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You can read the recommendations in the user guide, the technical guide or the installation guide for OMRON CX-DRIVE. You'll find the answers to all your questions on the OMRON CX-DRIVE in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual OMRON CX-DRIVE
User guide OMRON CX-DRIVE
Operating instructions OMRON CX-DRIVE
Instructions for use OMRON CX-DRIVE
Instruction manual OMRON CX-DRIVE

Cat. No. W453-E1-05

SYSMAC
CXONE-AL[]C-EV2/
CXONE-AL[]D-EV2

CX-Drive

OPERATION MANUAL

OMRON



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Drive type Manual Name Cat. No. (suffixes omitted) 1528-E1 1527-E1 1532-E1 1549-E1 1539-E1 1533-E1 1531-E1 1544-E1 Inverters SYSDRIVE 3G3JV Compact Simplified Inverters User's Manual SYSDRIVE 3G3MV Multi-function Compact Inverter User's Manual SYSDRIVE RV Series Models 3G3RV High-function General-purpose Inverters User's Manual SYSDRIVE RV Series Models 3G3RV-V1 High-function General-purpose Inverters Setup Manual DeviceNet Communications Unit/Card 3G3MV-PDRT2, 3G3RV-PDRT2 User's Manual SMARTSTEP A Series Servomotors/Servo Drives Models R7M-A@ (Servomotors)/R7D-AP@ (Servo Drives) User's Manual OMNUC W Series Models R88M-W@ (AC Servomotors)/Models R88DWT@ (AC Servo Drives) AC Servomotors/Servo Drives User's Manual OMNUC W Series AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications Models R88M-W@ (AC Servomotors)/R88DWN@-ML2 (AC Servo Drives) User's Manual Servomotors/ Servo Drives For details on procedures for installing the CX-Drive from the CX-One FA Integrated Tool Package, refer to the CX-One Setup Manual (W463) provided with CX-One. Cat. No.

W463 Model CXONE-AL@@@CEV2/AL@@@D-EV2 Name Contents CX-One Ver. 2.1 FA Inte- Installation and overview of CX-One FA graded Tool Package Integrated Tool Package. Setup Manual Precautions provides general precautions for using the CX-Drive, Programmable Controller, and related devices.

Section 1 provides an overview of the CX-Drive, and describes the functions and system requirements required to operate the CX-Drive.

It also provided installation methods and the overall procedure for using the CX-Drive. provides basic operating procedures for using the CX-Drive, including descriptions of CX-Drive windows and parameter setting procedures. Also refer to the CX-Drive Online Help for operating procedures and functions. Select Help from the Help Menu or click the Button to display context help, which displays help about the currently displayed window. ix Version Improvements Addition of Supported Inverters Support for the following Inverters has been added for version 1.12 of the CX-Drive: 3G3RV Inverters, Version 1 (-V1) To specify the 3G3RV-V1 offline with CX-Drive version 1.3, select "3G3RV" in the Drive Type dialog box (see page 17) and then specify "V1" in the specification field. Change to Relative Path Information for Workspace Files (Extension .sdw) Item Ver. 1.

12 Ver. 1.3 Link information is held using relative paths for all drive data files (.sdd). This enables moving files as long as the relative position of all drive data files is the same. Workspace files Link information is held using absolute (file name extension .sdw) paths for all drive data files (.sdd). This prevents moving files. Support for Windows Vista CX-Drive version 1.

4 or higher will run on Windows Vista. Registered Trademark · MECHATROLINK is a registered trademark of the MECHATROLINK Members Association.



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PROGRAMMABLE PRODUCTS OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof. xii *Disclaimers* CHANGE IN SPECIFICATIONS Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products. DIMENSIONS AND WEIGHTS Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown. PERFORMANCE DATA Performance data given in this manual is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application d for OMRON Inverters but operation may be unstable in some operating environments (mainly depending on the ambient temperature, humidity, and noise). @@ Check the warranty information from the manufacturer.

4 *Application Precautions* Observe the following precautions when using the CX-Drive. · Confirm that set parameters operate properly before using them in actual applications. · Do not turn OFF the power to the Servo Drive while writing to flash memory. In the worst case, doing so may damage the flash memory. · After replacing an Inverter or Servo Drive, restart operation only after saving the required parameters in the new Inverter or Servo Drive. · Confirm that no adverse effect will occur in the system before attempting any of the following. Not doing so may result in an unexpected operation. · Changing the operating mode of the PLC (including changing the Startup Mode) · Changing parameter settings · Automatically downloading parameters (This function is enable by selecting the Autodownload when a parameter is updated Option on the Online Options Tab Page in the window that appears when Tools - Options is selected from the menu bar.) · Do not turn OFF the power to the computer while installing or uninstalling the CX-Drive. Doing so may result in corrupted data in the computer. · The multi-turn counter and alarms will be set in the absolute serial encoder if the absolute encoder setting function is performed. If the absolute encoder's multi-turn counter is reset to zero, the coordinate system of the mechanical system will change from what it was previously. Be sure that the encoder is set correctly before resetting the mechanical system to the zero point. xvii *Application Precautions* 4 xviii *SECTION 1 Overview* This section provides an overview of the CX-Drive, and describes the functions and system requirements required to operate the CX-Drive. It also provided installation methods and the overall procedure for using the CX-Drive. 1-1 1-2 1-3 1-4 Introduction

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..... 2 5 7 11 1 Introduction Section 1-1 1-1 1-1-1 Introduction What Is the CX-Drive? The CX-Drive is a software application that enables 1) setting, downloading, uploading, and comparing parameters, 2) test runs and tuning, and 3) monitoring and data tracing for Inverters and Servos.

Inverters CX-Drive Servos CX-Drive Setting parameters, test runs, and tuning Monitoring/tracing Setting parameters, test runs, and tuning Monitoring/tracing Inverter Servo 1-1-2 Features The CX-Drive can be used with OMRON's 3G3JV, 3G3MV, and 3G3RV Inverters, as well as OMRON's SMARTSTEP, W-series, and MECHATROLINK-IIcompliant (see note) W-series Servo Drives.



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Supports Most OMRON Inverters and Servos Wide Range of Parameter Editing Functions Easy and Dependable Parameter Editing for Inverters and Servos Inverter and Servo parameters can be edited using parameter numbers or by category. Parameter editing tables show parameter ID numbers, descriptions, units, default values, and ranges in the same way as in the Servo manuals. Parameters can be set using pull-down menus or by typing in settings. Parameter settings can be easily reviewed because setting status (e.g., modified, warning, default, or disabled) is shown for each parameter to avoid setting mistakes. Easily Check Drive Parameters and Upload/ Download Only Selected Parameters Edit Parameters in Graphic Form Display Parameters in Diagrams When connected online, you can easily display drive parameters by using a comparison function. Also, the selected parameters can be downloaded to or uploaded from the drive as required. Inverter parameters, such as V/F profiles and jump frequencies, can be displayed in graphic charts.

Drive parameters can be displayed in diagrams, such as PID diagrams or position/speed/torque block diagrams. The connected drives can be detected automatically and displayed in a list without setting model numbers or connection types. Just select a drive to add it to the Workspace. Automatically Detect Drives 2 Introduction Inverter Tuning and Test Runs Auto-tuning for the 3G3RV Inverter Test Runs Section 1-1 Just enter the specified motor parameters and let the Servo automatically tune itself to match the characteristics of the motor. The test run options enable the acceleration, deceleration, and frequency references of the motor to be determined for testing purposes.

Additional options allow the motor to be run continuously or cycled for 'n' number of cycles. Forward or reverse operation and stopping are also possible, and the feedback input can be displayed. The parameters can be set either by entering them directly into the appropriate fields or graphically by dragging handles in the Test Run Setup Diagram. Servo Tuning and Test Runs Auto-tuning The auto-tuning function calculates the load moment of inertia during operation of the Servo and sets parameters to achieve Servo gains that are consistent with the machine rigidity settings. These parameters can be saved in the Servo and used the next time power is turned ON.

The test run options enable the jog speed, acceleration, and deceleration of the motor to be determined for testing purposes. Continuous operation, cyclic operation, origin searches, turning the Servo ON/OFF, forward/reverse direction selection, stopping, and speed display are also possible. The parameters can be set either by entering them directly into the appropriate fields or graphically by dragging handles in the Test Run Setup Diagram. Adjust Offsets for the R7D-AP and R88D-WT Absolute Encoder Setting for the R88D-WT The speed/torque offset can be adjusted automatically or manually, the offset and gain of the analog monitor output can be adjusted, and the current detection offset can be adjusted automatically or manually. An absolute encoder and multi-turn limit can be set for the R88D-WT. The Real Time Monitor Window enables monitoring a specific set of parameters. The parameter values are displayed simultaneously in graphic and digital forms. The graphic display shows the parameter values per unit time. Note Online functions are supported for only one axis at a time. Servo Test Runs Realtime Tracing 3 Introduction Section 1-1 1-1-3 Drive type Applicable Drives and Communications The CX-Drive supports the following drives and communications.

Series Serial communications Supported. RS-232C Communications Unit (3G3JV-PSI232JC) or RS-422/485 Communications Unit (3G3JV-PSI485J) required. Uses Modbus-RTU protocol. Supported. RS-422A/485: Modbus-RTU protocol Supported. RS-422A/485: Modbus-RTU protocol Supported. RS-232C: Special protocol Supported. RS-232C: Special protocol --Communications DeviceNet --MECHATROLINK-II (See note.) Inverters 3G3JV 3G3MV Supported. DeviceNet Communications Unit (3G3MV-PDRT2) required.

Supported. DeviceNet Communications Unit (3G3RV-PDRT2) required. --- --- 3G3RV (including version-1 models) Servos SMARTSTEP A Series (R7D-AP) W Series (R88D-WT) --- --- W Series with MECHATROLINK-II (R88D-WN) --- --- Supported. MECHATROLINK-II Interface Unit (JUSP-NS115/FNYNS115) required. Supported.

Refer to 1-3 System Configuration for the system configuration. 4 Installation Section 1-2 1-1-4 Files Created by CX-Drive The CX-Drive creates the following files. File type Workspace file File name extension .sdw Contents Saving method Contains the tree for all File - Save Workspace or related drive files. This file Save as Workspace.

.. contains the relative path name for each data file. Note Relative path information is held, so files can be moved as long as the relative position of all drive data files is the same (CX-Drive Ver. 1.3 or higher). Each drive file Data of the Real Time Trace or Data Trace. File - Save or Save As...

Select the Save to File Option on the Review Set-up Tab Page in the Real Time Trace or Data Trace Window. File - Export Drive file .sdd Monitor .sdm review file Text file for drive file .csv or .txt Each drive file Note Consecutive parameters can be exported to Microsoft Excel via the clipboard by selecting the required parameters with the mouse or from the keyboard (Shift + Cursor Keys) and then selecting Edit - Copy from the menu. The CX-Drive can import the following data files. File type File name extension Contents Drive file Saving method File - Import Text file .txt WMON data file .usr 1-1-5 Computer System Requirements Refer to the CX-One Ver.

2.1 Setup Manual (W463) for the computer system requirements for the CX-Drive. 1-1-6 Confirming Product Contents Refer to the following manual for the product configuration of the CX-One Ver. 2.1, which contains the CX-Drive.

Cat. No. W463 Model number CXONE-AL@@CEV2/AL@@D-EV2 Manual name CX-One Ver. 2.1 FA Integrated Tool Package Setup Manual Contents Provides an overview of the CX-One FA Integrated Tool and installation procedures.

1-2 1-2-1 Installation Required Software To use the CX-Drive, the software applications listed below must be installed on the same computer. 1,2,3... 1. CX-Drive 5 Installation Section 1-2 2. Communications driver: CX-Server (including CX-Server Driver Management Tool) CX-Drive Availability The CX-Drive must be installed from the CX-One Package. Refer to the following manual for installation procedures for the CX-One Package. Cat. No.

W463 Model number CXONE-AL@@CEV2/AL@@D-EV2 Manual name CX-One Ver. 2.1 FA Integrated Tool Package Setup Manual Contents Provides an overview of the CX-One FA Integrated Tool and installation procedures. 6 System Configuration Section 1-3 1-3 1-3-1 System Configuration Inverter Connection Direct serial connection Direct PLC Serial Communications Board/ Unit connection Via PLC (SCU/SCB) Connection type Connection name Configuration CX-Drive CX-Drive Peripheral port or RS-232C port CS/CJ-serial Serial Communications Board/ Unit Ver.



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.. Editing Drive Files ...

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.. 14 15 23 29 13 Starting the CX-Drive Section 2-1 2-1 Starting the CX-Drive Select Program - OMRON - CX-One - CX-Drive - CX-Drive from the Windows Start Menu to start the CX-Drive. (The path depends on where the CXDrive was installed.) Note When using the 3G3MV or 3G3RV as a DeviceNet slave, right-click the Inverter on the CX-Integrator network configuration, and select Start special application - Start with Settings Inherited from the pop-up menu. The following window will be displayed when the CX-Drive starts. 14 Creating New Drive Files Section 2-2 2-2 Creating New Drive Files There are two methods to create a new drive file in the Workspace. Method 1: Go online and automatically detect the connected drives to create the drive file. Method 2: Create a new data file without using a connected drive. 2-2-1 Method 1: Automatically Detecting the Connected Drives Serial Direct Connection 1,2,3.
.. 1. Select File - Autodetect. The Autodetect Dialog Box will be displayed and automatic detection will start. The detected drives will be displayed The detected drives are displayed in a list. 2. Select the drive from the list to create a new drive file in the Workspace. Automatically registered in the Workspace. 15 Creating New Drive Files Other Connections 1,2,3.



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.. Section 2-2 1. Select Tool - Options. Alternately click the Settings Button in the Autodetection Dialog Box The Options Dialog Box will be displayed. 2. Click the Autodetect Options Tab and then select one or more connection types other than Direct. For Inverters: · Via PLC (DeviceNet) · Via PLC (SCU/SCB) For Servos: · Via PLC (MCH/MECHATROLINK II) · Via PLC (NCF/MECHATROLINK II) · Via PLC (SCU/SCB) 3. Click the OK Button. 4.

Select File - Autodetect. 5. Click the Start Button in the Autodetection Dialog Box. The rest of the procedure is the same as for a direct serial connection. 16
Creating New Drive Files Section 2-2 2-2-2 Method 2: Creating a New Data File without a Connected Drive Select File - New. The following New Drive Dialog Box will be displayed. Drive Name Drive Type Any name may be input for the drive name. The default name is "Drive" plus a sequential number.
Drive Type Selection Select Inverter or Servo. Drive Type Name For an Inverter, select one of the following series from the pull-down list.
· 3G3JV · 3G3MV · 3G3RV (See note.) Note For version 1 of the 3G3RV, select 3G3RV, click the Settings Button and select -V1 from the Specification pull-down list. For a Servo, select one of the following series from the pull-down list. · R7D-AP: SMARTSTEP A Series · R88D-WN: MECHATROLINK-II W Series · R88D-WT: W Series Detailed Drive Settings Click the Settings..

· Button to open the Detail Setting Dialog Box. 17 Creating New Drive Files Inverters Inverter Series Dialog box 3G3JV 3G3MV Section 2-2 3G3RV Drive Type Installation A Type/Option Voltage Class Maximum Motor Capacity Specifications Options Option Board 1, 2, 4, B A, X 2, 4, B A, B, X 2, 4 001, 002, 004, 007, 015, 022, 001, 002, 004, 007, 015, 022, 004, 007, 015, 022, 037, 055, 037 037, 040, 055, 075 075, 110, 150, 185 -----3G3MV-PDRT2 None or V1 3G3RV-PDRT2 Servos Servo Series Dialog box R7D-AP R88D-WN R88D-WT Drive Type Maximum Motor Capacity Voltage Class Specifications A3 (30 W) to 08 (750 W) A5 (50 W) to 30 (3 kW) A3 (30 W) to 150 (15 kW) H (200 V), L (100 V) --- H (200 V), L (100 V) ML2 H (200 V), HF (400 V), HH (200 V), HL (150 V) --- 18 Creating New Drive Files Connection Type Connection Type Selection Section 2-2 Select one of the following connection types for the Connection Type. Inverters Connection type Direct Serial Connection CX-Drive Selection 3G3JV Direct Inverter Series 3G3MV 3G3RV Supported.

Supported. RS-232C Modbus-RTU Connector for Digital Operator Inverter PLC (Serial Communications Board/Unit) Connection CX-Drive CS/CJ-series Serial Communications Board/Unit Unit Ver. 1.2 or higher CS/CJ-series PLC RS-422A/485 Modbus-RTU Via PLC (SCU/SCB) Supported. Supported. Supported. RS-232C (Serial Gateway: Converts from FINS to Modbus.) Inverter PLC (DeviceNet Unit) Connection CX-Drive Via PLC (DeviceNet) Not Supported. Supported. supported.

CS/CJ-series DeviceNet Unit CS/CJ-series PLC RS-232C DeviceNet Inverter 19 Creating New Drive Files Servos Connection type Direct Serial Connection CX-Drive Section 2-2 Selection R7D-AP Direct Supported. Servo Series R88D-WN Not supported. R88D-WT Supported. RS-232C Special commands Servo PLC (Serial communications Board/Unit) Connection CX-Drive CS/CJ Serial Communications Board/Unit Unit Ver.1.2 or later CS/CJ Series PLC RS-232C or RS-422A/485 when connected to Servo Relay Unit Via PLC (SCU/SCB) Supported. Not supported. Supported. RS-232C (Serial gateway function: Converts FINS to Internal W commands.) Special commands Servo PLC (MCH Unit) MECHATROLINK-II Connection CS/CJ Series CX-Drive MECHATROLINK-II Via PLC Not (MCH/ supported.

MECHATROLINK-II) Supported. Motion Control Unit/ Position Control Unit CS/CJ Series PLC Supported with JUSPNS115 (FNYNS115). RS-232C MECHATROLINK-II Servo Servo PLC (NCF Unit) MECHATROLINK-II Connection Via PLC Not (NCF/ supported. MECHATROLINK-II) Supported. Supported with JUSPNS115 (FNYNS115).

20 Creating New Drive Files Network Settings Section 2-2 Click the Settings... Button to the right of the Connection Type Field. The following dialog box will be displayed.

Detailed Settings for Direct Connections Item Dialog box Network Tab Page Drive Tab Page Inverter · Slave Unit Address: 1 to 32 (Modbus-RTU slave address) (See note 1.) · Communications Timeout: 500 to 5,000 ms · Number of retries: 1 to 6 · Slave Unit Address: 0 to F (Servo Drive communications Unit No.) (See note 2.) · Communications Timeout: 500 to 5,000 ms · Number of retries: 1 to 6 · Port Selection: COM1, COM2, etc. · Baud Rate: 2400, 9600, 19200, or 38400 bits/s · Parity: None, Odd, or Even · Data bits: 7 or 8 · Stop bits: 1 or 2 · Port Selection: COM1, COM2, etc. · Baud Rate: 9600 or 19200 bits/s · Parity: None, Odd, or Even · Data bits: 7 or 8 · Stop bits: 1 or 2 Servo Via PLC (SCU/SCB) Connections (Except R88D-WN) Item Dialog box Network Tab Page Gateway PLC Tab Page Inverter Servo · Slave Unit Address: 1 to 32 (Modbus-RTU slave Click the Properties Button to set the PLC (with a address) (See note 1.) Serial Communications Unit/Board) to use as the gateway. · Master Unit Address: 0 to 15 (Unit address for Serial Communications Unit). Or select CS-Series Inner Board Option (Serial Communications Board). · Port Selection: Port 1 or Port 2 · Slave Unit Address: 0 to F (Servo Communications Unit No.

) (See note 2.) · Master Unit Address: 0 to 15 (Unit Address for Serial Communications Unit). Or select CS-Series Inner Board Option (Serial Communications Board). · Port Selection: Port 1 or Port 2 21 Creating New Drive Files Note Section 2-2 (1) Modbus-RTU Slave Address Setting: The Modbus-RTU slave address (01 to 32) is set in the following parameter using the Digital Operator on front of the Inverter before connecting the CX-Drive. Inverter Series Parameter No. 3G3JV n70 n153 3G3MV H5-01 3G3RV (2) The Servo Communications Unit No. (0 to F) is set using the following method before connecting the CX-Drive. Servo Series Method R7D-AP Unit number rotary switch on the Servo 3 R88D-WT Change to the Setting Mode using the Servo front panel settings and set the unit number in digit 2 of Pn000. Via PLC (DeviceNet) Connections (3G3MV, 3G3RV) Network Tab Page Gateway PLC Tab Page · Slave Unit Address: 0 to 63 (DeviceNet Click the Properties Button to set the slave address) PLC (with a DeviceNet Unit) to use as the · Master Unit Address: 0 to 15 (DeviceNet gateway. unit number) Via PLC (MCH/MECHATROLINK-II) or Via PLC (NCF/MECHATROLINK-II) (R88D-WN) Network Tab Page Gateway PLC Tab Page · Axis Number: 1 to 32 for MCH or 1 to 16 for NCF · Master Unit Address: 0 to 15 (MCH or NCF unit number) Click the Properties Button to set the PLC (with a MCH or NCF Unit) to use as the gateway.



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22 User Interface Section 2-3 2-3-1 User Interface Window Structure Workspace Windows Toolbar Output Window Status bar 2-3-2 Folder Parameter Editor Graphs Diagrams Status Monitor Tuning Settings Workspace Contents Edits the parameters of Inverters or Servos. Displays parameters graphically. Displays parameters in block diagrams. Displays online drive status. 3G3JV OK OK --OK Inverters 3G3MV OK OK OK OK OK OK 3G3RV OK OK OK OK OK OK R7D-AP OK ---OK OK OK OK Servos R88D-WN R88D-WT OK OK -----OK OK (See note).

) OK (See note.) OK (See note.) OK OK Enables realtime traces and other monitoring of online drives. Enables test runs and auto-tuning of OK online drives. Enables initializing online drives.

OK Note These functions are not supported when communicating via MECHATROLINK II. 23 User Interface Inverters Folder Parameter Editor 3G3JV · Initialize · Application · Tuning · Reference · Motor · Terminal · Protection · Operator · Monitor Constants 3G3MV · Initialize · Application · Tuning · Reference · Motor · Options · Terminal · Protection · Operator · Up 2/Down 2 · Monitor Constants · Analogue Output 1 · Frequency Reference Input · Jump Frequencies · Multifunction Analogue Current Input · Multifunction Analogue Voltage Input · V/F Profile · PID Control Loop · PID Target Value · PID Feedback Value · Digital Inputs · Digital Outputs · Inverter Status 1 · Status Signal · Alarms · Real Time Trace · Test Run · Initialize Section 2-3 3G3RV · Initialize · Application · Tuning · Reference · Motor · Options · Terminal · Protection · Special Adjustment · Operator · Motor Auto-tuning · Monitor Constants · Analogue Input 1 · Analogue Input 2 · Analogue Output 1 · Analogue Output 2 · Jump Frequencies · V/F Profile · V/F Profile Motor 2 · PID Control Loop Graphs · Analogue Input 1 · Analogue Output 1 · Jump Frequencies · V/F Profile Diagrams --- Status Monitor Tuning Settings · Digital Inputs · Digital Outputs · Inverter Status 1 · Status Signal · Alarms · Real Time Trace · Test Run · Initialize · Digital Inputs · Digital Outputs · Inverter Status 1 · Status Signal · Alarms · Real Time Trace · Test Run · Auto-tune · Initialize · Password Authorization 24 User Interface Servo Folder Parameter Editor R7D-AP · Other Constants · Function Selection Constants · Gain Related Constants · Position Related Constants · Speed Related Constants · Torque Related Constants · Sequence Related Constants R88D-WN · Function Selection Constants · Gain Related Constants · Position Related Constants · Speed Related Constants · Torque Related Constants · Sequence Related Constants · Regenerative Resistor Capacity · Motion Parameters · MECHATROLINK-II Constants --- Section 2-3 R88D-WT · Other Constants · Function Selection Constants · Gain Related Constants · Position Related Constants · Speed Related Constants · Torque Related Constants · Sequence Related Constant Diagrams --- Status · Input signals · Output signals · Motion Status · Alarms · Real Time Trace · Data Trace · Test Run · Auto Tune · Offset · Initialize · Password Authorization · Product Information --- · Position Block Diagram · Speed Block Diagram · Torque Block Diagram · Input signals · Output signals · Motion Status · Alarms · Real Time Trace · Data Trace · Test Run · Auto Tune · Offset · Absolute Encoder · Initialize · Module Detection Clear · Password Authorization · Product Information Monitor Tuning ----- Settings --- 25 User Interface Section 2-3 2-3-3 Menu File Menu Commands Submenu/Command New Autodetect Open Close Open Workspace Close Workspace Save Workspace Save as Workspace Save Save As Save All Print Print Preview Page Setup Contents Creates a new drive file. Detect drives automatically. Opens an existing drive file (.sdd), or monitor review file (.sdm). Closes an open drive file (.sdd). Opens an existing Workspace (.sdw).

Closes the active Workspace (.sdw). Saves the active Workspace (.sdw). Saves the active Workspace with a new name (.sdw). Saves an open drive file using its existing file name (.sdd). Saves an open drive file using a specified file name and directory (.sdd).

Saves all currently open drive files (.sdd). Prints the current drive file. Inverter OK OK OK OK OK OK OK OK OK OK OK OK Servo OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK -----Icon ----- Displays a print preview of the drive file in OK the active window. Changes printing options, such as margins, include drive information, drive type page heading, etc.

Imports a file from the specified directory. OK Exports the current drive file to a file in the OK specified directory as a CSV or text file. Opens a recent drive file. Opens a recent Workspace. Exits the CX-Drive.

Undoes the previous editing operation. Deletes data from the drive file and places it on the clipboard. Copies data from the drive file and places it on the clipboard. Pastes data from the clipboard into the drive file. Deletes selected data from the drive file. Selects all the data in the drive file. Searches for a specific item in the drive file. Shows or hides the toolbars (Standard, Modes, Drive, View, and Tools). OK OK OK OK OK OK OK OK OK OK OK OK Import Export Recent file Recent Workspace Edit Exit Undo Cut Copy Paste Delete Select All Find View Tool Bars Status Bar Workbook Mode Full Screen Output OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK ----- Shows or hides the status bar for the drive OK type name and other information. Shows the selected windows with tabs.

Displays the active view in full screen mode. Shows or hides the output window. OK OK OK 26 User Interface Menu View Submenu/Command Workspace Motor Operation Zoom Pan Mode Cursor Mode Show Parameter Labels Show Parameter Value Show Changes Only Show Differences Only Show Invalids Only Display Format Contents Shows or hides the Workspace window. Inverter Servo OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK Section 2-3 Icon --- Shows or hides the motor operation win- OK dow.



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Zooms in and out using a rectangle, initial OK setting, etc. Activates the full scroll mode. OK Activates the cursor mode. Shows or hides parameter labels. Shows or hides parameter values. Displays only parameters with modified values.

Displays only parameters with values different from the drive. OK OK OK OK OK ---- Displays only parameters with invalid values. Changes to one of the following display OK formats: Normal, High Low Text, Orange LED, Red LED, Green LED, or Blue LED. Edits the active drive properties. Connects to the drive.

Initializes the parameters of the drive to the default values. Sets the password for the drive. OK OK OK OK --- Drive Change Work Online Initialize Password Protection Parameter Editor Select Parameter Graph Reset Selection Reset All Save To FROM (for Servo via MCH only) Transfer To Drive From Drive Compare with Drive Selection To Drive Selection From Drive OK OK OK OK OK OK OK OK OK OK OK OK Opens the parameter editor view for the OK current drive. Opens the graphical editor containing the OK selected parameter. Resets the currently selected parameters.

OK Resets all parameters. Saves the parameters to the flash memory in the Servo via MCH. OK --- Downloads the complete parameter set to OK the drive. Uploads the complete parameter set from OK the drive. Uploads the parameters of the drive in the OK Drive Value Column to enabling comparing the parameter set. Downloads the selected parameters to the drive. OK OK OK ---OK OK OK OK OK OK --- Uploads the selected parameters from the drive. Alarms Opens the drive alarm window showing the current alarms and alarm trace. No Module Detection Clear Clears the A.E7 (No module detection) error.

Data Trace Configures and activates the Servo data trace function. Real Time Trace Displays the current values of the selected parameters. 27 User Interface Menu Drive Submenu/Command Test Auto-Tune Set Absolute Encoder Adjust Offsets Tools Product Information Database Upgrade Options Calculator Compare Drives Window Close All Cascade Tile Horizontally Tile Vertically Arrange Icons Help Help Topics Help Online Registration Omron on the web About CX-Drive Contents Performs a test run. Executes the auto-tuning function built into the drive. Configures a Servomotor absolute encoder. Configures Servo offsets. Displays product information. Upgrades the database to the latest version. Sets CX-Drive options. Displays the Microsoft calculator.

Displays the parameter differences between 2 drive files. Closes all open windows. Arranges windows as overlapping files. Arranges windows as horizontal, nonoverlapping tiles. Arranges windows as vertical, non-overlapping tiles.

Arranges the icons at the bottom of the window. Displays an index to topics on which help is available. @@Registers your application on the OMRON website. Opens the OMRON Corporate website. @@@@Use Autodetect to select the target drive.

@@Select and set each parameter. Double-click. Select or input each parameter value. All parameters displayed in numeric order. Parameter Editor in Functional Categories Double-click the category folder to open the Categorized Parameter Editor Window. Select and set each parameter. Double-click.

Select or input each parameter value. Comparing Drive and Parameter Data The comparison operation uploads drive parameters without changing parameter values in the file data. The Parameter Editor Window shows both the drive file and the file data at the same time, and indicates the differences.

: Default, : Default but different from the drive, : Not default and different from the drive. : Invalid, : Invalid and different from the drive. : Not default, 30 Editing Drive Files Section 2-4 2-4-2 Graphs Parameters can be displayed in graphic form for review (for Inverters only). Graphic displayed for specified parameter. Double-click. 2-4-3 Diagrams Parameters can be displayed in block diagrams for relevant parameters. Inverters support PID block diagrams, and Servos support position, speed and torque block diagrams. Block diagram displayed for specified parameter. Double-click. 31 Editing Drive Files Section 2-4 2-4-4 Status Displays The status of the online drive can be displayed.

Double-click. Performs status monitor for the connected drive. 2-4-5 Monitoring Realtime traces can be displayed for the selected parameters of the online drive. Data traces are also possible for the R7D-AP and R88D-WT Servos. Performs realtime trace of the specified parameter.

Double-click. 32 Editing Drive Files Section 2-4 2-4-6 Tuning Test runs can be performed for the online drive. The frequency reference, jog speed, acceleration time, and deceleration time on the graph can be changed by entering values directly or by dragging handles. Drag handles to change parameters. Performs test run for the online drive.

Double-click. For Servos, auto-tuning, motor current detect offset adjustments, and absolute multi-turn limit settings are also supported. 2-4-7 Settings The parameters of the online drive can be initialized, and password authorization can be set for some drive models. The parameters in the online drive can be initialized. Double-click. Also refer to the CX-Drive Online Help for operating procedures and functions. Select Help from the Help Menu or click the Button to display context help, which displays help about the currently displayed window. 33 Editing Drive Files Section 2-4 34 Revision History A manual revision code appears as a suffix to the catalog number on the front cover of the manual. Cat. No.

W453-E1-05 Revision code The following table outlines the changes made to the manual during each revision. Page numbers refer to the previous version. Revision code 01 02 03 04 Date Revised content November 2005 Original production January 2006 Pages xvi and 9: Caution on the use of the USB serial converter added. April 2006 July 2006 Caution on the use of the USB serial converter revised and revisions for product version 1 accompanying upgrade to CX-Drive version 1.12 added. Corrections accompanying upgrade from CX-Drive version 1.12 to 1.3. (Specifications changed from absolute path information for all drive data files in the workspace (file name extension .sdw) to relative path information.

) Corrections accompanying upgrade from CX-Drive version 1.3 to 1.4 (Windows Vista). 05 June 2007 35 Revision History 36 OMRON Corporation Control Devices Division H.Q.

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