



Toshiba Tosvert VF-S15 Series Instruction Manual

Rs485 communication function

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E6581913

TOSHIBA TOSVFH15 Series

RS485 Communication Function

Instruction Manual

NOTICE

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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[Inverter Toshiba Tosvert VF-S15 Instruction Manual](#)

Industrial inverter (for 3-phase induction motors) (371 pages)

[Inverter Toshiba VF-S15 Instruction Manual](#)

For 3-phase induction motors (360 pages)

[Inverter Toshiba VF-S15 Instruction Manual](#)

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Summary of Contents for Toshiba Tosvert VF-S15 Series

[Page 1: Rs485 Communication Function](#)

2. All information contained in this manual will be changed without notice. Please contact your Toshiba distributor to confirm the latest information. Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com...

[Page 2](#) "Commands" please refer to the "9.Parameter data") Mandatory When using the Toshiba inverter protocol and the data does not need to be records, action use P command (the

data is written only to RAM). □ About the handling of the inverter, please follow the Inverter's instruction manual.

[Page 3: Table Of Contents](#)

General outlines of the communication function3 Data transmission specifications.....4 Communication protocol 5 3.1. About the handling of received frames5 Toshiba inverter protocol6 4.1. Data transmission format.....7 4.1.1. Data transmission format used in ASCII mode7 4.1.2.

[Page 4: General Outlines Of The Communication Function](#)

This manual explains the RS485 communications interface function provided for the TOSVERT VF-S15 series of industrial inverters. The TOSVERT VF-S15 series of inverters can be connected to a computer or a controller (herein- after referred to as the computer) for data communications via USB converter (USB001Z).

[Page 5: Data Transmission Specifications](#)

Communication baud rate 9600/19200*/38400 bps (selectable using a parameter)
Communication protocol Toshiba inverter protocol * / Modbus RTU protocol (selectable using a parameter) Character transmission <ASCII mode> JIS X 0201 8-bit (ASCII) <Binary mode, Modbus RTU> Binary codes fixed to 8 bits...

[Page 6: Communication Protocol](#)

E6581913 3. Communication protocol VF-S15 supports the Toshiba inverter protocol and a part of Modbus RTU protocol. Select the desired protocol from in the following communication protocol selection parameters (f829). "Parameter Name f829, Communication Number. 0829" Data Range: 0, 1 (Initial value: 0)

[Page 7: Toshiba Inverter Protocol](#)

E6581913 4. Toshiba inverter protocol Select "TOSHIBA" (f829=0) in the communication protocol selection parameters. "TOSHIBA" (f829=0) is set for initial communication protocol selection of shipment setting. (See "3. Communication protocol".) □ Exchange of data between the computer and the inverter...

[Page 8: Data Transmission Format](#)

E6581913 4.1. Data transmission format 4.1.1. Data transmission format used in ASCII mode A communication number is used to specify a data item, all data is written in hexadecimal, and JIS-X-0201 (ASCII (ANSI))-compliant transmission characters are used. □ Computer □ Inverter Omissible in one-to-one communication For the W and P commands only Omissible...

[Page 9](#) E6581913 □ Inverter □ computer At time of broadcast communication, returning of data is not executed, except for the inverters to be returned, when the inverter number is not matched, and the inverter number has only one character. This is because there will be a risk of that the returned data may be deformed. □...

[Page 10](#) E6581913 □ Data returned when data is not processed normally (ASCII mode) In case an error occurs, communication error command (4EH(N) or 6EH(n)) and the error type number is returned to the computer in addition to the checksum. At time of broadcast communication of the binary mode, returning of data is not executed except for the inverter to be returned (in- verter number 00H) and when the inverter number is not matched.

[Page 11: Data Transmission Format Used In Binary Mode](#)

E6581913 4.1.2. Data transmission format used in binary mode A communication number is used to specify a data item, data is written in hexadecimal form, and data in transmission characters are represented by binary codes (HEX codes). □ Computer □ Inverter (binary mode) Omissible in one-to-one communication No data for the 52H (R) command (3.5bytes...

[Page 12](#) E6581913 □ Inverter □ computer (binary mode) At time of broadcast communication of the binary mode, returning of data is not executed except for the inverter to be returned (inverter number 00H) and when the inverter number is not matched. This is because there will be a risk that the returned data may be deformed.

[Page 13](#) E6581913 2) Error Processing (Binary mode) In case an error occurs, communication error command (4EH(N) or 6EH(n)) and the error type number is returned to the computer in addition to the checksum. At time of broadcast communication of the binary mode, returning of data is not executed except for the inverter to be returned (inverter number 00H) and when the inverter number is not matched.

[Page 14: Transmission Format Of Block Communication](#)

E6581913 4.1.3. Transmission format of Block Communication What is block communication? Data can be written in and read from several data groups set in one communication by setting the type of data desired for communication in the block communication parameters (f870, f871, f875 to f879) in advance.

[Page 15](#) E6581913 □ Block Write 1, 2 Select data, which is desired to be written in block communication, in block write Data 1 and 2 Parameters (f870, f871). This parameter becomes effective when the system is reset, such as when power is turned off. When the setting is completed, turn off and then on the power. Block write data For data details, see: No selection...

[Page 16](#) E6581913 □ Inverter → Computer At time of broadcast communication of the binary mode, returning of data is not executed except for the inverter to be returned (inverter number 00H) and when the inverter number is not matched. This is because there will be a risk that the returned data may be deformed. 1) Normal processing Omissible Number of read data groups x 2 bytes...

[Page 17](#) E6581913 2) Error Processing (Binary mode) In case an error occurs, communication error command (4EH(N) or 6EH(n)) and the error type number is returned to the computer in addition to the checksum. Omissible (3.5bytes "/" INV-NO Norn DATA (3.5bytes Blank) (2FH) 1 byte (4EH)(6EH)

[Page 18: Commands](#)

□ Do not write the same parameter to the EEPROM more than 10,000 times. The life time of EEPROM is approximately 10,000 times. (Some parameters are not limited, please refer to the "9. Parameter data") The lifetime of EEPROM is approximately 10,000 times. When using the Toshiba inverter protocol and Mandatory the data does not need to be records, use P command (the data is written only to RAM).

[Page 19](#) E6581913 □ P (50 (RAM write) This command is used to rewrite data into the parameter specified using a communication number. It writes data into the RAM only. It cannot be used to write data into any read-only parameters. Each time an attempt to write data is made the inverter checks whether the data falls within the specified range.

[Page 20](#) E6581913 When Command "s" (lowercase letter) is received, the slave side judges that the master side is tripped and operates in accordance with the inter-drive communication parameter (□□□□). For detail, see "7. Communication parameters". - Examples: 50% frequency command (If maximum frequency = Frequency for operation at 80Hz = 40Hz: 50% = 5000d = 1388H) <Binary mode>...

[Page 21: Transmission Errors](#)

E6581913 4.3. Transmission errors □ Table of error codes Error name Description Error code Impossible to execute - The command is impossible to execute, though communication was established normally. 1 Writing data into a parameter whose setting cannot be changed during operation (e.g., maximum frequency) 2 Writing data into a parameter while "init"...

[Page 22: Broadcast Communication Function](#)

E6581913 4.4. Broadcast communication function Broadcast communication function can transmit the command (write the data) to multiple inverters by one communication. Only the write (W, P) command is valid and the read (R, G) command is invalid. The inverters subject to the broadcast communication are the same to the independent communication;...

[Page 23](#) E6581913 Host computer Block 2 Block 1 Inverter No.20 Inverter No.21 Inverter No.29 Inverter No. 10 Inverter No.11 Inverter No.19 Inverter Inverter Inverter Inverter Inverter Inverter *1: Error signal I/F In broadcast communication, only the representative inverter in each block returns data to the computer.

[Page 24: Examples Of The Use Of Communication Commands](#)

E6581913 4.5. Examples of the use of communication commands Here are some examples of the use of communication commands provided for the VF-S15 series of inverters. Inverter numbers and checksum used in ASCII mode are omitted from these examples. □ Examples of communication - To run the motor in forward direction with the frequency set to 60 Hz from the computer <ASCII mode>...

[Page 25: Modbus Rtu Protocol](#)

□ Parameter Setting □ Protocol selection (f829) Select "Modbus RTU (f829 = 1) in the communication selection parameters. "TOSHIBA" (f829=0) is set for communication protocol selection in initial shipment setting. (See "3. Communication protocol".) □ Inverter number (f802 Inverter numbers.

[Page 26: Modbus Rtu Transmission Format](#)

E6581913 5.1. Modbus RTU transmission format Modbus RTU sends and receives binary data without a frame-synchronizing start code and defines the blank time to recognize the start of a frame. Modbus RTU decides the data that is first received subsequently as the first byte of a frame after a blank time for 3.5 bytes at the on-going communication speed.

[Page 27: Read Command \(03H\)](#)

E6581913 5.1.1. Read command (03H) □ Computer → Inverter *The text size is 8 bytes fixed. Communication No. Number of Data CRC16 Inverter Command high high high 1) Inverter No. (1 byte) : --- 2) Command (1 byte) : Set the read command (03H fixed).

[Page 28: Block Read Command□indirect \(03H\)](#)

E6581913 5.1.2. Block Read command□Indirect (03H) Select the read data which is desired to be read in block communication to Block Communication Read Data Parameters (f875 to f879). This parameter becomes effective when the system is reset, such as when power is turned off. When the setting is completed, turn off and then on the power.

[Page 29](#) E6581913 : The data selected with f879 is read. 8) Read data 5 (2 bytes) 9) CRC16 (2 bytes) : --- □ Inverter → Computer (Abnormal return) *The text size is 5 bytes fixed. Inverter CRC16 Command Error Code high 1) Inverter No (1 byte) : --- 2) Command (1 byte)

[Page 30: Block Read Command□direct \(03H\)](#)

E6581913 5.1.3. Block Read command□Direct (03H) The data of consecutive communication number from the specified communication number is read. Eight data or less is read. When a consecutive communication number doesn't exist, the data of 8000H is sent back. □ Computer → Inverter *The text size is 8 bytes fixed. Communication Number of Data CRC16...

[Page 31](#) E6581913 □ Example: direct block read of 5 words < Parameter > f802 (Inverter number) = 1 f829 (Selection of communication protocol) = 1: Modbus RTU f130 = 4 f131 = 6 f132 = 10 f133 : nonexistent f134 : nonexistent (Computer →...

[Page 32: Write Command \(06H, 10H\)](#)

E6581913 5.1.4. Write command (06H, 10H) CAUTION □ Do not write the same parameter to the EEPROM more than 10,000 times. The life time of EEPROM is approximately 10,000 times. (Some parameters are not limited, please refer to the "9. Parameter data") Mandatory action 5.1.4.1.

[Page 33](#) E6581913 5.1.4.2. Write command (10H) □ Computer → Inverter *The text size is 11 bytes fixed. Inverter Command Communication number of word number Write Data CRC16 of byte high high high high 1) Inverter No. (1 byte) : --- 2) Command (1 byte) : Set the write command (10H fixed).

[Page 34: Block Write Command \(10H\)](#)

E6581913 5.1.5. Block Write command (10H) Select data, which is desired to be written in block communications, in Block Communication Write Data 1 and 2 Parameters (f870, f871). This parameter becomes effective when the system is reset, such as when power is turned off. When the setting is completed, turn off and then on the power.

[Page 35](#) E6581913 □ Inverter → Computer (Abnormal return) *The text size is 5 bytes fixed. Inverter CRC16 Command Error Code high 1) Inverter No (1 byte) : --- 2) Command (1 byte) : 90H fixed (Read command error) (Command + 80H) 3) Error code (1 byte) : See "5.3.

[Page 36: Block Write And Read Command \(17H\)](#)

E6581913 5.1.6. Block Write and Read command (17H) Select data, which is desired to be written in block communications, in Block Communication Write Data 1 and 2 Parameters (f870, f871). Then, Select read data, which is desired to be read in block communication, in block read data 1 and 5 Parameters (f875 to f879).

[Page 37](#) E6581913 7) Write number of byte : 0002H(fixed). 8) Write data 1(2 bytes) : Set in the order of high to low write data 1. The data is written to the specified parameter selected by f870. □ 9) Write data 2(2 bytes) : Set in the order of high to low write data 2.

[Page 38: Identification Command \(2Bh\)](#)

The total response size is variable. The three objects contained in the response correspond to the following objects: Object no.1: Manufacturer name ("TOSHIBA"). Object no.2: Device reference (ASCII string ; ex. : "VFS15-2037PM"). Note: See Appendix 3. Object no.3: Device version (4-byte ASCII string; for example: "0100" for version 100).

[Page 39](#) 4) CRC16 (2 bytes) : --- □ Example: Reading Identification Inverter No = 01H Manufacturer name = "TOSHIBA"(7 bytes) Device name = "VFS15-2037PM" (12 bytes) Device version = "0100" (4 bytes) (Computer → inverter) 01 2B 0E 01 00 70 77 (Inverter →...

[Page 40: Crc Generation](#)

E6581913 5.2. CRC Generation "CRC" is a system to check errors in communication frames during data transmission. CRC is composed of two bytes and has hexadecimal-bit binary values. CRC values are generated by the transmission side that adds CRC to messages. The receiving side regenerates CRC of received messages and compares generation results of CRC regeneration with CRC values actually received.

[Page 41: Error Codes](#)

E6581913 5.3. Error codes In case of the following errors, the return commands from the inverters are added 80h to the commands received by the inverters. The following error codes are used. Error Code Description - Command error - Function code 43 supported but MEI Type not equal to 14 - Communication number error - It tried to write to parameter with only reading.

[Page 42: Inter-Drive Communication](#)

(continue to operate, issue an alarm or trip) if a cable is broken or the master inverter is turned off during operation. * To use the inter-drive communication function, select "Toshiba inverter protocol" (□□□□=□) in the communication protocol selection parameters. "Toshiba inverter protocol" (□□□□=□) is set for communication protocol selection in Shipment setting.

[Page 43](#) E6581913 □ Setting of parameter ●Protocol selection (f829) Shipment setting: 0 (TOSHIBA) Protocol setting with all inverters (both master and slave inverters) engaged in inter-drive communication 0: Set the TOSHIBA. * Inter-drive communication are disabled when Modbus RTU protocol is selected.

[Page 44](#) (100% at FH)) f829:0 Selection of communication protocol f829:0 Selection of communication protocol (Toshiba inverter protocol) (Toshiba inverter protocol) f803:1.0 Communication time-out time (ex. 1 second) f800:4 Baud rate f800:4 Baud rate (same to the master side) (ex.

[Page 45: Speed Proportional Control](#)

E6581913 6.1. Speed proportional control Proportional control of frequency can be performed in two ways: control by selecting frequency points and control by adjusting the ratio to the maximum frequency. This section explains proportional control of inverters by means of a master inverter (inter-drive communication), although the VF-S15 series inverters are ready for proportional control by means of the "S"...

[Page 46](#) E6581913 The operation frequency (frequency command value) of the inverters are calculated using the following equations, with the received data in the following equation used

as the data received from the master inverter when inverters are operated under the control of a master inverter (inter-drive communication), or with the received data in the following equation used as the data received from the computer when inverters are operated under the control of a computer (computer-linked operation).

[Page 47: Transmission Format For Inter-Drive Communication](#)

E6581913 6.2. Transmission format for inter-drive communication Data type is handled in hexadecimal notation and the transmission characters are treated with the binary (HEX) code. The transmission format is basically the same to the case of binary mode. S command is used and the slave inverters do not return the data.

[Page 48: Communication Parameters](#)

0-100% frequency Communication command point 2 0814 f814 0-fhHz 0.01Hz 60.0 setting Selection of 0: Toshiba inverter protocol 0829 f829 communication After reset. Chapter 3 1: Modbus RTU protocol protocol Number of motor f856 0856 poles for commu- 1:2poles, 2:4poles, - 8:16poles Real time Section 8.1...

[Page 49](#) E6581913 Communication Default Title Function Adjustment range Unit Valid Reference tion setting Number. 0: No selection 0870 f870 Block write data 1 1: Communication command 1 (FA00) 2: Communication command 2 (FA20) After reset. 3: Frequency command value 0871 f871 Block write data 2 (FA01) 4: Output data on the terminal...

[Page 50: Baud Rate \(F800\), Parity \(F801\)](#)

Parameters can be selected between 0 and 247. Note that the communication protocols limit inverter numbers as follows: ● Toshiba inverter protocol ASCII mode: 0 to 99 ● Toshiba inverter protocol Binary mode: 0 to 63 ● Modbus RTU protocol: 0 to 247 (0: Broadcast communication)

[Page 51: Communication Time-Out Detection \(F803\) \(F804\) \(F808\)](#)

E6581913 7.3. Communication time-out detection (f803) (f804) (f808) The timer function is mainly used to detect a break in a cable during communication, and if no data is sent to an inverter within the preset time, this function makes the inverter trip (□□□□) or issue an alarm (□).

[Page 52: Communication Waiting Time \(F805\)](#)

E6581913 7.4. Communication waiting time (f805) Use this function for the following case: When the data response from the inverter is too quick after the PC had sent the data to the inverter, PC process cannot get ready to receive the data, or when the USB/RS485, RS485/RS232C converter is used, changeover of sending and receiving data takes much time in the converter process.

[Page 53: Commands And Monitoring From The Computer](#)

E6581913 8. Commands and monitoring from the computer Across the network, instructions (commands and frequency) can be sent to each inverter and the operating status of each inverter can be monitored. 8.1. Communication commands (commands from the computer) Communication command 1 □...

[Page 54](#) E6581913 □ Communication command 2 (Communication Number : FA20) This command is enabled only when the communication command is enabled. Set Bit 15 of Communication Command 1 (communication Number: FA00) to "1" (enable). When enabling the communication command by Communication Command 1, commands by communication can be given the priority irrespective of the setting of the command mode selection parameter (cm0d).

[Page 55](#) E6581913 □ Frequency setting from the computer "Communication Number: FA01" Setting range: 0 to maximum frequency (fh) This frequency command value is enabled only when the frequency command by communication is enabled. To make frequency commands from the computer valid, set the frequency setting mode selection parameter (fmod) to RS485 communication (communication No.

[Page 56](#) E6581913 □ Output data on the terminal board (FA50) The output data on the terminal board can be directly controlled with the computer. To use this function, select functions from 92 to 95 in advance for the output terminal selection parameters f130, f131,

[Page 57: Monitoring From The Computer](#)

E6581913 8.2. Monitoring from the computer This section explains how to monitor the operating status of the inverter from the computer. □ Monitoring of the output frequency from the computer (FD00, FE00) Output frequency (current status): "Communication Number FD00" (unit: 0.01Hz) Output frequency (status immediately before the occurrence of a trip): "Communication Number FE00"...

[Page 58](#) E6581913 □ Input terminal block status (FD06, FE06) Input terminal block status (current status): "Communication Number FD06" Input terminal block status (status immediately before the occurrence of a trip): "Communication Number FE06" Using terminal function selection parameters, functions can be assigned individually to the terminals on the input terminal block.

[Page 59](#) E6581913 □ Output terminal block status (FD07, FE07) Output terminal block status (current status): "Communication Number FD07" Output terminal block status (status immediately before the occurrence of a trip): "Communication Number FE07" Using terminal function selection parameters, functions can be assigned individually to the terminals on the output terminal block.

[Page 60](#) E6581913 □ Status information 1 (FD01, FE01) Status information 1 (current status): "Communication Number FD01" Status information 1 (status immediately before the occurrence of a trip): "Communication No. FE01" Bit Specifications Remarks Failure FL No output Output in progress Trip statuses include rtry Failure Not tripped Tripped...

[Page 61](#) E6581913 □ Status information 2 (FD42, FE42) Status information 2 (current status): "Communication Number FD42" Status information 2 (status immediately before the occurrence of a trip): "Communication No. FE42" Function Remarks (Undefined) (Undefined) (Undefined) (Undefined) (Undefined) (Undefined) (Undefined) (Undefined) Maximum deceleration forced Normal Operation stop...

[Page 62](#) E6581913 □ Cumulative operation time alarm monitor (FE79) Cumulative operation time alarm monitor (current status): "Communication Number FE79" Specifications Remarks Fan life alarm Normal Alarm issued Circuit board life alarm Normal Alarm issued Main-circuit capacitor life alarm Normal Alarm issued User set alarm Normal Alarm issued...

[Page 63](#) E6581913 □ Trip code monitor (FC90: FE10 to FE13, FD10 to FD13) current status: historic records: Data Data (hexadeci- (decimal Code Description mal number) number) nerr□ No error oc1□ Over-current during acceleration oc2□ Over-current during deceleration oc3□ Over-current during constant speed operation ocl□...

[Page 64: Utilizing Panel \(Leds And Keys\) By Communication](#)

E6581913 8.3. Utilizing panel (LEDs and keys) by communication The VF-S15 can display data that is not related to the inverters through an external controller or other means. Input by key operations can also be executed. The use of inverter resources reduces the cost for the entire system.

[Page 65](#) E6581913 □ Block Communication Function for LED Display To display LED data for ASCII display that is synchronized to each digit, set data for each digit and validate this set data by display selection by communication (Communication Number FA65). Synchronization can also be achieved by batch writing LED data parameters after changing the following block communication mode parameters and by sending data by block communication.

[Page 66](#) E6581913 ■ ASCII LED display data code (00H-1FH are blank.) Hex Code Display Char. Hex Code Display Char. Hex Code Display Char. Hex Code Display Char. BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK &...

[Page 67: Key Utilization By Communication](#)

E6581913 8.3.2. Key utilization by communication The VF-S15 can use the panel keys on the inverters through external communication. □ Key Monitoring Procedure Set panel key selection (Communication Number: FA10) to "1" to set the external key mode. However, if communication duration is less than 1sec to avoid an inverter operation shutdown in

communication disruption, communication must always be maintained, such as monitoring key data and LED data to automatically reset inverter operations to inverter key operation (FA10 = 0).

[Page 68: Parameter Data](#)

E6581913 9. Parameter data Explanation of parameters for VF-S15 series is described here. For communication purposes, see the parameter list on inverter's instruction manual regarding the communication number, adjustment range and so forth. □ Referring to the parameter list <Example of excerpts from the inverter's instruction manual> Minimum Commu- setting unit...

[Page 69](#) E6581913 □ Command parameters For those parameters that contain data only in the RAM and not in the EEPROM, their data return to initial values when the power is turned off, in failure resetting, or when standard shipment settings are set. Note that parameters without data storage in the EEPROMs will be written in the RAM only even if the command W (writing in EEPROMs and RAM) is executed.

[Page 70](#) E6581913 (1 / 2) Communication No. Function Unit Remarks Current value Trip data held 0999 Acceleration/deceleration time unit Chapter 9 FB05 Inverter capacity code Appendix 3 FC00 Monitor of key data (Effective data) Refer to Section 8.3 FC01 Monitor of inverter keypad data FC90 Trip code...

[Page 71](#) E6581913 (2 / 2) Communication No. Function Unit Remarks Current value Trip data held FE70 Rated current 0.1A FE71 Rated voltage 0.1V FE73 CPU version 2 (motor) FE76 Integral input power It depends on f749 . FE77 Integral output power f749 =0 1=0.1kWh f749 =1...

[Page 72: Appendix 1 Table Of Data Codes](#)

E6581913 Appendix 1 Table of data codes □ JIS (ASCII) codes Higher order Lower order (DLE) (SP) (SOH) (STX) " (ETX) (EOT) (ENQ) (NAK) (ACK) (SYN) & (ETB) ' (BS) (HT) (LF) (VT) (FF) (FS) < ¥ (CR) (GS) (RS) >...

[Page 73: Appendix 2 Response Time](#)

E6581913 Appendix 2 Response time The communication response time can be calculated from data communication time and inverter processing time. When wishing to know the communication response time, calculate using the following as a reference Interval corresponding to 3.5 bytes Data processing time of inverter Data transmission time Data transmission time...

[Page 74: Appendix 3 Type And Form \(Fb05\)](#)

E6581913 Appendix 3 Type and Form (FB05) □ 3-phase 240V class Inverter model (capacity) code (FB05) Type and Form Voltage / Capacity Data Data (hex) (decimal) VFS15-2004PM-W 3ph 200/240V 0.4kW VFS15-2007PM-W 3ph 200/240V 0.75kW VFS15-2015PM-W 3ph 200/240V 1.5kW VFS15-2022PM-W 3ph 200/240V 2.2kW VFS15-2037PM-W 3ph 200/240V 3.7/4.0kW VFS15-2055PM-W...

[Page 75: Appendix 4 Troubleshooting](#)

To make them take effect, turn the inverter off tempo- rarily, and then turn it back on. The setting of a parameter was When using the Toshiba inverter protocol, use the W command to write Section 4.2 changed, but it returns to its data into the EEPROM.

[Page 76: Appendix 5 Connecting For Rs485 Communication](#)

E6581913 Appendix 5 Connecting for RS485 communication □ Connector diagram for two-wire RS485 communication 1pin 8pin Signal name Pin number Description RXD+/TXD+ Same phase reception data (positive line) RXD-/TXD- Anti-phase reception data (negative line) Ground line of signal data --- (Do not connect the cable.) --- (Do not connect the cable.) 24V (Do not connect the cable.) □...