



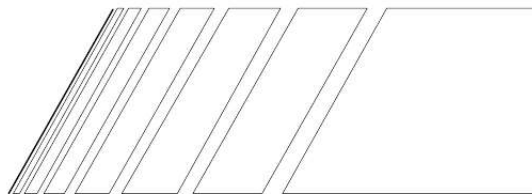
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You can read the recommendations in the user guide, the technical guide or the installation guide for OMRON SYSDRIVE 3G3JV. You'll find the answers to all your questions on the OMRON SYSDRIVE 3G3JV in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual OMRON SYSDRIVE 3G3JV
User guide OMRON SYSDRIVE 3G3JV
Operating instructions OMRON SYSDRIVE 3G3JV
Instructions for use OMRON SYSDRIVE 3G3JV
Instruction manual OMRON SYSDRIVE 3G3JV

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SETUP MANUAL

SYSDRIVE 3G3JV

Compact Simplified Inverters



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Manual abstract:

No. @@@@ to gain sufficient knowledge of the devices, safety information, and precautions before actual use. 2. The products are illustrated without covers and shieldings for closer look in this SETUP MANUAL and the USER'S MANUAL. For actual use of the products, make sure to use the covers and shieldings as specified. 3. This SETUP MANUAL and other related user's manuals are to be delivered to the actual end users of the products.

4. Please keep this manual close at hand for future reference.

5. If the product has been left unused for a long time, please inquire at our sales representative. NOTICE 1. This manual describes the functions of the product and relations with other products. You should assume that anything not described in this manual is not possible.

2. Although care has been given in documenting the product, please contact your OMRON representative if you have any suggestions on improving this manual. 3. The product contains potentially dangerous parts under the cover. Do not attempt to open the cover under any circumstances.

Doing so may result in injury or death and may damage the product. Never attempt to repair or disassemble the product. 4. We recommend that you add the following precautions to any instruction manuals you prepare for the system into which the product is being installed. S Precautions on the dangers of high-voltage equipment. S Precautions on touching the terminals of the product even after power has been turned OFF. (These terminals are live even with the power turned OFF.) 5. Specifications and functions may be changed without notice in order to improve product performance. Items to Check Before Unpacking Check the following items before removing the product from the package: S Has the correct product been delivered (i.

e., the correct model number and specifications)? S Has the product been damaged in shipping? S Are any screws or bolts loose? Notice: OMRON products are manufactured for use according to proper procedures by a qualified operator and only for the purposes described in this manual. The following conventions are used to indicate and classify precautions in this manual. Always heed the information provided with them. Failure to heed precautions can result in injury to people or damage to property. ! DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Additionally, there may be severe property damage. Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. Additionally, there may be severe property damage. Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

! WARNING ! Caution OMRON Product References All OMRON products are capitalized in this manual. The word "Unit" is also capitalized when it refers to an OMRON product, regardless of whether or not it appears in the proper name of the product. The abbreviation "Ch," which appears in some displays and on some OMRON products, often means "word" and is abbreviated "Wd" in documentation in this sense. The abbreviation "PC" means Programmable Controller and is not used as an abbreviation for anything else. Visual Aids The following headings appear in the left column of the manual to help you locate different types of information.

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! WARNING ! WARNING ! WARNING ! Caution Install external breakers and take other safety measures against short-circuiting in external wiring. Not doing so may result in fire. Confirm that the rated input voltage of the Inverter is the same as the AC power supply voltage. An incorrect power supply may result in fire, injury, or malfunction. Connect the Braking Resistor and Braking Resistor Unit as specified in the manual. Not doing so may result in fire. Be sure to wire correctly and securely. Not doing so may result in injury or damage to the product. Be sure to firmly tighten the screws on the terminal block.

Not doing so may result in fire, injury, or damage to the product. Do not connect an AC power to the U, V, or W output. Doing so may result in damage to the product or malfunction. Set the multi-function contact input parameter for NC contact terminals (e.g., 3-wire sequence) before wiring them. If the parameter's default setting is used, the motor may start running when the input terminal S2 is turned ON. **! Caution ! Caution ! Caution ! Caution ! Caution ! Caution** Operation and Adjustment Precautions **! WARNING** Turn ON the input power supply only after mounting the front cover, terminal covers, bottom cover, Operator, and optional items. Not doing so may result in electrical shock. Do not remove the front cover, terminal covers, bottom cover, Operator, or optional items while the power is being supplied.

Doing so may result in electrical shock or damage to the product. Do not operate the Operator or switches with wet hands. Doing so may result in electrical shock. Do not touch the inside of the Inverter. Doing so may result in electrical shock.

Do not come close to the machine when using the error retry function because the machine may abruptly start when stopped by an alarm. Doing so may result in injury. Do not come close to the machine immediately after resetting momentary power interruption to avoid an unexpected restart (if operation is set to be continued in the processing selection function after momentary power interruption is reset). Doing so may result in injury. **! WARNING ! WARNING ! ! WARNING WARNING ! WARNING ! WARNING** Provide a separate emergency stop switch because the STOP Key on the Operator is valid only when function settings are performed.

Not doing so may result in injury. **! WARNING** Be sure to confirm that the RUN signal is turned OFF before turning ON the power supply, resetting the alarm, or switching the LOCAL/REMOTE selector. Doing so while the RUN signal is turned ON may result in injury. **! Caution** Be sure to confirm permissible ranges of motors and machines before operation because the Inverter speed can be easily changed from low to high. Not doing so may result in damage to the product. **! Caution** Provide a separate holding brake when necessary. Not doing so may result in injury. **! Caution** Do not perform a signal check during operation. Doing so may result in injury or damage to the product. **! Caution** Do not carelessly change settings.

Doing so may result in injury or damage to the product. Maintenance and Inspection Precautions **! WARNING WARNING** Do not touch the Inverter terminals while the power is being supplied. **! Maintenance** or inspection must be performed only after turning OFF the power supply, confirming that the CHARGE indicator (or status indicators) is turned OFF, and after waiting for the time specified on the front cover. Not doing so may result in electrical shock. **! WARNING** Maintenance, inspection, or parts replacement must be performed by authorized personnel. Not doing so may result in electrical shock or injury. **! WARNING** Do not attempt to take the Unit apart or repair. Doing either of these may result in electrical shock or injury. **! Caution** Carefully handle the Inverter because it uses semiconductor elements. Careless handling may result in malfunction.

! Caution Do not change wiring, disconnect connectors, the Operator, or optional items, or replace fans while power is being supplied. Doing so may result in injury, damage to the product, or malfunction. Warnings for UL/cUL Marking · Do not connect or disconnect wiring, or perform signal checks while the power supply is turned ON. · The Inverter internal capacitor is still charged even after the power supply is turned OFF. To prevent electrical shock, disconnect all power before servicing the Inverter.

Then wait at least one minute after the power supply is disconnected and all indicators are OFF. · Do not perform a withstand voltage test on any part of the Inverter. This electronic equipment uses semiconductors and is vulnerable to high voltage. · Do not remove the Digital Operator or the blank cover unless the power supply is turned OFF. Never touch the printed control board (PCB) while the power supply is turned ON.

· The Inverter is not suitable for use on a circuit capable of delivering more than 5,000 RMS symmetrical amperes, 250 volts maximum (100-V-class Units). · Take measures against overcurrent, overload, and overheating by using the Motor Protection Settings. CAUTION Use 75°C copper wires or equivalent. Low voltage wires shall be wired with Class I Wiring. H Motor Protection Settings Rated Motor Current (n32) · Set the rated motor current (n32) in order to prevent the motor from burning due to overloading. · Check the rated current on the motor nameplate and set the parameter. · This parameter is used for the electronic thermal function for motor overload detection (OLI). By setting the correct parameter, the overloaded motor will be protected from burning. n32 Setting range Rated Motor Current 0.0% to 120% (A) of rated output current of Inverter Unit of setting 0.

I A Changes during operation Default setting No (see note 1) Note 1. The standard rated current of the maximum applicable motor is the default rated motor current. Note 2. Motor overload detection (OLI) is disabled by setting the parameter to 0.0. Motor Protection Characteristics (n33 and n34) · This parameters setting is for motor overload detection (OLI). n33 Setting range Motor Protection Characteristic Selection 0 to 2 Unit of setting 1 Changes during operation Default setting No 0 D Set Values Value 0 1 2 Description Protection characteristics for general-purpose induction motors Protection characteristics for Inverter-dedicated motors No protection · This parameter is used to set the electric thermal characteristics of the motor to be connected. · Set the parameter according to the motor. · If a single Inverter is connected to more than one motor, set the parameter to 2 for no protection. The parameter is also disabled by setting n32 for rated motor current to 0.

0. Provide thermal relays or other methods separately for each motor to protect equipment from overloads. n34 Setting range Motor Protection Time 1 to 60 (min) Unit of setting 1 min Changes during operation Default setting No 8 D Set Values · This parameter is used to set the electronic thermal protection constant of motor overload detection OLI.



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8 H Installation Direction and Dimensions · Install the Inverter under the following conditions. Humidity: 95% or less (no condensation) · Install the Inverter in a clean location free from oil mist and dust. Alternatively, install it in a totally enclosed panel that is completely protected from floating dust. · When installing or operating the Inverter, always take special care so that metal powder, oil, water, or other foreign matter does not get into the Inverter. · Do not install the Inverter on inflammable material such as wood. Ambient temperature for operation (panel-mounting): 10°C to 50°C H Direction · Install the Inverter on a vertical surface so that the characters on the nameplate are oriented upward. 1-2 Design H Dimensions Chapter 1 · When installing the Inverter, always provide the following clearances to allow normal heat dissipation from the Inverter. W = 30 mm min. 100 mm min. Air Inverter Inverter Inverter Side 100 mm min.

Air H Ambient Temperature Control · To enhance operation reliability, the Inverter should be installed in an environment free from extreme temperature changes. · If the Inverter is installed in an enclosed environment such as a box, use a cooling fan or air conditioner to maintain the internal air temperature below 50°C. The life of the built-in electrolytic capacitors of the Inverter is prolonged by maintaining the internal air temperature as low as possible. · The surface temperature of the Inverter may rise approximately 30°C higher than the ambient temperature. Be sure to keep away equipment and wires from the Inverter as far as possible if the equipment and wires are easily influenced by heat.

H Protecting Inverter from Foreign Matter during Installation · Place a cover over the Inverter during installation to shield it from metal power produced by drilling. Upon completion of installation, always remove the cover from the Inverter. Otherwise, ventilation will be affected, causing the Inverter to overheat.

1-3 Design 1-1-2 Removing and Mounting the Covers Chapter 1 It is necessary to remove the front cover, optional cover, top protection cover, and the bottom protection cover from the Inverter to wire the terminal block. Follow the instructions below to remove the covers from the Inverter.

To mount the covers, take the opposite steps. H Removing the Front Cover · Loosen the front cover mounting screws with a screwdriver. · Press the left and right sides of the front cover in the arrow 1 directions and lift the bottom of the cover in the arrow 2 direction to remove the front cover as shown in the following illustration. H Removing the Top and Bottom Protection Covers and Optional Cover D Removing the Top and Bottom Protection Covers · After removing the front cover, pull the top and bottom protection covers in the arrow 1 directions.



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1-4 Design D Removing the Optional Cover Chapter 1 After removing the front cover, lift the optional cover in the arrow 2 direction based on position A as a fulcrum. Note The front cover functions as a terminal cover. The Digital Operator cannot be removed. 1-5 Design 1-2 Wiring Chapter 1 1-2-1 Terminal Block Before wiring the terminal block, be sure to remove the front cover, top protection cover, and the bottom protection cover. H Position of Terminal Block Ground terminal Main circuit input terminals Control circuit terminals Main circuit output terminals Ground terminal H Arrangement of Control Circuit Terminals 1-6 Design H Arrangement of Main Circuit Terminals D 3G3JV-A1001, -A1002 Main Circuit Input Terminals (Upper Side) Chapter 1 Main Circuit Output Terminals (Lower Side) H Main Circuit Terminals Symbol R/L1 S/L2 U/T1 V/T2 W/T3 Name Power supply input pp y p terminals i li Motor output terminals p Description 3G3JV-A1j: Single-phase 100 to 115 V AC gp Note Connect single-phase input to terminals R/L1 and S/L2. 3-phase power supply output for driving motors.

pp pp y p g 3G3JV A1j: 3-phase 3G3JV-A1j: 3 phase 200 to 230 V AC Ground terminal Be sure to ground the terminal under the following conditions. 3G3JV-A1j: Ground at a resistance of 100 or less, and connect to the power supply's neutral phase to conform to EC Directives. Note Be sure to connect the ground terminal directly to the motor frame ground. Note The maximum output voltage corresponds to the power supply input voltage of the Inverter. 1-7 Design H Control Circuit Terminals Symbol Input S1 S2 S3 S4 Name Forward/Stop Multi-function input 1 (S2) Multi-function input 2 (S3) Multi-function input 3 (S4) Multi-function input 4 (S5) Sequence input common Chapter 1 Function Signal level Forward at ON. Stops at Photocoupler 8 mA at 24 V DC OFF. NPN is the default setting for these terminals. Wire them by providing a th b idi Set by parameter n37 common ground. No (Fault reset) external power supply is Set by parameter n38 required. To provide an (External fault: Normally external power supply and open) g wire the terminals through a common positive line, i i li Set by parameter n39 however, set the SW7 to (Multi-step reference 1) PNP and make sure that Common for S1 through the power supply is at S5 24 V DC $\pm 10\%$.

DC power supply for fre- 20 mA at 12 V DC quency reference use 0 to 10 V DC Input terminal for fre(input impedance: 20 k) (p p 0) quency reference use Common for frequency reference use Set by parameter n40 Relay output (during running) 1 A max. at 30 V DC (g g) C 1 A max. at 250 V AC Set by parameter n36 (Reverse/Stop) Note S5 SC FS FR FC Output MA MB MC AM AC Frequency reference power supply Frequency reference input Frequency reference common Multi-function contact output (Normally open) Multi-function contact output (Normally closed) Multi-function contact Common for MA and output common MB use Analog monitor output Set by parameter n44 (Output frequency) Analog monitor output Common for AM use common 2 mA max. at 0 to 10 V DC Note 1. Depending on the parameter settings, various functions can be selected for multi-function inputs and multi-function contacts outputs. Note 2. Functions in parentheses are default settings. H Selecting Input Method Switches SW7 and SW8, both of which are located above the control circuit terminals, are used for input method selection. Remove the front cover and optional cover to use these switches. Selector Control circuit terminal block 1-8 Design By using SW7, NPN or PNP input can be selected as shown below.

Chapter 1 D Selecting Sequence Input Method SW7 SW7 D Selecting Frequency Reference Input Method Frequency reference input method Voltage input Current input SW8 setting V (OFF) I (ON) Frequency reference selection (parameter n03) Set value 2 Set value 3 or 4 1-9 Design 1-2-2 Standard Connections DC reactor (optional) Noise Filter Chapter 1 3-phase 200 V AC Single-phase 100 V AC Forward/Stop Multi-function input 1 (Reserve/Stop) Multi-function input 2 (S3) (Fault Reset) Multi-function input 3 (S4) (External fault Normally open) Multi-function input 4 (S5) (Multi-step speed reference 1) Multi-function contact output NO NC Common Sequence input common Frequency reference power supply 20 mA at +12 V FREQ adjuster Frequency reference input Frequency reference common Analog monitor output Analog monitor output common (2 k, 1/4 W min.) Note 1. The braking resistor cannot be connected because no braking transistor is incorporated. Note 2. A DC Reactor can be connected in series between the R input and L1 terminal or between the S input and L2 terminal to use it as an AC reactor. D DC Reactor Wiring Example Noise Filter DC Reactor Single-phase 100 V AC Applicable Noise Filters Inverter 3G3JV-A1001 3G3JV-A1002 Applicable Filter 3G3JV-PRS1010J (for i h 0.1 (f either 0.1 kW or 0.2 kW) 0.2 Specifications 10 A at 250 V AC, single-phase , gp Applicable DC Reactors Inverter 3G3JV-A1001 3G3JV-A1002 Applicable Reactor 3G3HV-PUZDAB5.4A8MH 3G3HV-PUZDAB18A3MH Specifications 5.4 A, 8 mH 18 A, 3 mH 1-10 Design D Example of 3-wire Sequence Connections Stop switch (NC) RUN switch (NO) Chapter 1 RUN input (Operates with the stop switch and RUN switch closed.)

) Stop input (Stops with the stop switch opened.) Direction switch Forward/Stop reference (Forward with the direction switch opened and reverse with the direction switch closed.) Sequence input common Note Set parameter n37 for 3-wire sequence input. 1-2-3 Wiring around the Main Circuit H Wire Size, Terminal Screw, Screw Tightening Torque, and Molded-case Circuit Breaker Capacities For the main circuit and ground, always use 600-V polyvinyl chloride (PVC) cables. If any cable is long and may cause voltage drops, increase the wire size according to the cable length. D Single-phase 100-V AC Model Model 3G3JV Terminal symbol Terminal screw Screw tightening torque (NSm) 0.8 to 1.0 0.8 to 1.0 Wire size (mm2) Recommended wire size (mm2) A1001 A1002 R/L1, S/L2, U/T1, V/T2, W/T3 R/L1, S/L2, U/T1, V/T2, W/T3 M3. 5 M3.5 0.75 to 2 0.75 to 2 2 2 H Wiring Control Circuit Terminal symbol Terminal screw M3 Screw tightening torque NSm (lbSin) 0.5 to 0.6 (4.4 to 5.3) Wire size mm2 (AWG) Stranded wire: 0.5 to 1.25 (20 to 16) Single wire: 0.5 to 1.25 (20 to 16) Recommended wire size mm2 (AWG) 0.75 (18) MA, MB, MC S1 to S5, SC, FS, FR, FC, AM, AC M2 0.22 to 0.25 (2 to 2.2) 0.

75 (18) 1-11 Design 1-2-4 Optional Accessories Option EMC-compliant p Noise Filter N i Fil DC Reactor DIN Track Mounting Bracket Adapter Panel p Operator Cable p Digital Operator g p Specifications For A1001 For A1002 For A1001 For A1002 --Standard installation Removable 1m 3m Without adjuster (with case) With adjuster j Main Unit Case Chapter 1 Model 3G3JV-PRS1010J 3G3HV-PUZDAB5.4A8MH 3G3HV-PUZDAB18A3MH 3G3IV-PEZZ08122A 3G3IV-PSI232J 3G3IV-PSI232JC 3G3IV-PCN126 3G3IV-PCN326 3G3IV-PJVOP146 3G3IV-PJVOP140 3G3IV-PEZZ08386 1-12 Design 1-3 Power supply l Chapter 1 Specifications 3G3JV-A1001 3G3JV-A1002 Single-phase 100 to 115 V AC at 50/60 Hz 15 to 10% $\pm 5\%$ 3.



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2 6.2 14.6 21.1 0.5 0.8 Natural cooling 0.1 0.2 0.3 0.

6 0.8 1.6 Three-phase 200 to 230 V (Handles twice the input voltage.) Maximum output frequency 400 Hz (Set in a parameter.) Control Power supply harmonics counter- DC Reactor (optional) can be connected.

character- measures istics Control method Sine wave PWM (V/f control) Carrier frequency 2.5 to 10.0 kHz (Switched in steps.) Frequency control range 0.1 to 400 Hz Frequency p q y precision (temperap Digital reference: $\pm 0.01\%$ (10 to 50°C) ture characteristics) h ii) Analog reference: $\pm 0.5\%$ (25°C $\pm 10^\circ\text{C}$) Frequency setting resolution Digital reference: 0.1 Hz (less than 100 Hz), 1 Hz (100 Hz or greater) Analog reference: 0.06 Hz/60 Hz (equivalent to 1/1000) Output frequency resolution 0.01 Hz (data processing resolution)

Overload capacity 150% of rated output current for 1 min External frequency set signal Switchable: 0 to 10 V DC (20 k), 4 to 20 mA (250), 0 to 20 mA (250), or frequency adjustment Acceleration/deceleration times 0.0 to 999 s (Acceleration and deceleration times set separately: Switches between 2 settings.) Braking torque Approx. 20% Note: A Braking Resistor or Braking Resistor Unit cannot be connected. Voltage/frequency characteristics User-set V/f pattern

100-V AC Models Rated voltage and power supply Allowable voltage fluctuation Allowable frequency fluctuation Input current (for rated output) (A) Heating radiation (W) Weight (kg) Cooling method Maximum motor capacity (kW) Output p Rated output capacity (kVA) specifica- Rated output current (A) ifi tions Rated output voltage (V) 1-13 Design 100-V AC Models Protective Motor protection f i functions Instantaneous overcurrent protection Overload protection Overvoltage protection Undervoltage protection Momentary power interruption compensation (selection) Chapter 1 3G3JV-A1001 3G3JV-A1002 Protection by electronic thermal Stops at approx. 250% of rated output current.

Stops in 1 min at approximately 150% of rated output current. Stops when main-circuit DC voltage is approximately 410 V. Stops when main-circuit DC voltage is approximately 160 V. None (Stops at 15 ms or longer.) Select between continuing operation if power is restored within approx. 0.5 s or continuing operation regardless of length of interruption. Detected at 110°C $\pm 10^\circ\text{C}$ Rated output current level protection CHARGE indicator lights until the main circuit DC voltage reaches 50 V or less. Indoors (with no corrosive gas, dust, etc.) 10 to 50°C 95% max.

(with no condensation) 20 to 60°C 1,000 m max. 5 M min. (Do not carry out any insulation resistance or withstand voltage tests.) 9.8 m/s² max. between 10 and 20 Hz, 2.0 m/s² max. between 20 and 50 Hz Mounted in a panel (equivalent to IP20) Radiation fin overheated Grounding protection Charge indicator Environment Location Ambient operating temperature Ambient operating humidity Storage temperature Altitude Insulation resistance Vibration resistance Degree of protection 1-14 2 Chapter 2 Preparing for Operation and Monitoring 2-1 2-2 Using the Digital Operator Copying and Verifying Parameters Preparing for Operation and Monitoring 2-1 Using the Digital Operator Chapter 2 2-1-1 Nomenclature Data display Indicators Setting/Monitor item indicators Keys **FREQ** adjuster Appearance Name Data display Function Displays relevant data items, such as frequency reference, output frequency, and parameter set values. Sets the frequency reference within a range between 0 Hz and the maximum frequency. **FREQ** adjuster **FREF** indicator **FOUT** indicator **IOUT** indicator **MNTR** indicator **F/R** indicator **LO/RE** indicator The frequency reference can be monitored or set while this indicator is lit.

The output frequency of the Inverter can be monitored while this indicator is lit. The output current of the Inverter can be monitored while this indicator is lit. The values set in U01 through U10 are monitored while this indicator is lit. The direction of rotation can be selected while this indicator is lit, when operating the Inverter with the **RUN** Key. The operation of the Inverter through the Digital Operator or according to the parameters set is selectable while this indicator is lit. Note This status of this indicator can be only monitored while the Inverter is in operation. Any **RUN** command input is ignored while this indicator is lit.

The parameters in n01 through n79 can be set or monitored while this indicator is lit. Note While the Inverter is in operation, the parameters can be only monitored and only some parameters can be changed. The **RUN** command input is ignored while this indicator is lit.

Switches the setting and monitor item indicators in sequence. Parameter setting being made is canceled if this key is pressed before entering the setting. Increases multi-function monitor numbers, parameter numbers, and parameter set values. **PRGM** indicator Mode Key Increment Key 2-2 Preparing for Operation and Monitoring Appearance Name Decrement Key Enter Key Chapter 2 Function Decreases multi-function monitor numbers, parameter numbers, and parameter set values. Enters multi-function monitor numbers, parameter numbers, and internal data values after they are set or changed. Starts the Inverter running when the 3G3FV is in operation with the Digital Operator. Stops the Inverter unless n06 is set to disable the **STOP** Key. Functions as a Reset Key when an Inverter error occurs. (See note.) **RUN** Key **STOP/RESET** Key Note For safety's reasons, the reset will not work while a **RUN** command (forward or reverse) is in effect.

Wait until the **RUN** command is **OFF** before resetting the Inverter. 2-3 Preparing for Operation and Monitoring Chapter 2 2-1-2 Accepting Operation Commands While Changing Parameters With the default settings, the Inverter will not accept operation commands when parameter settings are being changed. This functions as a safety measure to prevent the motor from rotating if the operation command is mistakenly set to **ON** when changing parameters. Depending on the operating conditions, however, the user may want to have operation commands accepted even while parameters are being changed. In that case, change the following settings.

H Using the Indicators to Determine When Operation Commands Can Be Accepted The indicators on the Digital Operator can be used to determine if operation commands will be accepted or not while changing parameters. Green: Operation commands will be accepted if the indicator lights green. Red: Operation commands will not be accepted after the Inverter stops if an indicator lights red. Therefore, if the indicator lights red when changing parameters or when switching between local and remote operation, operation will continue, but once the Inverter stops, the Inverter will not operate even if the operation command is set to **ON** again. The **FREF** indicator will light when the power supply is turned **ON**.

Indicator Color Name Acceptance of operation commands During Stopped operation Yes Yes **FREF** **FOUT** **IOUT** **MNTR** **F/R** **LO/RE** **PRGM** Green Green Green Green Green Red Red Frequency Reference/Monitor Output Frequency Monitor Output Current Monitor Multifunction Monitor Operator **RUN** command forward/reverse operation selection Local/Remote Selection Parameter Number/Setting Yes No ((See note.



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)) Note Perform the settings given in the following description to have operation commands accepted while the red indicator is lit (i.e., while changing parameters or switching between local and remote.) Set n01 (Parameter writeprohibit selection/parameter initialization) to 5. S The default value for n01 is 1. S Operation commands will not be accepted when n01 itself is being changed. S Some parameters cannot be changed during operation. Those parameters cannot be changed during operation even if the setting for n01 is changed. S When n01 is changed to 5, an operation command will be accepted even when changing parameters, such as during trial operation.

Thoroughly check safety before changing any setting. 2-4 Preparing for Operation and Monitoring 2-1-3 Outline of Operation H Selecting Indicators Chapter 2 Whenever the Mode Key is pressed, an indicator is lit in sequence beginning with the FREF indicator. The data display indicates the item corresponding to the indicator selected. The FOUT or IOUT indicator will be lit by turning the Inverter on again if the Inverter is turned off while the FOUT or IOUT indicator is lit. The FREF indicator will be lit by turning the Inverter on again if the Inverter is turned off while an indicator other than the FOUT or IOUT indicator is lit. Power On FREF (Frequency Reference) Monitors and sets the frequency reference. FOUT (Output Frequency) Monitors the output frequency. Note This indicator will be lit by turning the Inverter on again if the Inverter is turned off while this indicator is lit. IOUT (Output Current) Monitors the output current.

Note This indicator will be lit by turning the Inverter on again if the Inverter is turned off while this indicator is lit.

MNTR (Multi-function Monitor) Monitors the values set in U01 through U10. F/R (Forward/Reverse Rotation) Selects the direction of rotation. LO/RE (Local/Remote) Selects the operation of the Inverter through the Digital Operator or according to the parameters. PRGM (Parameter Setting) Monitors or sets the values in n01 through n79. The FREF indicator is lit again.

2-5 Preparing for Operation and Monitoring H Example of Multi-function Display Chapter 2 Key sequence Indicator Display Power On Explanation Press the Mode Key repeatedly until the MNTR indicator is lit. U01 will be displayed. Use the Increment or Decrement Key to select the monitor item to be displayed. Press the Enter Key so that the data of the selected monitor item will be displayed. The monitor number display will appear again by pressing the Mode Key.

D Status Monitor Item U01 U02 U03 U04 U05 U06 Display Frequency reference Output frequency Output current Output voltage DC bus voltage Input terminal p status Display unit Hz Hz A V V --Function Monitors the frequency reference. (Same as FREF) Monitors the output frequency. (Same as FOUT) Monitors the output current. (Same as IOUT) Monitors the internal output voltage reference value of the Inverter. Monitors the DC voltage of the internal main circuit of the Inverter. Shows the ON/OFF status of inputs. : Input ON : No input Not used Terminal S1: Forward/Stop Terminal S2: Multi-function input 1 (S2) Terminal S3: Multi-function input 2 (S3) Terminal S4: Multi-function input 3 (S4) Terminal S5: Multi-function input 4 (S5) U07 Output terminal p status --- Shows the ON/OFF status of outputs. : Closed Not used : Open Terminal MA: Multi-function contact output U09 Error log (most g(recent one) --- Displays the latest error. Error U10 U15 Software No. Receive data error ---- OMRON use only.

The cause of the receive data error during MEMOBUS communications can be checked. (Same as the contents of communications register number 003DM.)

2-6 Preparing for Operation and Monitoring 2-2 Copying and Verifying Parameters Chapter 2 The 3G3IV-PJVOP140 and 3G3IV-PJOP146 Digital Operators contain an EEPROM. All Inverter parameter settings, the Inverter capacity, and the software number are recorded in this EEPROM. The EEPROM can be used to copy parameter settings to other Inverters. Parameter settings can be copied between Inverters with the same power supply specifications, but some of the parameter settings are not copied. 2-2-1 Parameters Used to Copy and Verify Parameters · The following parameters are used to read, copy (write), and verify parameter settings. ParamName Description eter No. (Register No. (Hex)) n76 Parameter Selects the function for copying parameters.

(014C) copy and rdy: Ready to accept the next command. verify funcrED: Reads the Inverter parameters. tion Cpy: Copies the parameter to the Inverter. vFY: Verifies the Inverter parameters. vA: n77 (014D) Checks the Inverter capacity display.

0, 1 --0 No Sno: Checks the software number. Parameter Selects the copy-prohibit function. read proUse this parameter to protect the data in the hibit selec-EEPROM of the Digital Operator. tion 0: Read prohibited for Inverter parameters. (Data cannot be written to EEPROM.

) 1: Read possible for Inverter parameters. (Data can be written to EEPROM.) Setting Setting Default Changes range unit setting during operation rdy to Sno --- rdy No 2-7 Preparing for Operation and Monitoring H Display Transitions Reading finished Writing finished Verification finished Chapter 2 Reading OR Writing OR Verifying OR Inverter capacity OR Software number OR Note The following display is an example of the capacity displayed. The values in parentheses indicate the capacities for European motors. 10.1 Voltage Class 1: Single-phase 100 V Max. applicable motor capacity 0.1: 0.1 kW (0.1 kW) 0.

2: 0.25 kW/0.37 kW (0.2 kW) Note The values in parentheses indicate Japanese motor capacities. 2-8 Preparing for Operation and Monitoring 2-2-2 Outline of Copying Parameters (1) Check setting of n01 0: Writing from Digital Operator prohibited. 1: Parameters can be changed (default setting). Set n01 to 1.

Chapter 2 See operation on next page. (2) Clear prohibition of reading the copy function: n77 This function protects parameters stored in the Digital Operator. 0: Reading copy function (rEd) prohibited (default setting).

1: Reading copy function (rEd) enabled. Set n77 to 1. Same basic operation as for n01. (3) Perform the read operation for the copy function: n76 Read (rEd) the current parameter settings from the Inverter to the EEPROM in the Digital Operator. Set n76 to rEd.

(4) Disconnect the Digital Operator and connect it to a different Inverter. Always turn OFF the power supply before connecting or disconnecting the Digital Operator to protect against electric shock and product failure. Change Inverter connection. Turn ON power after checking wiring. (5) Perform the write operation for the copy function: n76 Write (CPy) the current parameter settings from the EEPROM in the Digital Operator to the Inverter.

Set n76 to CPy. (6) Perform the verify operation for the copy function: n76 Verify (vFY) the current parameter settings between the EEPROM in the Digital Operator and the Inverter.



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Set n76 to vFy. H Parameters That Cannot Be Copied 1. Copying is not possible between Inverters with different power supply specifications (e.g., from a 100-V Inverter to a 400-V Inverter). 2. The recorded hold output frequency and the following parameters cannot be copied: n76: Parameter copy and verify function n77: Parameter read prohibit selection n78: Error log n79: Software number 3. The following parameters cannot be copied if the Inverters have different capacities.

n09 to n15: V/f settings n32: Rated motor current n46: Carrier frequency selection 2-9 Preparing for Operation and Monitoring n64: Motor rated slip n65: Motor no-load current Chapter 2 2-2-3 Procedures Changing Parameters The setting of n01 is changed so that n76 and n77 can be displayed. D Setting n01 (Parameter Write-prohibit Selection/Parameter Initialization Parameter) Key --Indicator Display Description (Display after the power supply is turned ON.)

Press the Mode Key until the PRGM indicator lights. Confirm that n01 is displayed on the data display. Press the Enter Key. The setting of the specified parameter number will be displayed. Press the Increment Key until 4 is displayed. (The display will flash.) Press the Enter Key to confirm the setting. (The display will stop flashing.

) After about 1 s The display of the parameter number will return in about 1 s. 2-10 Preparing for Operation and Monitoring Example of Copy Function H Verifying Parameters (vFy) Chapter 2 · The Parameter Copy and Verify Function (n76) can be set to "vFy" to compare the parameter settings in the Digital Operator with those in the Inverter. D Verifying Parameters Key --Indicator Display Description (Display after the power supply is turned ON.) Press the Mode Key until the PRGM indicator lights. Confirm that n01 is displayed on the data display.

Press the Increment/Decrement Key until "n76" is displayed. Press the Enter Key. "rdy" will be displayed. Press the Increment Key until "vFy" is displayed. Press the Enter Key. The parameter settings will be compared and the display will flash.

The parameter number of any parameter that has different settings will be displayed. Press the Enter Key. The setting of the parameter in the Inverter will be displayed (flashing) first. Press the Enter Key again. The setting of the parameter in the Digital Operator will be displayed (flashing) next. Press the Increment Key. The comparison will be continued. (After comparison is finished.) or "End" will be displayed when the comparison has been finished. Press the Mode Key or Enter Key.

The display of the parameter number will return. 2-11 Preparing for Operation and Monitoring Chapter 2 2-2-4 Error Messages for Copying and Verifying Parameters The errors that can be displayed when reading, writing, or verifying parameter settings are described in the following table along with corrective actions. All of these error displays will flash on the display. Display Name Protect error pre Description An attempt was made to read parameter settings when the Parameter Read Prohibit Selection parameter (n77) was set to 0 (prohibiting reading). The parameter settings could not be read normally or a low main circuit voltage was detected while reading parameter settings. A checksum error occurred for the parameters recorded in the Digital Operator. No parameters are recorded in the Digital Operator. Copying or verifying parameter settings was attempted between Inverters with different voltage classes. A low main circuit voltage was detected while reading parameter settings. Verification was attempted between Inverters of different capacities.

Corrective action Confirm that it is necessary to read the parameter settings. If it is, change the Parameter Read Prohibit Selection parameter (n77) to 1 (enabling reading). Check the main circuit voltage and then attempt reading again. rde Read error cse ndt cpe Checksum error Read the parameter settings again to record them in the Digital Parameter. Read the parameter settings to record them in the Digital Parameter.

Check the voltage classes. (They must both be the same to copy parameter settings.) Check the main circuit voltage and then attempt copying again. Press the Enter Key to continue the comparison. Press the STOP/RESET Key to cancel the comparison.

Check the connection between the Inverter and the Digital Operator. Correct any problems and then repeat the operation. No data error Copy source error cye Ure Voltage error while copying Capacity error ife Communications error A communications error occurred between the Inverter and Digital Operator.

2-12 3 Chapter 3 List of Parameters Parameter Name No. (Register No. (Hex)) n01 Parameter (0101) writeprohibit selection/parameter initialization Description Setting range Default setting Chapter 3 Changes during operation No Memo Used to prohibit parameters to be written, sets parameters, or change the monitor range of parameters. Used to initialize parameters to default values. 0: Sets or monitors parameter n01. Parameters n02 through n79 can be monitored only. 1: Sets or monitors parameters n01 through n79.

5: Operation commands can be accepted at any time (n01 to n79 can be set or referenced). (See note.) 6: Clears the error log. 8: Initializes parameters to default values in 2-wire sequence. 0, 1, 6, 8, 9 1 n02 (0102) Operation command selection 9: Initializes parameters to default values in 3-wire sequence. Note Operation commands will be ignored in Program Mode (refer to 2-1-2) when n01 is set to 0 or 1. Normally set n01 to 0 or 1. Used to select the input method for 0 to 2 the RUN and STOP commands in remote mode. 0: The RUN and STOP/RESET Keys on the Digital Operator are enabled. 1: Multi-function inputs through the control circuit terminals in 2- or 3-wire sequence.

2: Operation commands via RS-422A/485 communications are enabled. Note The RUN command only through key sequences on the Digital Operator is acceptable in local mode. 0 No 3-2 List of Parameters Parameter Name No. (Register No. (Hex)) n03 Frequency (0103) reference selection Description Setting range Default setting Chapter 3 Changes during operation No Memo Used to set the input method for the 0 to 4, 6 frequency reference in remote mode.

0: Digital Operator 1: Frequency reference 1 (n21) 2: Frequency reference control circuit terminal (0 to 10 V) 3: Frequency reference control circuit terminal (4 to 20 mA) 4: Frequency reference control circuit terminal (0 to 20 mA) 6: Frequency reference via RS-422A/485 communications 0 n04 (0104) Interruption mode selection Used to set the stopping method for use when the STOP command is input. 0: Decelerates to stop in preset time. 1: Coasts to stop (with output shut off by the STOP command) Used to select the operation with the reverse command input. 0: Reverse enabled. 1: Reverse disabled.

0, 1 0 No n05 (0105) Reverse rotationprohibit selection STOP/RESET Key function selection 0, 1 0 No n06 (0106) Used to select the stop method in re- 0, 1 mote mode with n02 for operation mode selection set to 1.



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