

Toshiba XLTR-200 Instruction Manual

Toshiba serial multiprotocol network gateway user's manual

68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
9/	
98	
99	
(

Table of Contents

•

Bookmarks

•

Download this manual

Quick Links



NETWORK GATEWAY SERIES

INDUSTRIAL CONTROL COMMUNICATIONS, INC.

SERIAL MULTIPROTOCOL NETWORK GATEWAY

September 2006

ICC #10604-1.101-000

XLTR-200

Table of Contents

Next Page

Related Manuals for Toshiba XLTR-200

Gateway Toshiba T1-40 PLC Specification

Programmable controllers, protocol converters for toshiba plcs (4 pages) Gateway Toshiba ProtoNode Quick Install Manual

Multi-protocol client/server device (8 pages)

Summary of Contents for Toshiba XLTR-200

Page 1 NETWORK GATEWAY SERIES INDUSTRIAL CONTROL COMMUNICATIONS, INC. SERIAL MULTIPROTOCOL NETWORK GATEWAY September 2006 ICC #10604-1.101-000 XLTR-200...

<u>Page 2</u> In addition, please make sure that this instruction manual is delivered to the end user of the XLTR-200, and keep this instruction manual in a safe place for future reference or unit inspection.

Page 3 XLTR-200 Serial Multiprotocol Network Gateway User's Manual Part Number 10604-1.100-000 Printed in U.S.A. ©2006 Industrial Control Communications, Inc. All rights reserved Industrial Control Communications, Inc. reserves the right to make changes and improvements to its products without providing notice. Notice to Users INDUSTRIAL CONTROL COMMUNICATIONS, INC.'S PRODUCTS ARE NOT...

Page 4: Usage Precautions

ASD's E/GND terminals, the motor, or to any other power ground. • When making common serial connections between the gateway and Toshiba ASDs, do not use cables that exceed 5 meters in length. • For further drive-specific precaution, safety and installation information, please refer to the appropriate documentation supplied with your drive.

Page 5: Table Of Contents

Panel Mounting ...10 3.1.2 SnapTrack 3.1.3 DIN Rail Mounting...11 Installation for Non-Toshiba ASD Networks ...12 Toshiba Common Serial ASD Network Installation ...12 3.3.1 Installation for G7 ASDs...13 3.3.2 Installation for S7, S9, S11, A7 and VF-nC1 ASDs...15 RS485 Port Electrical Interfaces ...17 Environmental Specifications ...18...

Page 6 Coil Mappings ... 45 13.1.2 Modbus RTU Slave... 46 13.1.3 Modbus RTU Master... 46 13.2 Metasys N2... 48 13.3 Toshiba Common Serial ASD Protocol... 51 13.4 Toshiba RS485 ASD Protocol ... 51 13.5 Mitsubishi ASD Protocol ... 54 13.6 Siemens FLN... 58 13.6.1 Ports ...

Page 7 14.2 Connection ...92 14.3 Using the RFU Utility ...93 14.3.1 Required Files ...93 14.3.2 First-Time Configuration ...93 14.3.3 Transmitting Firmware Files ...94 14.4 Wrap-Up...96 Notes ...97...

Page 8: The Network Gateway Series Concept

1. The Network Gateway Series Concept The XLTR-200 is a member of the ICC Network Gateway Series product family. Members of this family are designed to provide a uniform interface, configuration and application experience. This commonality reduces the user's learning curve, reducing commissioning time while simplifying support. The...

Page 9: Feature Summary

Just plug it in – it's that simple. Power Supply When connected to Toshiba ASDs via the ASD1 / ASD2 / ASD3 ports, can be either powered directly from the attached ASDs, or from the auxiliary power ("AUX PWR") input jack. All other non-Toshiba applications require the use of the AUX PWR input to supply power to the unit.

<u>Page 10</u> 1 green "TX" and 1 red "RX" LED on each RS485 port. • 1 green and 1 red LED on each of the Toshiba common serial ASD ports. Refer to section 8 for more detailed information about the LED indicators and their meanings.

Page 11: Installing The Gateway

3. Installing the Gateway The gateway's installation procedure will vary slightly depending on the chosen mounting method and the networks that will be used. 3.1 Mounting 3.1.1 Panel Mounting The included standoff kit allows for panel mounting of the unit. The standoff kit is comprised of four 1"...

Page 12: Snaptrack

Using the dimensions provided in Figure 2, drill four 0.150" diameter holes at the specified locations on the panel. As a convenient pattern guide, the unit with attached mounting standoffs can be held against the panel, and the four standoff locations marked with a pencil or scribe. 4.0 IN Figure 2: Standoff Hole Placement As shown in Figure 1, use the four screws and lock washers from step 1 to...

Page 13: Installation For Non-Toshiba Asd Networks

Figure 3: DIN Rail Mounting Kit Installation 3.2 Installation for Non-Toshiba ASD Networks Note that in order to power the unit when not connecting to Toshiba ASDs via the common serial ports, the optional 120VAC/9VDC power supply (ICC part number 10456) or a user-supplied power source meeting the requirements outlined in section 10 must also be installed.

Page 14: Installation For G7 Asds

it is advantageous to check that the drive's common serial communication data rate is set to its maximum speed. Because the gateway will communicate to each drive only at the drive's configured data rate, this will provide the fastest response time for drive-to-network data transfers. For information on checking the drive's common serial communication data rate, refer to the appropriate manual supplied with your drive.

<u>Page 15</u> If the drives do not appear to power up, or do not function properly, immediately turn power OFF. Repeat steps 2 and 3 to remove all power from the drives. Then, verify all connections. Contact ICC or your local Toshiba representative for assistance if the problem persists.

Page 16: Installation For S7, S9, S11, A7 And Vf-Nc1 Asds

3.3.2 Installation for S7, S9, S11, A7 and VF-nC1 ASDs Mount the unit via the desired method (refer to section 3.1). CAUTION! be connected have been turned OFF and are locked and tagged out. DANGER! electrolytic capacitors to discharge before proceeding to the next step. Do not touch any internal parts with power applied to the drive, or for at least 5 minutes after power to the drive has been removed.

<u>Page 17</u> If the drives do not appear to power up, or do not function properly, immediately turn power OFF. Repeat steps 2 and 3 to remove all power from the drives. Then, verify all connections. Contact ICC or your local Toshiba representative for assistance if the problem persists.

Page 18: Rs485 Port Electrical Interfaces

4. RS485 Port Electrical Interfaces In order to ensure appropriate network conditions (signal voltage levels, etc.) when using the gateway's RS485 ports, some knowledge of the network interface circuitry is required. Refer to Figure 4 for a simplified network schematic of the RS485 interface circuitry. Note that the "Shield" terminal has no internal connection: its purpose is simply to provide a cable shield chaining location between devices.

Page 19: Environmental Specifications

5. Environmental Specifications Item Specification Indoors, less than 1000m above sea level, do not Operating Environment expose to direct sunlight or corrosive / explosive gasses -10 ~ +50°C (+14 ~ +122°F) Operating Temperature -40 ~ +85°C (-40 ~ +185°F) Storage Temperature 20% ~...

Page 20: Maintenance And Inspection

6. Maintenance and Inspection Preventive maintenance and inspection is required to maintain the gateway in its optimal condition, and to ensure a long operational lifetime. Depending on usage and operating conditions, perform a periodic inspection once every three to six months. Before starting inspections, disconnect all power sources. Inspection Points •...

Page 21: Storage And Warranty

7. Storage and Warranty 7.1 Storage Observe the following points when the gateway is not used immediately after purchase or when it is not used for an extended period of time. • Avoid storing the unit in places that are hot or humid, or that contain large quantities of dust or metallic dust.

Page 22: Led Indicators

These LEDs and their functions are summarized here. 8.1 Toshiba ASD Common Serial Port Indicators Each Toshiba ASD common serial port RJ45 connector has two LEDs positioned immediately above them (1 green and 1 red). Green LED...Indicates "drive link". Solid green when a logical connection exists with the attached drive (i.e.

Page 23: Auxiliary Power Supply

10. Auxiliary Power Supply The ICC part #10456 120VAC/9VDC power supply can be used to power the unit via the AUX PWR input. If providing your own auxiliary power supply, ensure that it adheres to the following specifications: Connection diagram ... Voltage rating ...

Page 24: Unit Configuration Concepts

Although each communication port can be configured via the serial console interface, their configuration selections vary slightly. The Toshiba ASD common serial ports have a simple enable/disable selection. The RS232 and RS485 ports can be disabled, or can have one of a selection of control protocols assigned to them.

Page 25: Point Configuration

The selection of what a specific point is to mirror is performed via its "source port" selection. For example, a point may be configured to contain Toshiba ASD parameter mapping and Modbus master ID and holding register mapping information.

Page 26: General Configuration Procedure

RS485A port. And, because the RS485A port has been designated as a Modbus Master, then the "Modbus Master" portion of point #5's configuration will be referenced by the update task, and point #5's value will therefore always be mirroring the value of holding register #14 of remote Modbus station address #8 connected to the Modbus subnet attached to the gateway's RS485A port.

<u>Page 27</u> Download a copy of the unit's configuration file to your PC for backup purposes Of course, it is possible to simplify or even eliminate some of these steps by starting your configuration from a pre-existing point database file (either downloaded from the internet or previously-created by the user), and then simply modifying those elements necessary to match your application.

Page 28: Console Access

12. Console Access 12.1 RS232 The console is accessible via an RS232 interface for direct connection to a computer's serial (COM) port. This is performed by connecting the unit's RS232 port to the computer's serial port via a standard straight-thru serial cable.

Page 29: Application Configuration

12.1.3 Application Configuration As previously mentioned, any PC communication software and PC serial port can be used. The software configuration example given here will be for Windows HyperTerminal communicating via COM1. Figure 7 shows the "Connect To" tab of the properties window for COM1. Figure 8 shows the window that appears when "Configure"...

<u>Page 30</u> Figure 8: HyperTerminal Properties...Connect To...Configure Figure 9: HyperTerminal Properties...Settings...

Page 31: Invocation

12.2 Invocation The console provides standard access and editing methods for the various configuration items (ports, points and their associated attributes). It is important to note that whenever you modify the point database and are ready to restart the gateway ("exit"), you must save the database to the internal file system prior to restarting or your changes will be lost.

Page 32: Main Menu

12.3 Main Menu The main menu is shown in Figure 11. All gateway configuration is performed by "drilling down" into progressively lower-level menus. Figure 11: Console Main Menu All navigation and data entry commands are input by simply entering the menu selection number to the right of the ">"...

Page 33: View/Edit Points

12.3.1 View/Edit Points Main menu selection number 1 displays a screen which shows a summary of the current point configuration (see Figure 12). This screen only displays the point number and the point name: in order to access more detailed point information, menu selection number 1 "Edit/View a Point"...

<u>Page 34</u> Refer to section 11.3 for more information about source ports. • Edit Toshiba, Mitsubishi, Modbus, Metasys: Menu selections 5-9 allow you to edit/view protocol-specific point attributes. Enter the menu selection corresponding to the protocol you wish to edit/view.

<u>Page 35</u> ASD parameter that this point will access. Figure 14 shows an example of how to change the current setting of FA00 to FA04 (which would be a typical change if the Toshiba RS485 protocol were to be used with this point). Note that Toshiba parameter values must be...

Page 36 Mitsubishi Point Attributes Figure 15: Edit Mitsubishi Attributes • Edit Address: Menu selection 1 allows you to edit the network address of the Mitsubishi ASD that this point refers to. • Edit Parameter: Menu selection 2 allows you to edit the Mitsubishi ASD parameter that this point will access.

<u>Page 37</u> Modbus Master Point Attributes Figure 16: Edit Modbus Master Attributes • Edit Address: Menu selection 1 allows you to edit the network address of the Modbus slave that this point refers to. • Edit Register: Menu selection 2 allows you to edit the Modbus holding register or input register that this point will access.

Page 38 Modbus Slave Point Attributes Figure 17: Edit Modbus Slave Attributes • Edit Register: Menu selection 1 allows you assign a Modbus holding register to this point. Figure 17 shows an example of how to change the current setting of 1 to 8.

<u>Page 39</u> Metasys N2 Point Attributes Figure 18: Edit Metasys N2 Attributes • Edit Object Type: Menu selection 1 allows modification of the object type. Figure 18 shows an example of how to change the current setting of AI to AO. • Edit Object Number: Menu selection 2 allows modification of the object number.

Page 40: View/Edit Ports

Menu selections 1-3 correspond to the Toshiba ASD ports, and these contain no other port configuration other than enable/disable. The syntax used to disable port ASD1 is shown at the bottom of Figure 19.

Page 41 RS485/232 Port Configuration Figure 20: Edit Port Configuration • Edit Protocol Selection: Menu selection 1 allows you to change what serial protocol is running on the selected port. Note that not all ports run the same protocols. Figure 20 shows how to change the protocol selection from the current setting of Metasys N2 to Modbus slave.

Page 42: Load Points

Configuration files contain all point and port settings. A downloaded configuration file can be uploaded to any compatible XLTR-200, allowing the user to clone multiple units with the same configuration. Two different variations of the Xmodem protocol are supported (CRC and Checksum) for those serial communication packages that only support one or the other.

Page 43 "/u" to upload a configuration file to the unit. Figure 22 shows an example of initiating an Xmodem download in CRC mode. Once the message "The XLTR-200 is ready to send its configuration file via Xmodem...Download the file now" appears, the user has 30 seconds to start the Xmodem download.

Page 44: Xltr-200 Information

The previous configuration cannot be recovered (unless a corresponding configuration file exists, of course). 12.3.5 XLTR-200 Information Main menu selection 5 provides some basic information about the gateway, such as firmware version (see Figure 24). Figure 24: XLTR-200 Information...

Page 45: Protocol-Specific Information

13. Protocol-Specific Information This section will discuss topics that are specific to each of the available network selections. 13.1 Modbus The gateway supports Modbus slave and master functionality via Modbus RTU. The slave implementations share common access methods, which is to say they support the same functions and reference the internal points via a common "Modbus Slave"...

Page 46: Coil Mappings

object, no Modbus exception will be immediately returned. However, the point will always reflect the "source port" status and object value. In other words, if such an out-of-range write attempt is performed, the unsuccessful "source port" network write can be observed by reading the current (unchanged) value of the point during a subsequent Modbus transaction.

Page 47: Modbus Rtu Slave

Note that this coil-to-register/bit relationship holds true regardless of whether or not holding register #3 is assigned to a point. If holding register #3 is not assigned to a point, then a Modbus exception will be returned. Either way, coil #34 will always access holding register #3, bit #1.

Page 48 Modbus RTU master protocol. e.g VF-AS1 "command 1" parameter is documented to be FA00 in the Toshiba literature. Converting this to decimal, we arrive at a value of 64000. To allow a point in the gateway's database to correctly access the "command 1"...

Page 49: Metasys N2

13.2 Metasys N2 • The gateway acts as a Johnson Controls Metasys N2 slave, and supports N2 analog input, analog output, binary input and binary output object types. • Analog input (AI) objects are used for monitoring analog status items. AI objects support low alarm limits, low warning limits, high warning limits, high alarm limits and differential values.

Page 50 • The Metasys device type for the gateway is VND. • Because the Metasys N2 protocol specifies strict response timing requirements, all accessible data objects must be designated as points, thereby making use of data mirroring. • Network characteristics selections: not configurable according to the Metasys N2 specification.

Page 51 SHIELD SHIELD N2 Network Gateway RS-485 Devices Terminals Figure 25: N2 Bus Cable Connection...

Page 52: Toshiba Common Serial Asd Protocol

Point parameter number entry radix is hexadecimal (e.g. 10 = 0x0010 or 13.4 Toshiba RS485 ASD Protocol • The gateway can act as a Toshiba ASD master via its RS485 ports. All Toshiba drives that implement the Toshiba protocol and provide either a built-in or option-based RS485 port are supported.

Page 53 The Toshiba RS485 terminal block connections for G7/Q7/H7/W7 drives are shown in Figure 27 for reference only. Because there are many possible RS485 port configurations & options available for the various Toshiba drives, please refer to the relevant Toshiba documentation for your drive. Signal Ground Figure 27: G7/Q7/H7/W7 RS485 Terminal Block (CN3) Connections •...

<u>Page 54</u> • The drive response timeout (in seconds) is assigned via the designated port's "Timeout" selection. If "0" is chosen (an invalid timeout time), the gateway will use a 1s timeout

by default. • Network characteristics selections Baud rate: 2400 / 4800 / 9600 / 19200 / 38400 bps Parity: odd / even / none (1 stop bit) / none (2 stop bits) •...

Page 55: Mitsubishi Asd Protocol

13.5 Mitsubishi ASD Protocol • The gateway acts as a Mitsubishi protocol master via its RS-485 ports. Adjustable speed drives such as the FR-A500/E500/F500 series and F700- series that support the Mitsubishi protocol can be accessed. Also supported are MGI Technologies, Inc. M3000, M4000 and M5000-series drives that support the Mitsubishi protocol.

Page 56 Connect as shown in Figure 30. Figure 29: EIA/TIA Wiring Standards RDA SDA SDB RDB Signal (TB:2) Ground (TB:1) (TB:3) Figure 30: PU Port Connections • For 700-series drives, the gateway can connect to the ASD via either the PU (panel) connector as indicated in Figure 30, or via the on-board RS-485 terminals.

Page 57 (TB:1) Figure 31: 700-Series ASD Connections • Note that although the 700-series ASD also supports the Modbus RTU protocol, the initial ASD firmware did not support the Modbus RTU protocol in 2-wire format. Therefore, using the Mitsubishi protocol may be the only available method to communicate with the gateway (ASD parameter 549 must be "0").

Page 58 on these parameters, please refer to the relevant Mitsubishi documentation. Table 3: Additional Mitsubishi Parameter Assignments Parameter Number 1000 1001 1002 1003 1004 1005 1006 1007 1008 Most recent #1 and #2 alarms / alarm clear 1009 1010 1011 1014 Inverter status monitor / operation command 1015 1016...

Page 59: Siemens Fln

13.6.1 Ports • For this application, the FLN network must be connected to XLTR-200 RS485 port A, and the Mitsubishi network must be connected to XLTR-200 RS485 port B. • The FLN port (RS485 port A) requires no configuration other than the FLN node address, which has a valid address range of 0 –...

Page 60: Supported Subpoints

13.6.2 Supported Subpoints This application contains a predefined set of FLN subpoints (refer to Table 4). These points are static for this application, and cannot be edited. Point Subpoint Point # Type Name ADDRESS APPLICATION FREQ OUTPUT OUTPUT CUR OUTPUT VOLT SPECIAL MON MON SELECT ACCEL TIME...

Page 61: Subpoint Details

13.6.3 Subpoint Details This section gives a brief overview of each subpoint, including any notable behavior or settings. Further information may be obtained by referring to applicable Mitsubishi ASD documentation. 1. ADDRESS This is the FLN address of the drive. It can be changed via FLN or via the gateway's serial console.

Page 62 11. CMD REV.STOP Commands the drive to run reverse or stop. Note that commanding this point is effective only when the drive is configured for network start/stop control. Corresponds to drive command parameter 1014, bit #2. 12. FREQ CMD The frequency command of the drive in Hertz. Note that commanding this point is effective only when the drive is configured for network frequency control.

Page 63 point's value is "NO". The drive network wiring, etc., should also be inspected in such a condition in order to identify the cause of the communication outage. 22. OPER MODE Drive operation mode. Corresponds to drive parameter 1015. 29. DAY.NIGHT This is a mandatory FLN point required for compatibility with Siemens control systems.

Page 64: Toshiba 3-Series Asd Protocol

13.7 Toshiba 3-Series ASD Protocol • The gateway can act as an RS232 master for Toshiba 3series ASDs (G3, H3, E3 etc.) Use of the ICC "Toshiba 3-Series ASD Interface Cable" (ICC part #10603) or an equivalent cable is required to connect the gateway's RS232 port to the drive's on-board RS232 port.

Page 65: Command Parameters

13.7.1 Command Parameters Parameter Function 0001 word Frequency command 0002 RUN command Reserved Forward • reverse run selection Acc/dec #1 / #2 selection Reserved

Reserved Reserved Jog mode selection Feedback control Compulsory DC injection braking mode Fundamental parameter switching Gate block command (coast stop command) Emergency off command...

Page 66: Monitor Parameters

13.7.2 Monitor Parameters Parameter Function 0005 word Output frequency monitor 0006 Run • stop status Reserved Forward • reverse status Accel / decel #1 / #2 selection status Reserved Reserved Reserved Jog mode status Feedback enable status Compulsory DC injection braking mode Fundamental parameter switching...

Page 67 Parameter Function 0012 high 2nd past trip byte 1st past trip (oldest) byte 0013 word Pre-compensation output frequency 0014 word Post-compensation output frequency 0015 word Torque current monitor 0016 Excitation current monitor byte high Reserved byte 0017 word PID feedback value 0018 word Motor overload ratio...

Page 68 Table 5: Input Terminal Status Monitor (parameter 000D) Input Terminal bit 0 bit 1 bit 2 Lower Byte bit 3 bit 4 bit 5 bit 6 S5 (option) bit 7 S6 (option) Input Terminal bit 0 unused (always 0) bit 1 unused (always 0) bit 2 unused (always 0)

Page 69 Table 7: Inverter Status 1 (parameter 000F) Inverter Status bit 0 running (accel/decel) bit 1 unused (always 0) bit 2 forward / reverse Lower Byte bit 3 accel/decel #1/#2 bit 4 for inverter use bit 5 for inverter use bit 6 for inverter use bit 7 jog/normal mode...

Page 70: Fundamental Parameters #1

13.7.3 Fundamental Parameters #1 Parameter Function / Title MAXIMUM OUTPUT 0026 FREQUENCY BASE FREQUENCY #1 0027 BASE FREQUENCY 0028 VOLTAGE SELECT MAXIMUM OUTPUT 0029 VOLTAGE #1 REVERSE OPERATION 002A DISABLE SELECT UPPER LIMIT FREQUENCY 002B LOWER LIMIT FREQUENCY 002C VOLTS PER HERTZ 002D PATTERN VOLTAGE BOOST...

Page 71: Fundamental Parameters #2

13.7.4 Fundamental Parameters #2 Parameter Function / Title BASE FREQUENCY #2 0034 MAXIMUM OUTPUT 0035 VOLTAGE #2 VOLTAGE BOOST #2 0036 ELECTRONIC THERMAL 0037 PROTECT LVL #2 STALL PROTECTION 0038 SELECTION #2 0039 STALL PROTECTION LEVEL #2 ACCELERATION TIME #2 003A DECELERATION TIME #2 003B...

Page 72: Terminal Selection Parameters

13.7.6 Terminal Selection Parameters Parameter Function / Title INPUT TERMINAL 0044 SELECTION "R" INPUT TERMINAL 0045 FUNCTION "S1" INPUT 0046 TERMINAL FUNCTION "S2" INPUT 0047 TERMINAL FUNCTION "S3" INPUT 0048 TERMINAL FUNCTION "S4" INPUT 0049 TERMINAL FUNCTION "F" INPUT TERMINAL 004A FUNCTION "RES"...

Page 73 Parameter Function / Title LOW SPEED SIGNAL 0061 OUTPUT FREQ 0062 ACC/DEC COMPLETE DETECT BAND SPEED REACH MAXIMUM 0063 FREQUENCY SPEED REACH MINIMUM 0064 FREQUENCY COMMERCIAL POWER/INV 0065 SWITCHING OUTPUT COMMERCIAL 0066 2, 3 POWER/INV SWITCH FREQ "FP" OUTPUT TERMINAL 0067 PULSE FREQUENCY RR INPUT SPECIAL...

Page 74 Table 9: Input Terminal Selections Setting Data Function Value (Hex) 10C8 (reverse run) 011C (preset speed selection) 021C (preset speed selection) 041C (preset speed selection) 081C (preset speed selection) 20C8 (forward run) 201B (fault reset) C0C9 (gate ON/OFF) 0CC8 JOG selection 081A Accel / decel #1/#2 selection 101B...

Page 75 Table 10: Output Terminal Selections (RCH, LOW, FL, OUT relay contacts) Setting Data Function Value (Hex) 0000 Lower limit frequency 0100 /Lower limit frequency 0200 Upper limit frequency 0300 /Upper limit frequency 0400 Low speed signal 0500 /Low speed signal 0600 Accel/decel complete 0700...

Page 76: Special Control Parameters

13.7.7 Special Control Parameters Parameter Function / Title START-UP FREQUENCY 0069 006A ~ Reserved 006F END FREQUENCY 0070 RUN FREQUENCY 0071 RUN FREQUENCY 0072 HYSTERESIS ENABLE JUMP 0073 FREQUENCIES 0074 JUMP FREQUENCY #1 JUMP FREQUENCY #1 0075 BANDWIDTH JUMP FREQUENCY #2 0076 JUMP FREQUENCY #2 0077...

Page 77: Frequency Setting Parameters

13.7.8 Frequency Setting Parameters Parameter Function / Title FREQUENCY PRIORITY 0081 SELECTION #1 FREQUENCY PRIORITY 0082 SELECTION #2 0083 ANALOG INPUT FILTER RR TERMINAL STANDARD 0084 OR ADJUSTABLE RR REFERENCE 0085 SETTING POINT #1 0086 RR REF POINT #1 FREQUENCY 0087 RR REFERENCE SETTING POINT #2...

Page 78 Parameter Function / Title BINARY INPUT STD OR 0098 ADJUSTABLE BINARY REF SETTING 0099 POINT #1 BINARY REF POINT 009A #1 FREQUENCY BINARY REF SETTING 009B POINT #2 BINARY REF POINT 009C #2 FREQUENCY JOG RUN FREQUENCY 009D JOG STOP 009E Other METHOD...

Page 79 Parameter Function / Title higher PRESET SPEED 0110 #8 OPERATING MODE PRESET SPEED 0111 #9 FREQUENCY 9 or PRESET SPEED 0112 higher #9 OPERATING MODE PRESET SPEED 0113 #10 FREQUENCY 10 or PRESET SPEED 0114 higher #10 OPERATING MODE PRESET SPEED 0115 #11 FREQUENCY 11 or...

Page 80: Protection Function Parameters

13.7.9 Protection Function Parameters Parameter Function / Title DYNAMIC BRAKING 011F SELECTION BRAKING 0120 RESISTOR VALUE BRAKING 0121 RESISTOR POWER RATING OVERVOLTAGE STALL 0122 PROTECTION DC INJECTION START 0123 FREQUENCY DC INJECTION 0124 CURRENT Other MAGNITUDE than DC INJECTION 0125 TIME FWD/REV DC 0126...

Page 81 Parameter Function / Title STALL PROTECTION 0133 ENABLE STALL 0134 PROTECTION CURRENT LEVEL UNDERVOLTAGE TRIP 0135 SELECTION UNDERVOLTAGE DETECT 0136 TIME LOW CURRENT DETECT 0137 SELECTION LOW CURRENT DETECT 0138 LEVEL LOW CURRENT 0139 DETECTION TIME OUTPUT SHORT- 0140 CIRCUIT DETECTION SELECT OVERTORQUE TRIP 0141...

Page 82: Pattern Run Control Parameters

13.7.10 Pattern Run Control Parameters Parameter Function / Title PATTERN RUN SELECTION 0146 PATTERN RUN 0147 CONTINUE MODE PATTERN GROUP #1 0148 SPEED #0 PATTERN GROUP #1 0149 SPEED #1 PATTERN GROUP #1 0150 SPEED #2 PATTERN GROUP #1 0151 SPEED #3 PATTERN GROUP #1 0152...

Page 83 Parameter Function / Title PATTERN GROUP #4 016A SPEED #1 PATTERN GROUP #4 016B SPEED #2 PATTERN GROUP #4 016C SPEED #3 PATTERN GROUP #4 016D SPEED #4 PATTERN GROUP #4 016E SPEED #5 PATTERN GROUP #4 016F SPEED #6 PATTERN GROUP #4 0170 SPEED #7...

Page 84 Parameter Function / Title SPEED #10 0185 < 4 DRIVE TIME SPEED #11 0186 CONTINUE MODE SPEED #11 0187 < 4 DRIVE TIME SPEED #12 0188 CONTINUE MODE SPEED #12 0189 < 4 DRIVE TIME SPEED #13 018A CONTINUE MODE SPEED #13 018B <...

Page 85: Feedback Control Parameters

13.7.11 Feedback Control Parameters Parameter Function / Title FEEDBACK CONTROL 0190 SELECTION 0191 FEEDBACK INPUT SIGNAL SELECTION PROPORTIONAL 0192 GAIN INTEGRAL GAIN 0193 ANTI-HUNTING 0194 GAIN LAG TIME 0195 CONSTANT PID LOWER LIMIT 0196 FREQUENCY PID DEVIATION LIMIT 0197 SELECTION PID DEVIATION 0198 UPPER LIMIT...

Page 86: Communication Setting Parameters

13.7.12 Communication Setting Parameters Parameter Function / Title INVERTER ID NUMBER 0204 COMMUNICATION 0205 SELECTION MASTER/SLAVE 0206 SELECTION 0207 RS485 BAUD RATE TOSLINE-F10 0208 COMMAND INPUT TOSLINE-F10 0209 MONITOR OUTPUT TOSLINE-F10 COMM 020A ERROR MODE TOSLINE-S20 020B RECEIVE ADDRESS TOSLINE-S20 020C TRANSMIT ADDRESS TOSLINE-S20...

Page 87: Am/Fm Terminal Adjustment Parameters

13.7.13 AM/FM Terminal Adjustment Parameters Parameter Function / Title FM TERMINAL FUNCTION 0218 SELECTION FREQUENCY METER 0219 ADJUSTMENT AM TERMINAL FUNCTION 021A SELECTION CURRENT METER 021B ADJUSTMENT Bank Mask Adjustment Range 0 / 1 FFFF 1194: Pre-comp ref. frequency 6686: Post-comp output freq. 1500: Frequency setting 2576:

Output current 2689: DC voltage...

Page 88: Utility Parameters

13.7.14 Utility Parameters Parameter Function / Title INDUSTRIAL 021C APPLICATIONS (previous setting monitor for read use only) INDUSTRIAL 021D APPLICATIONS (for write use) STANDARD SETTING 021E MODE SELECTION 021F COMMAND MODE SELECTION FREQUENCY MODE 0220 SELECTION PANEL OPERATION 0221 MODE SELECTION PASS NUMBER 0222 CPU VERSION...

Page 89 Parameter Function / Title 022D ACC/DEC TIME UNITS SELECTION CURRENT UNITS 022E SELECTION VOLTAGE UNITS 022F SELECTION BLIND FUNCTION 0230 SELECTION FUNDAMENTAL 0231 PARAMS #2 BLIND PANEL CONTROL 0232 PARAMS BLIND TERMINAL 0233 SELECTION PARAMS BLIND SPECIAL CONTROL 0234 PARAMS BLIND FREQUENCY 0235 SETTING PARAMS...

Page 90: Motor Rating Parameters

0008: (16) 0001 ~ 270F (0.1 ~ 999.9) 0 / 1 FFFF 0 / 1 0030 0000:Toshiba EQPIII motor 0010:Toshiba STD motor 0020:Other 0012 ~ 0078 (90 ~ 600) 0 / 1 00FF 001A ~ 00AC (130 ~ 860) 0 / 1 00FF 0000 ~...

Page 91: Inverter Fault Codes

13.7.16 Inverter Fault Codes Data LCD Display Message (Hex) NO ERROR ××00 OVERCURRENT (ACCEL) ××01 (PRESS CLEAR) OVERCURRENT (DECEL) ××02 (PRESS CLEAR) OVERCURRENT (RUN) ××03 (PRESS CLEAR) LOAD-END OVERCURRENT ××04 (PRESS CLEAR) U-PHASE SHORT CKT ××05 (PRESS CLEAR) V-PHASE SHORT CKT ××06 (PRESS CLEAR) W-PHASE SHORT CKT...

Page 92 Data LCD Display Message (Hex) OPTION PCB ERROR ××1B (PRESS CLEAR) OPTION ROM ERROR ××1C LOW CURRENT TRIP ××1D (PRESS CLEAR) UNDERVOLTAGE TRIP ××1E (PRESS CLEAR) [] ××1F OVERTORQUE TRIP ××20 (PRESS CLEAR) EARTH FAULT (SOFT) ××21 (PRESS CLEAR) EARTH FAULT (HARD) ××22 (PRESS CLEAR) OPEN FUSE TRIP...

Page 93: Firmware Updates

14. Firmware Updates The gateway's embedded firmware resides in flash memory that can be updated in the field. Firmware updates may be released for a variety of reasons, such as custom firmware implementations, firmware improvements and added functionality as a result of user requests. ICC is continually striving to enhance the functionality and flexibility of our products, and we therefore periodically release new embedded firmware to achieve these goals and meet customer requests.

Page 94: Using The Rfu Utility

14.3 Using the RFU Utility Support for downloading new application firmware to the gateway is provided by the free Rabbit Field Utility (RFU), which is a 32-bit application that runs on Microsoft Windows platforms. The RFU utility can be downloaded from ICC's home page at http://www.iccdesigns.com.

Page 95: Transmitting Firmware Files

"Comm Port" settings, which depends on the COM port you are using. Click "OK" when complete. Figure 33: Communications Options Window Next, select the "Setup...File Locations" menu item from the main screen. The "Choose File Locations" window shown in Figure 34 then appears. Confirm that the correct paths to the referenced files are entered.

<u>Page 96</u> Once the RFU utility has been configured, the flash firmware files can be downloaded to the gateway by two different methods. The simplest way is to drag the application firmware .BIN file's icon and drop it onto the RFU utility's main screen.

Page 97: Wrap-Up

14.4 Wrap-Up Once downloading is complete, close the RFU utility, move "CFG" switch #1 back to the "OFF" (left-hand) position to exit "firmware download" mode, and cycle power momentarily to the unit by either disconnecting the auxiliary power supply and/or powering down all connected drives or momentarily removing all drive communication cables from the unit.

Page 98: Notes

15. Notes...

Page 99 INDUSTRIAL CONTROL COMMUNICATIONS, INC. Madison Office 1600 Aspen Commons, Suite 210 Middleton, WI USA 53562-4720 Tel: [608] 831-1255 Fax: [608] 831-2045 http://www.iccdesigns.com Houston Office 12300 Dundee Court, Suite 212 Cypress, TX USA 77429-8364 Printed in U.S.A...