Toshiba PDP002Z Function Manual

Profibus-dp option

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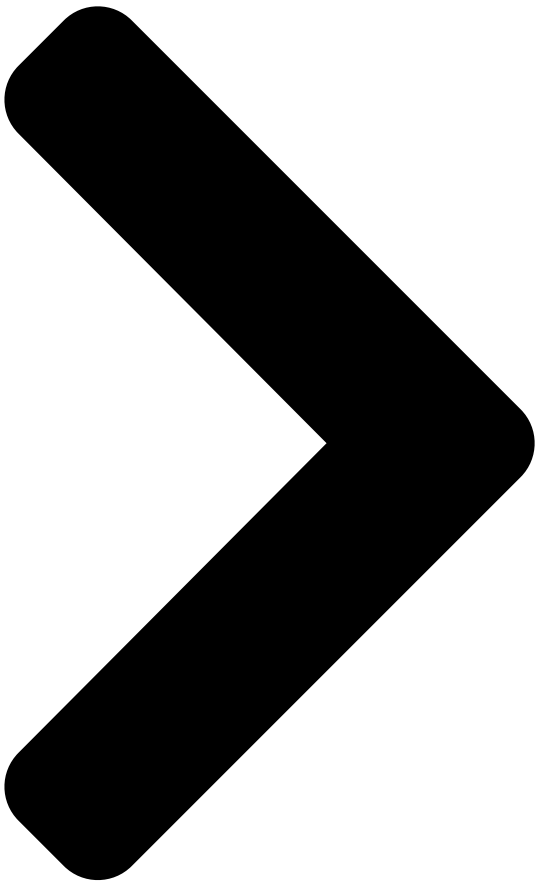
Bookmarks



E6581348 (0)

TOSHIBA

TOSVERT VF-AS1/PS1

PROFIBUS-DP Option Function Manual

PDP002Z

* The data given in this manual are subject to change without notice.

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Related Manuals for Toshiba PDP002Z

Inverter Toshiba TOSVERT VF-AS1 Instruction Manual

High-performance inverter (328 pages)

Inverter Toshiba TOSVERT VF-PS1 Instruction Manual

Variable torque inverter (317 pages)

Inverter TOSHIBA TOSVERT VF-AS1 Instruction Manual

The new high-performance inverter tosvert (313 pages)

Inverter Toshiba VF-PS1 Instruction Manual

Variable torque inverter (307 pages)

Inverter Toshiba VF-PS1 Instruction Manual

Totally enclosed box type inverter (52 pages)

Inverter Toshiba TOSVERT VF-AS1 Series Function Manual

Ethernet/ip option unit (49 pages)

Inverter Toshiba TOSVERT VF-AS1 Function Manual

(33 pages)

Inverter Toshiba TOSVERT VF-AS1 Instruction Manual

Pg feedback board (27 pages)

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Cc-link ccl001z1 (22 pages)

Inverter Toshiba DEV002Z Instruction Manual

Devicenet option (20 pages)

Inverter Toshiba BACnet BCN001Z Function Manual

(19 pages)

Inverter Toshiba TOSVERT VF-AS1 Instruction Manual

Heatsink outside mounting kit (14 pages)

Controller Toshiba TOSVERT VF-AS1 Instruction Manual

Torque control (13 pages)

Power Supply Toshiba TOSVERT VF-AS1 Installation Manual

Conduit box kit option (13 pages)

Inverter Toshiba TOSVERT VF-AS1 Instruction Manual

Light-load high-speed operation (11 pages)

Inverter Toshiba TOSVERT VF-AS1 Manual

Current and speed control gain adjustment method (7 pages)

Summary of Contents for Toshiba PDP002Z

Page 1 E6581343 ③ TOSVERT VF-AS1/PS1 PROFIBUS-DP Option Function Manual PDP002Z * The data given in this manual are subject to change without notice. © Toshiba Schneider Inverter Corporation 2006 All rights reserved.

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Page 3: Introduction

This manual describes the supported functions for the “PDP002Z”. In conjunction with this manual, the following manuals are supplied by Toshiba, and they are essential both for ensuring a safe, reliable system installation as well as for realizing the full potential of the “PDP002Z”:...

Page 4: Connection Information

2. Connection Information This option allows the VF-AS1/PS1 inverter to be communicated with the cyclic command transmission and monitoring of the original profile ("USER DEFIND", refer to page 19) of our company other than application profile "Profile for Variable Speed Drives PROFIdrive (3.072), refer to page 8"...

Page 5: Pdp002Z Device Data

2.2. PDP002Z Device Data Parameter Vendor_Name Model_Name Revision Ident_Number Protocol_Ident Station_Type FMS_supp Hardware_Release Software_Release 9.6_supp 19.2_supp 45.45_supp 93.75_supp 187.5_supp 500_supp 1.5M_supp 3M_supp 6M_supp 12M_supp MaxTsdr_9.6 MaxTsdr_19.2 MaxTsdr_45.45 MaxTsdr_93.75 MaxTsdr_187.5 MaxTsdr_500 MaxTsdr_1.5M MaxTsdr_3M MaxTsdr_6M MaxTsdr_12M Redundancy Repeater_Ctrl_Sig 24V_Pins Freeze_Mode_supp Sync_Mode_supp Set_Slave_Add_Supp...

Page 6: Setting A Station Address

2.3. Setting a station address The DIP switch on the circuit board of the option is used to set a station address. Each DIP switch is ON when it is flipped to the lower position. By default, it is factory-configured to 2. The station address must be unique and not match any other device on the network.

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OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF...

Page 8: Status Indicator

* When the parameters are changed, the power must be cycled to the VF-AS1/PS1 for the changes to take effect. ** The baud rate of the PDP002Z is automatically set by configuration a baud rate for the master. Meanings...

Page 9: Profidrive" Profile

3. “PROFIdrive” Profile 3.1. PPO TYPE The PPO type of PDP002Z is set up by this parameter. The PROFIBUS-DP protocol uses so-called PPOs (Parameter/Process Data Objects) in cyclic communication. The figures below show the PPO types and configurations that the PDP002Z supports .

Page 10: Stw Control Word Data

3.2. STW Control Word Data PDP002Z supports only speed control mode. Bit Value Operating condition Operating condition Operation condition Inhibit ramp-function Enable ramp-function Stop ramp-function ---- Device-specification Name Drive can be started if all other start conditions are fulfilled. OFF 1 Normal stop.

Page 11: Zsw Status Word Data

3.3. ZSW Status Word Data Valur ---- ---- ---- ---- ---- *Bit 11 - 15 are the ON/OFF status monitor of each terminals. Name Ready to switch-on Control word bit 0 = 0 and bit1, 2, 10 are set to 1. Control word bit 0 = 0, 1, 2 or 10 are set to 0, Not ready switch-on or the inverter is tripped.

Page 12: State Macine

3.4. State Macine MAINS OFF Power ON CW: Bit3 = 0 SW: Bit2 = 0 OPERATION INHIBIT Operation inhibited from any state CW: Bit0 = 0 OFF1 SW: Bit1 = 0 ACTIVE Normal Stop Frequency = 0 CW: Control Word ST: Status Word : Status SW: Bit6 = 1...

Page 13: Examples Of Driving By The State Machine

3.4.1. Examples of driving by the State Machine When using the PROFIdrive profile, the frequency reference is set to HSW. The setting value “0x0000” - ”0x4000” is equivalent to ”0” - ”Base frequency (parameter vl)”. When the reverse operation, the frequency reference is set

with two's complement of the forward frequency reference.

Page 14: The Access To The Profibus Parameter

(Parameter ID/value) Octet 1 Octet 2 Octet 3 Octet 4 Octet 5 Octet 6 Octet 7 Octet 8 PKE (Parameter ID) (Task ID/Response ID) AK (Request from Master to PDP002Z Request ID AK (Response from PDP002Z to Master) Response ID SPM: always 0.

Page 15 5 = 187.5 kbit/s 6 = 93.75 kbit/s 7 = 45.45 kbit/s 19.2 kbit/s 9.6 kbit/s 255 = Invalid baud rate Identification number of the PDP002Z (0x093C) Profile number of the PDP002Z (0x0302) Control word Status word - 14 -...

Page 16: Examples Of Reading Or Changing The Profidrive Parameter

3.5.1. Examples of reading or changing the PROFIdrive parameter 3.5.1.1. Example 1. Reading the PNU 964 (ID number) AK = 1 (Request parameter value) SPM = 0 PNU = 964 (0x03C4) Requirement Response (Value: 0x093C) 3.5.1.2. Example 2. Reading the PNU 947, IND (Fault history) AK = 6 (Request parameter value (array)) SPM = 0 PNU = 947 (0x03B3)

Page 17 3.5.1.3. Example 2. Changing the PNU 933 (Control word, bit 11) AK = 2 (Change parameter value (word)) SPM = 0 PNU = 933 (0x03A5) PWE = 10 (0x000A) Requirement (PNU 933 = 10 (f111 = 10)) Response (Value: 0x000D = Inverter over load) Example of the error occurrence Requirement (PNU 933 = 136 (out of the value range)) Response (Value: 0x0002 = Lower or upper limit violated)

Page 18: Access To The Vf-As1/Ps1 Parameter

3.6. Access to the VF-AS1/PS1 parameter When access to the VF-AS1/PS1 parameter, set “1” to the PNU. The communication number of the inverter parameter is set to the subindex IND. Refer to the inverter instruction manual about the communication number and unit. 3.6.1.

Page 19 3.6.1.3. Example 3. Reading the status monitor parameter (fe02 (The operation frequency)) AK = 6 (Request parameter value (array)) SPM = 0 PNU = 1 IND = 0xFE02(fe02 communication number) Requirement Response (Value: 0x03E8 (= 1000 -> 10.00Hz)) * The status monitor parameter can not be changed. 3.6.1.4.

Page 20: User Defind" Profile

4. ”USER DEFIND” Profile Cyclic command transmission (the value of the parameter f831 - f836) and monitoring (the value of the parameter f841 - f846) are possible for PDP002Z by the original profile Select the ”USER DEFIND” as the profile on the configuration.

Page 21: How To Use

The value of the parameter fd03 specified as 0 and1 byte of the PZD1 with the parameter f841 is inputted. VF-AS1/PS1 Parameter Value f841 3 (FD03) f842 f843 The value of a parameter fd03 is outputted. PDP002Z PZD1 PDP002Z PZD1 - 20 - PROFIBUS Master PZD2 PZD3 PROFIBUS Master PZD2...

Page 22: The Overview Of The Vf-As1/Ps1 Parameter

4.2. The overview of the VF-AS1/PS1 parameter Refer to a communication functional description (VF-AS1: E6581315/VF-PS1: E6581413) for details. 4.2.1. FA06 (Command word 1 from internal option PCB) Function Preset Speed1 Preset Speed2 Preset Speed3 Preset Speed4 THR1/2 PI off ACC1/ACC2 DC braking Forward/Reverse Run/stop...

Page 23: Fa07 (Frequency Reference From Internal Option Pcb)

4.2.3. FA07 (Frequency reference from internal option PCB) Frequency reference is set up by 0.01Hz unit and the hexadecimal number. For example, when "Frequency reference" is set up to 80Hz, since the minimum unit is 0.01Hz, 80 / 0.01 = 8000 = 0x1F40 (Hex.) 4.2.4.

Page 24: Fd01 (Inverter Status (Real Time))

4.2.8. FD01 (Inverter status (real time)) Function ALARM (Reserved) tHr2(VF2+tH2) ACC1/ACC2 DC braking Forward /Reverse Run/stop Free run (ST) Emergency stop READY with ST/ RUN READY without ST/RUN 15** Local/Remote * Ready for operation: Initialization completed, not a stop due to a failure, no alarm issued, not moff, not a forced stop due to ll, not a forced stop due

to a momentary power failure.

Page 25: Fe36 (Analog Input Value Vi/Ii)

4.2.11. FE36 (Analog input value VI/II) The value inputted into the VI/II terminal is read. The value range is 0 - 10000 (0 - 100.00 %). Also the same as the parameter FE35 (RR Input). 4.2.12. FE37 (RX Input) The value inputted into the RX terminal is read. The value range is -10000 - 10000 (-100.00 - +100.00 %).

Page 26: Fc91 (Alarm Code)

4.2.16. FC91 (Alarm code) Function Over current alarm Inverter over load alarm Motor over load alarm Over heat alarm Over voltage alarm Under voltage of main power (Reserved) Under current alarm Over torque alarm OLr alarm Cumulative run-time alarm (Reserved) (Reserved) (Reserved) Stop after instantaneous power off...

Page 27: Fc90, Fe10 - Fe13 (Inverter Fault)

4.2.19. FC90, FE10 - FE13 (Inverter fault) Data Data (hexa- (decimal) decimal) Code No error nerr Over-current during acceleration Over-current during deceleration Over-current during constant speed operation Over-current in load at startup U-phase arm over-current oca1 V-phase arm over-current oca2 W-phase arm over-current oca3 Input phase failure...

Page 28: About Gsd File

E6581343 ③ 4.3. About GSD file As for acquisition of an GSD file, it is possible to download from homepage of our company. Please use what was in agreement with the software version of usage's VF-AS1/PS1. VF-AS1: http://www.inverter.co.jp/product/inv/vfas1/pdp/ VF-PS1: http://www.inverter.co.jp/product/inv/vfps1/pdp/ - 27E - - 27 -...

This manual is also suitable for:

Tosvert vf-as1Tosvert vf-ps1