command 1 2: Command 2...

[Page 15](#) E6581422③ 0871 f871 Block write data 2 Ditto (*2) 0875 f875 Block read data 1 0: No selection (*2) 1: Status information 2: Output frequency 3: Output current 4: Output voltage 5: Alarm information 6: PID feedback value 7: Input terminal board monitor 8: Output terminal board monitor 9: VIA terminal board monitor 10: VIB terminal board monitor...

[Page 16: Basic Functions](#)

E6581422③ 4.2. Basic functions This clause shows the basic function of this CC-Link option using by CC-Link communication. 4.2.1. Run and frequency operation command The PLC program can operate the inverter to run, stop, set the operation frequency and change the parameters. If the PLC controls these operations, select the command mode and the frequency setting mode.

[Page 17: Disconnection Error Of Network Cable](#)

E6581422③ 4.2.4. Disconnection error of network cable Disconnection of a CC-Link network cable, operation at the time of the abnormalities in communication, detection, etc. are set up with the following parameter of the VF-S11. f892: [Inverter operation at disconnection] Default: 0 0: Inverter stop, communication command, frequency mode open 1: None (continued operation) 2: Deceleration stop...

[Page 18: List Of Cc-Link Data](#)

E6581422③ 5. List of CC-Link data This option occupies one station area of the buffer memory of the PLC. 5.1. RX(Monitor), RY(Instruction) List of remote I/O Inverter (Slave) PLC (Master) PLC (Master) Inverter (Slave) -> -> Device No. Signal Device No. Signal RXn0 Forward running...

[Page 19: Rwr, Rww Resistor](#)

E6581422③ 5.2. RWr, RWw resistor RWr . RWw (Default value = 0) Inverter → PLC (RWr) PLC → Inverter (RWw) Address Contents Address Contents RWr n First monitor value RWw n Monitor code (first and second) RWr n+1 Second monitor value (output frequency) RWw n+1 Set frequency RWr n+2 Reply code RWw n+2 Instruction code...

[Page 20: Instruction Codes](#)

E6581422③ 5.4. Instruction Codes Code No. Contents Description Command mode selection read 0 : Terminal board 1003H 1 : Operation panel Command mode selection write 2003H Built-in potentiometer Frequency setting mode 1004H selection read 2 : VIB 3 : Operation panel 4 : Serial communication Frequency setting mode 2004H...

[Page 21: Cc-Link Local/Remote Operation](#)

E6581422③ 6. CC-Link local/Remote Operation The example below shows how to configure the VF-S11 for local/remote operation. F terminal....Operating command R terminalCC-Link local/remote (Terminal in this example) switching VIA terminal....Operation frequency command <Wiring> VF-S11 Variable resistor for adjustment: 1/4W-4.7k ohm 10k ohm Frequency setting (Variable resistor: 1 to 10k ohm)

[Page 22: Specifications](#)

4) Damage due to the use of CC-Link communication option for non-intended purposes. 4.
Unless a service contract is signed beforehand between the customer and Toshiba, in witch case the service contract has priority over this warranty.

This manual is also suitable for:

[Cc-link ccl002z](#)