



Toshiba DeviceNet DEV003Z-1 Function Manual

For tosvert vf-mb1/s15 converter

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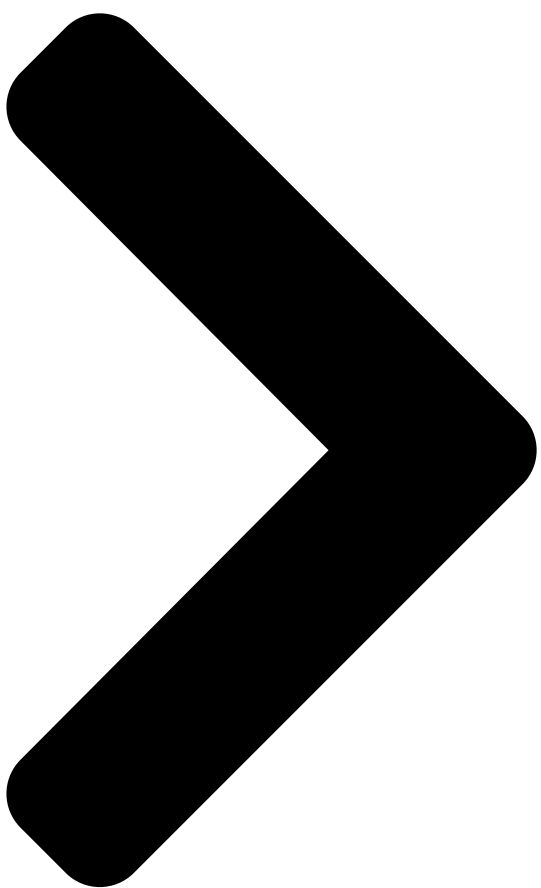
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1. Read this manual before installing or operating. Keep this instruction manual on hand of the end user, and make use of this manual in maintenance and inspection.
2. All information contained in this manual will be changed without notice. Please contact your Toshiba distributor to confirm the latest information.

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TOSVERT VF-MB1/S15

Option Function Manual

DEV003Z-1

NOTICE

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E6581737□

TOSVERT VF-MB1/S15

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Related Manuals for Toshiba DeviceNet DEV003Z-1

[Network Card Toshiba DEV002Z Installation And Operation Manual](#)

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[Network Card Toshiba Bluetooth Module Installation Manual](#)

(38 pages)

[Network Card Toshiba RemoteEye II User Manual](#)

(137 pages)

[Network Card Toshiba PA3297U-1MPC Installation Manual](#)

Wireless lan card for tecra 9000 and portege 4000 (8 pages)

[Network Card Toshiba RemotEye 4 User Manual](#)

4 ups network card (262 pages)

[Network Card Toshiba V.90 User Manual](#)

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[Network Card Toshiba H9 ASD Installation And Operation Manual](#)

Adjustable low voltage heavy duty industrial speed drive (287 pages)

[Network Card Toshiba RemotEye III User Manual](#)

(167 pages)

[Network Card Toshiba G9 ETB006Z Instructions](#)

Toshiba option card instruction manual (1 page)

[Network Card Toshiba USB001Z Instruction Manual](#)

Usb-to-serial conversion unit (34 pages)

[Network Card Toshiba WLM-10U1 How To Use](#)

Dual band wlan adapter (2 pages)

[Network Card Toshiba ATHEROS AR5004G Update Manual](#)

Wireless network adapter software on your toshiba computer (2 pages)

[Network Card Toshiba ICC Multiprotocol Ethernet Interface ASD-G9ETH User Manual](#)

Toshiba multiprotocol ethernet interface user's manual (106 pages)

[Network Card Toshiba TOSVERT BCN001Z Function Manual](#)

Vf-ps1 series bacnet option unit (19 pages)

[Network Card Toshiba RS232C User Manual](#)

Rs232c/rs485 multi-drop adapter (8 pages)

Summary of Contents for Toshiba DeviceNet DEV003Z-1

[Page 1](#) 2. All information contained in this manual will be changed without notice. Please contact your Toshiba distributor to confirm the latest information. © Toshiba Schneider Inverter Corporation 2006...

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		3.3.	

[Page 3: Introduction](#)

SBP009Z is not at hand yet. This manual describes the supported functions for the “DEV003Z”. In conjunction with this manual, the following manuals are supplied by Toshiba, and are essential both for ensuring a safe, reliable system installation as well as for realizing the full potential of the “DEV003Z”:

[Page 4: Safety Precautions](#)

E6581737 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 VF-MB1/S15 along with this instruction manual for completely understanding the safety precautions and adhere to the contents of these manuals.

[Page 5](#) E6581737 ■ General Operation Warning ▼ Never disassemble, modify or repair. Doing so could result in electric shock, fire and injury. For repairs, call your sales Disassembly agency. prohibited ▼ Do not attach this option to any inverter other than the VF-MB1/S15. Doing so could result in electric shock or fire.

[Page 6: Notes On Use](#)

E6581737 ■ Operations Warning ▼ Do not touch switches when the hands are wet and do not try to clean the inverter with a damp cloth. Prohibited Doing so could result in electric shock. ▼ Do not pull on any cable itself. Doing so could result in damage or malfunction.

[Page 7: Connection Information](#)

E6581737 2. Connection Information 2.1. Connection Sizes Connection Instance Produced Consumed 4, 8, 12 or 18 bytes 4, 8, 12 or 18 bytes I/O Messaging 39 bytes 39 bytes Explicit Messaging - For the Polled I/O connection, if the actual consumed data size is bigger than the connection instance's consumed_connection_size attribute, the consumed data will be ignored, but the connection will otherwise produce normally.

[Page 8: Devicenet Led Indicator](#)

E6581737 2.3. DeviceNet LED indicator NS (Network status) MS (Module status) NS (Network status) This bi-color (green/red) LED indicates the status of the communication link from the DEV003Z to DeviceNet. (According to ODVA DeviceNet Specifications.) LED is: For this state: To indicate: Device is not on-line.

[Page 9: Vf-Mb1/S15 Communications-Related Parameters](#)

E6581737 2.4. VF-MB1/S15 Communications-related parameters In a network, VF-MB1/S15 (DEV003Z) serves as a DeviceNet slave device. DEV003Z configuration is set by the following parameters. Parameter Function Adjustment range Default setting DEV003Z 0 to 63 c200 MAC ID DEV003Z DEV003Z communication baud rate is set. c201 Communication 0: AUTO *...

[Page 10: Object Specifications](#)

E6581737 3. Object Specifications This section contains the object specifications for all DeviceNet objects currently supported by the “DEV003Z”. Table 1 outlines those objects covered: Class Code Object Class Page 0x01 Identity Object 0x02 Message Router Object 0x03 DeviceNet Object 0x04 Assembly Object 0x05...

[Page 11: Identity Object](#)

E6581737 3.1. Identity Object Class code 0x01. This object provides identification of and general information about the device. 3.1.1. Identity Object Class Attributes Attribute Data Access Default Name Description Type Rules Value Revision UINT Revision of this object Maximum instance number of an object Max instance UINT currently created in this class level of...

[Page 12](#) E6581737 3.1.3. Identity Object Common Services Service Supported Service Name Description of Service Code Class Instance 0x05 Reset Invokes the Reset service for the device 0x0E Get_Attribute_Single Returns the contents of the specified attribute. 0x10 Set_Attribute_Single Modifies the value of the specified attribute. 3.1.4.

[Page 13: Message Router Object](#)

E6581737 3.2. Message Router Object Class Code 0x02. The Message Router Object provides a messaging connection point through which a Client may address a service to any object class or instance residing in the physical device. 3.2.1. Message Router Object Class Attributes Attribute Data Access...

[Page 14: Devicenet Object](#)

E6581737 3.3. DeviceNet Object Class Code 0x03. The DeviceNet Object provides for the configuration and status of a DeviceNet port. 3.3.1. DeviceNet Object Class Attributes Attribute Data Access Default Name Description Type Rules Value Revision UINT Revision of this object. Maximum instance number of an object Max instance UINT...

[Page 15: Assembly Object](#)

E6581737 3.4. Assembly Object Class code 0x04. The Assembly Object binds attributes of multiple objects, which allows data to or from each object to be sent or received over a single connection. 3.4.1. Assembly Object Class Attributes Attribute Data Access Default Name Description...

[Page 16](#) E6581737 3.4.5. Assembly Instance Details 3.4.5.1. Instance 20/70 - DeviceNet Standard (4 bytes, parameter = 0) c203 Byte Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 Fault reset forward Drive Reference Speed min (Low byte) * Drive Reference Speed min (High byte) *...

[Page 17](#) E6581737 3.4.5.2. Instance 21/71 - DeviceNet Standard (4 bytes, parameter = 1) c203 Byte Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 Net Ref * Net Ctrl * Fault reset reverse forward Drive Reference Speed min (Low byte) Drive Reference Speed min...

[Page 18](#) E6581737 Examples of Instance 21/71 □ Stop Instance Byte 15 14 13 12 11 10 9 Hex. 1, 0 0x0000 Output Instance 21 3, 2 1, 0 0x0310 Input Instance 71 3, 2 0x0000 □ Forward running 1800min Instance Byte 15 14 13 12 11 10 9 Hex.

[Page 19](#) E6581737 3.4.5.3. Instance 100/150 - Toshiba Specific (4 bytes, parameter = 2) c203 Byte Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 ACC1/ Preset Preset Preset Preset DC braking PI off THR2...

[Page 20](#) E6581737 Examples of Instance 100/150 □ Stop Instance Byte 15 14 13 12 11 10 9 Hex. 1, 0 0x0000 Output Instance 100 3, 2 1, 0 0x4800 Input Instance 150 3, 2 0x0000 □ Forward running 60Hz Instance Byte 15 14 13 12 11 10 9 Hex.

[Page 21](#) E6581737 3.4.5.4. Instance 101/151 - Toshiba Specific (8 bytes, parameter = 3) c203 Byte Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 Net Ref * Net Ctrl * Fault reset reverse forward...

[Page 22](#) E6581737 Examples of Instance 101/151 Access the inverter parameter is enabled using byte 4 to 7 of this Instance. Set the communication number of the parameter to byte 4, 5 (Index), and the value to byte 6, 7 (Data). □ Read the parameter (Command mode selection, communication number is 0003).

[Page 23](#) E6581737 3.4.5.5. Instance 102/152 - Toshiba Specific (12 bytes, parameter = 4) c203 Byte Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 Command data (Low byte) c001 Command data (High byte) c001...

[Page 24](#) E6581737 3.4.5.6. Instance 105/155 - Toshiba Specific (18 bytes, parameter = 5) c203 Byte Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 Read/Write command Index (Low byte) Index (High byte) Data (Low byte)

[Page 25](#) E6581737 Examples of Instance 105/155 Access the inverter parameter is enabled using byte 1 to 5 of this Instance. Set the communication number of the parameter to byte 2, 3 (Index), and the value to byte 4, 5 (Data). □ Read the parameter (Command mode selection, communication number is 0003).

[Page 26](#) E6581737 3.4.5.7. How to use Instance 102/152, 105/155 The purposes of instances 102/152 (Byte 0 - 11) and 105/155 (Byte 6 - 17) are adjustment by real time command

transmission, and the monitor of an operation state by using cyclic communication of DeviceNet. Example 1: Command transmitting by the output Instance 102.

[Page 27](#) E6581737 setup value setup value c001 c006 c021 c026 0: No action 0: No action 1: fa06 (Communication command 1) 1: fd01 (Status information 1) 2: fa23 (Communication command 2) 2: fd00 (Output frequency, 0.01Hz) 3: fa07 (Frequency command, 0.01Hz) 3: fd03 (Output current, 0.01%) 5: fa50 (Terminal output data) 4: fd05 (Output voltage, 0.01%)

[Page 28](#) E6581737 3.4.6. The outline of the parameter setup value c001 c006 c021 c026 The outline is indicated about the setting item of parameter in Instance c001 c006 c021 c026 102/152 and 105/155 of use. Please refer to a communication functional description (E6581726/E6581913) for details. 3.4.6.1.

[Page 29](#) E6581737 3.4.6.2. fa23 (Communication command 2) Function Note (Reserved) Electric power quantity Electric power quantity (fe76, Reset reset fe77) reset (Reserved) (Reserved) (Reserved) (Reserved) Maximum deceleration Normal Enabled forced stop Select acceleration/deceleration Acceleration/decele- 00: Acceleration/deceleration 1 1-4 by combination of two bits.. ration selection 1 01: Acceleration/deceleration 2 AD1: acc, dec...

[Page 30](#) E6581737 3.4.6.6. fd01 (Inverter operating status 1 (real time)) Function Note Under in Failure FL No output progress Trip status includes retry and Failure Not tripped Tripped the trip retention status are also regarded as tripped statuses. Alarm No alarm Alarm issued Under voltage (moff) Normal...

[Page 31](#) E6581737 3.4.6.8. fd03 (Output current (real time)) The output current is read into 0.01% of units and by the hexadecimal number. For example, when the output current of the rated current 4.8A drive is 50% (2.4A), 0x1388 (hexadecimal number) is read out. Since the minimum unit is 0.01%, 0x1388 (Hex.) = 5000 (Dec.) * 0.01 = 50 (%) Also about the following parameters, these are the same as this.

[Page 32](#) E6581737 3.4.6.12. fc91 (Alarm code) Remarks Function (Code displayed on the panel) Over-current alarm Normal Alarming c flicking Inverter over load alarm Normal Alarming l flicking Motor over load alarm Normal Alarming l flicking Over heat alarm Normal Alarming h flicking Over voltage alarm Normal Alarming...

[Page 33: Connection Object](#)

E6581737 3.5. Connection Object Class code 0x05. The Connection Class allocates and manages the internal resources associated with both I/O and Explicit Messaging Connections. 3.5.1. Connection Object Attributes Attribute Data Access Default Name Description Type Rules Value Revision UINT Revision of this object. Maximum instance number of an object Max instance UINT...

[Page 34](#) E6581737 3.5.2.1. Explicit Messaging Connection Object Instance Attributes (Instance 1) Attribute Data Access Default Name Description Type Rules Value State of the object 00 = Non-existent 01 = Configuring State USINT 02 = Waiting for connection ID 03 = Established 04 = Timed Out 05 = Deferred Delete Instance_type...

[Page 35](#) E6581737 3.5.2.3. Poll Connection Object Instance Attributes (Instance 2) Attribute Data Access Default Name Description Type Rules Value State of the object 00 = Non-existent 01 = Configuring State USINT 02 = Waiting for connection ID 03 = Established 04 = Timed Out 05 = Deferred Delete Instance_type USINT...

[Page 36](#) E6581737 3.5.2.5. Connection Object Instance Attributes (Instance 4) COS/Cyclic Attribute Data Access Default Name Description Type Rules Value State of the object 00 = Non-existent 01 = Configuring State USINT 02 = Waiting for connection ID 03 = Established 04 = Timed Out 05 = Deferred Delete Instance_type USINT...

[Page 37: Motor Data Object](#)

E6581737 3.6. Motor Data Object Class code 0x28. This object serves as a database for motor parameters. 3.6.1. Motor Data Object Class Attributes Attribute Data Access Default Name Description Type Rules Value Revision UINT Revision of this object Maximum instance number of an object Max instance UINT currently created in this class level of...

[Page 38: Control Supervisor Object](#)

E6581737 3.7. Control Supervisor Object Class code 0x29. This object models all the management functions for devices within the DeviceNet "Hierarchy of Motor Control Devices". The behavior of motor control devices is described by the State Transition Diagram. 3.7.1. Control Supervisor Object Class Attributes Attribute Data Access...

[Page 39](#) E6581737 3.7.2. Control Supervisor Object Instance Attributes Attribute Data Access Default Name Description Type Rules Value Number of Attributes USINT Number of Attributes supported USINT Attribute List List of attributes supported (ARRAY) See Run/Stop Event Matrix Run 1 BOOL Get/Set 00 = Stop 01 = Run See Run/Stop Event Matrix...

[Page 40](#) E6581737 3.7.3. Control Supervisor Object Common Services Supported Service Service Name Description of Service Code Class Instance 0x05 Reset Used to reset all resettable connection objects. 0x0E Get_Attribute_Single Returns the contents of the specified attribute. 0x10 Set_Attribute_Single Modifies the value of the specified attribute. 3.7.4.

[Page 41: Ac/Dc Drive Object](#)

E6581737 3.8. AC/DC Drive Object Class code 0x2A. This object models the functions specific to an AC or DC Drive. e.g. speed ramp, torque control etc. 3.8.1. AC/DC Drive Object Class Attributes Attribute Data Access Default Name Description Type Rules Value Revision UINT...

[Page 42](#) E6581737 3.8.2. AC/DC Drive Object Instance Attributes Attribute Data Access Default Name Description Type Rules Value Number of Attributes USINT Number of Attributes supported USINT Attribute List List of Attributes supported (ARRAY) 1 = Drive actual at reference (speed or At Reference BOOL torque reference) based on mode...

[Page 43: Acknowledge Handler Object](#)

E6581737 3.9. Acknowledge Handler Object Class code 0x2B. This object is used to manage the reception of message acknowledgements. This object communicates with a message producing Application Object within a device. 3.9.1. Acknowledge Handler Object Class Attributes Attribute Data Access Default Name Description...

[Page 44: Parameter Object \(Vender Specific Profiles\)](#)

E6581737 3.10. Parameter Object (Vender Specific Profiles) Class code 0x65. This object provides VF-MB1/S15's parameter access. Drive parameter's Attribute ID is 3, VF-MB1/S15's parameter is set as Instance ID. For example, in case of set 5 sec. to "Acc. time", the minimum unit of "Acc. time" is 0.1 sec., the set vlaue is $5 / 0.1 = 50 = 0x0032$ (Hex.) And the communication number of "Acc.

[Page 45: Devicenet Local/Remote Operation](#)

Even if access to each parameter of VF-MB1 or VF-S15 uses a configuration tool and an EDS file, it is possible. As for acquisition of an EDS file, please contact your Toshiba distributor. Please use what was in agreement with the software version of usage's VF-MB1 or VF-S15.