

## 3g3fv manual

Cat. No. 016E1-3

OMRON



USER'S MANUAL

**File Name:** 3g3fv manual.pdf

**Size:** 4070 KB

**Type:** PDF, ePub, eBook

**Category:** Book

**Uploaded:** 28 May 2019, 16:37 PM

**Rating:** 4.6/5 from 652 votes.

**Status:** AVAILABLE

Last checked: 16 Minutes ago!

**In order to read or download 3g3fv manual ebook, you need to create a FREE account.**

**SYSDRIVE 3G3FV**  
High-function General-purpose Inverter

[\*\*Download Now!\*\*](#)

eBook includes PDF, ePub and Kindle version

[Register a free 1 month Trial Account.](#)

[Download as many books as you like \(Personal use\)](#)

[Cancel the membership at any time if not satisfied.](#)

[Join Over 80000 Happy Readers](#)

### Book Descriptions:

We have made it easy for you to find a PDF Ebooks without any digging. And by having access to our ebooks online or by storing it on your computer, you have convenient answers with 3g3fv manual . To get started finding 3g3fv manual , you are right to find our website which has a comprehensive collection of manuals listed.

Our library is the biggest of these that have literally hundreds of thousands of different products represented.



## Book Descriptions:

# 3g3fv manual

Proper use and handling of the product will ensure proper product performance, will length product life, and may prevent possible accidents. Please read this manual thoroughly and handle and operate the product with care. 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". Consult your OMRON representative when using the product after a long period of storage. **WARNING** Do not touch the inside of the Inverter. Doing so may result in electrical shock. Doing so may result in injury. **Caution** Do not pull on the cables. Doing so may result in damage to the product or malfunction. Not doing so may result in fire. **Caution** 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. **Caution** Connect the Braking Resistor and Braking Resistor Unit as specified in the manual. 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. Be sure to follow the instructions given there. **H Warning Labels H Contents of Warning.** Should you find any problems with the product, immediately contact your nearest local sales representative. **Checking the Nameplate Inverter model 3G3FVA2001 Input specifications.** Information is organized by application area to enable you to use the manual more efficiently. **Chapter Contents Chapter 1 Overview** Describes features and nomenclature. Also describes new functions. **Chapter 2 Installation** Provides information required for system design, such as product dimensions, installation dimensions, peripheral device design. An autotuning function allows for easy vector control. <http://www.varanini.pl/userfiles/colt-rifle-manuals.xml>

- **3g3fv manual, 3g3fv manual pdf, omron 3g3fv manual, sysdrive 3g3fv manual, 3g3fv user manual, omron sysdrive 3g3fv manual, omron sysdrive 3g3fv manuale italiano, omron inverter 3g3fv manual, 3g3fv manual.**

The Digital Operator's display area features a 2line by 16character liquid crystal display. A total of 21 types of Inverters are available for maximum applicable motor capacities of 0.4 to 300 kW. **Voltage class. H Frequency References** The following five types of frequency references can be used to control the output frequency of the Inverter. **S Numeric input from the Digital Operator S Voltage input within a range from 0 to 10 V S Voltage input within a range from 0 to 10 V With minus voltage, rotation is in the opposite direction of the run command. S Current input within a range from 4 to 20 mA. H Low Noise 0.4 to 160kW Models** The output transistor of the Inverter is an IGBT insulated gate bipolar transistor. **FWD Lit** when there is a forward command input. **REV Lit** when there is a reverse command input. **August 1996 Software Ver. VSG101032 S1032 April 1997 Software Ver. VSG101040 S1040 Sept. 1998 Software Ver. VSG101043 S1043 Sept. 1999 Software Ver. H Inverter Output Noise Reduction** The noise output by 400V class Inverters was reduced to reduce the affect on peripheral devices and conform to EN standards. **PID Control Target Value Added to Multifunction Inputs Parameters H305 and H309** A function was added so that both the analog frequency reference and the PID control target value can. **H Bias Function for Analog Monitor Cards Parameters F405 and F406** A bias function has been added to the analog output from Analog Monitor Cards to enable adjusting the offset voltage. **VSG101114 H PG Speed Deviation Detection Function Upgrade F104** This function has been changed so that the conditions can be selected for speed deviation DEV detection. **Four, M12 Voltage class Model 3G3FV Dimensions mm 200V B2750E 400 max. 400V B411KE 375 max. B416KE 400 max. Six, M12 H 3G3FVB430KE**

External Dimensions Mounting Dimensions Six, 14 dia. Six, M12. Panel face Panel cutout for cables  
Front side of panel Back side of panel 18.8 30  
min. <http://olymp-kiev.com/temp/fckeditor/colt-saa-manual.xml>

212 Installation Conditions H Cautions and Warnings WARNING Provide an appropriate stopping device on the machine side to secure safety. A holding brake is not a stopping device for securing safety. Not doing so may result in injury. When installing the Inverter, always provide the following installation space to allow normal heat dissipation from the Inverter. 120 mm min. Upon completion of installation, always remove the cover from the Inverter. Otherwise, ventilation will be affected, causing the Inverter to overheat. Not doing so may result in electrical shock. WARNING Wiring must be performed by authorized personnel. Not doing so may result in electrical shock or fire. Remove the Digital Operator from the front cover before removing the front cover. For models of 15 kW or less both 200V and 400V class, do not remove or mount the front cover without first removing the Digital Operator;. Do not mount the front cover with the Digital Operator attached to the front cover, otherwise Digital Operator may malfunction due to imperfect contact. Therefore, always follow the instructions given below when connecting the Inverter to peripheral devices and other parts. H Wire Size and Round Solderless Terminal For the main circuit and ground, always use 600V polyvinyl chloride PVC cables. Install one wiring circuit breaker per Inverter. When a magnetic contactor is installed on the primary side of the main circuit to stop a load forcibly, however, the regenerative braking does not work and the load coasts to a stop. It is recommended that a Noise Filter be installed at the Power Supply to minimize this noise transmission. This is extremely hazardous. Also, be careful not to short the output wires. Alternatively, cables can be routed through a grounded metal pipe to prevent induction noise. Refer to the following for the definition of harmonics i.e., harmonic currents with voltages and countermeasures against the generation of harmonics from the Inverter.

Harmonics Harmonic Currents with Voltages Definition Harmonics consist of electric power produced from AC power and alternating at frequencies that are. The output current of the Inverter is comparatively high. Therefore, the ratio of harmonics in the output current of the Inverter is higher than that of any other electric machine. With DC and AC Reactors DC reactor optional When using a Braking Resistor Unit, set L801 to "1" i.e., overheating protection of the braking resistor and set L304 to "0" i.e., no decelerating stall prevention or "2" i.e., braking with stall prevention. Braking resistor Inverter Caution. There are four types of PG speed control, as shown below. Select the type that fits the application and control method. FWD Lit when there is a forward command input. REV Lit when there is a reverse command input. S Inverter Modes The SYSDRIVE 3G3FV Inverter's parameters and monitoring functions have been organized in groups, so it is easier to make settings and read data. These function groups are known as modes. The access level restricts which parameters can be set or displayed. Level. S Setting Parameters in Each Access Level The displays in program mode differ for each access level. There is no difference in other modes. This section provides the procedure to change the acceleration time to 20 s in each access level. The acceleration time C101 is a parameter in program mode. Key sequence Display Explanation Displays operation mode. Displays program mode. 2 times Puts the Unit in program mode. Key sequence Display Explanation Displays operation mode. Displays program mode. 2 times Puts the Unit in program mode. When running the Inverter, press the Enter Key from the operation mode display to bring up the monitor display. Run commands can't be received from any other display. Once the Unit is running, it can be switched to other modes.

<http://www.drupalitalia.org/node/66479>

The table's "Valid access levels" column indicates whether an item can be monitored in a particular access level and control mode. One of these four values, the output voltage, can be changed to a different value. S Selecting the Display Language Use parameter A100 to select the language

displayed by the Unit. Use this setting to prevent parameter settings from being changed. User Level This setting allows only the userselected parameters up to 32 to be displayed or changed. Key sequence Display Explanation Displays operation mode. Displays initialize mode. Puts the Unit in initialize mode. Select Language display Displays the Control Method display. Mode Accessible parameters Operation The Quickstart level parameters can be displayed. Initialize The Quickstart level parameters can be set or displayed. Program Only the parameters specified in A201 through A232 can be set or displayed. The "User Level" selection won't appear as an option for parameter A101 unless a parameter has been specified in A201 through A232. S Initialize Mode Parameter Levels Reference MENU Operation mode. The parameters which can be displayed and changed depend on the access level and control mode that are being used. Refer to the following table to determine if a parameter can be changed. S Parameter Groups An "OK". When the rated voltage, rated current, rated frequency, rated rotational frequency, and number of poles listed on the motor's nameplate have been input and the Run Key is pressed, the motor parameters calculated from these values are written to E101 through E208 automatically. Displays autotuning mode. 3 times Displays the rated voltage. When changing the rated voltage, press the Enter Key again to enter input mode. The digits will flash. Use the Reset, Up Arrow and Down Arrow Keys to change the rated voltage setting.

<http://immobilien-ankauf.com/images/canon-ixus-120-is-manual-pdf.pdf>

When any parameters have been changed in program mode b101 through o208, pressing the Enter Key in modified constants mode will cause these parameters to be displayed. WARNING Do not remove the front cover, terminal covers, bottom cover, Operator, or optional items while the power is being supplied. Refer to page 22. Ensure that the installation conditions are met. 2. Wiring and Connection Connect to the power supply and peripheral devices. Refer to page 211. Select peripheral devices which meet the specifications and wire correctly. Operation Basic Operation Operation based on the basic settings required to start and stop the Inverter. Refer to page 52. Applied Operation Operation which uses PID control or other functions. To initialize the parameters, set "2220" in A103 Initialize. After initialization the access level is set to Quickstart A101. The following table shows the setting method for Quickstart. Displays program mode. Puts the Unit in program mode. Displays the input voltage setting display. 10 times Press to change data. Key sequence Display Explanation Displays program mode Displays autotuning mode. Displays the rated voltage. see note Displays the rated current. see note Displays the rated frequency. see note Displays the rated speed. Procedure for changing the control mode. Key sequence Display Explanation Displays operation mode. E105 Maximum voltage VMAX Sets the motor rated voltage. E106 Base frequency FA Sets the motor rated frequency. E201 Motor rated FLA Sets the motor rated current. The setting procedure for these three parameters is as follows. The motor will rotate in the reverse direction. Press the Stop Key. The motor will stop. The operation LED indicator will keep flashing until the motor stops. The frequency reference can be changed, even during operation. The parameter settings described here will be sufficient for simple Inverter operations.

<https://www.imperialaccountingfl.com/images/canon-ixus-100-is-user-manual.pdf>

After the basic settings common to all of the control modes are introduced, the basic settings specific to each control mode will be explained. English Select Language display Access Level Displays the Access Level A101. Valid access levels Parameter Display name. Four acceleration times and four deceleration times can be set. Setting Name Function Ramp to Stop Deceleration stop Coast to Stop Freerun stop DC Injection to Stop DC braking stop Stops faster than freerun, without regenerative operation. The DC braking time depends upon the output frequency when the stop command is input and the "DC braking time at stop". Refer to Chapter 6 Advanced Operation or the parameter tables for details on the other settings. Set "Multistep Reference 1, 2, and 3" and "Jog Frequency Reference" in multifunction inputs, and change the status of these inputs

to switch between these 9 frequency references. Setting "7". To clear the emergency stop, turn the run command OFF, turn the faststop input OFF or ON for an N.C. Autotuning is the only setting for basic operation with openloop vector control. When the voltage limit restricted by the input power supply is reached near the rated motor speed, vector control cannot be established and speed accuracy will be reduced. If a load is connected when autotuning is performed, not only will incorrect motor parameters be recorded, but the motor may operate erratically resulting in dangerous conditions such as loads falling from vertical axis motors. The motor parameters will revert to their default settings if a fault occurs. Set these parameters again when autotuning. Fault display Probable cause and remedy Data Invalid There was a fault in the data set during autotuning. Parameter F109 sets the length of time that the motor speed must exceed the overspeed detection level in order to generate an overspeed fault. Parameter Display name Setting.

Parameter F111 sets the length of time that the difference between the motor speed and reference speed must exceed the PG speed deviation detection level in order to generate a PG speed deviation fault DEV. H Motor Selection Setting E102 Set the motor selection E102 to the type of motor to be used. This setting is used as a basis for motor protection Valid access levels Parameter. The motor will operate during autotuning, so be sure that it is safe for the motor to operate before pressing the Run Key. Initialize the torque limit parameters H701 to H704. The acceleration time is too short. Increase acceleration time 1 C101. Secondary current reference Frequency reference U121 U122 Detected speed Note In vector flux control, the ASR's P gain is the maximum frequency standard. H Regular Gain Settings C501 and C502 Parameter C501 sets the proportional gain of the speed loop ASR, and C502 sets the integral time. Motor speed Hz Note If C507 is set to 0.0, ASR P Gain 1 and ASR I Time 1 are used for the proportional gain and integral time at all frequencies. Lengthening the integral time lowers the responsiveness, and weakens the resistance to external influences. Vibration will occur if this setting is too short. This parameter cannot be changed during operation. Set this time as short as possible in any application where safety cannot be ensured. ASR Integral Reset Setting E When one of the multifunction inputs is set to "E," Multifunction analog output 2 terminal 23 Outputs the actual motor speed 0 to 10 V. Output torque Forward direction Forward torque limit Regenerative torque limit Reverse Forward Regenerative torque limit Reverse torque limit Reverse direction Note 1. When the forward torque limit has been set, the analog input signal acts as the limit value for torque generated in the forward direction. The default setting does not normally need to be changed.

[www.temsilcisitesi.com/wp-content/plugins/formcraft/file-upload/server/content/files/162670661cc042---canon-af35m-manual-pdf.pdf](http://www.temsilcisitesi.com/wp-content/plugins/formcraft/file-upload/server/content/files/162670661cc042---canon-af35m-manual-pdf.pdf)

Set the parameter if stable slip compensation is required in the constant output area where the operating frequency is as high as or higher than the rated frequency. This function is effective for equipment in which a starting torque is required, such as machinery with a high friction load or cranes. Use either the DC injection braking at startup b203 or the "DC braking reference" multifunction input set value 60 to raise the motor's magnetic flux in advance before startup. The magnetic flux from the DC injection braking at startup b203 can also be brought up quickly. The default settings shown in the table are for 200V class, 0.4 to 1.5 kW Inverters. Note 4. The default setting depends upon the type of Inverter. The table shows the default setting for 200V class, 0.4kW Inverters. Calculate the rated slip E202 from the value shown on the motor's nameplate with the following equation and set this value. Motor coresaturation coefficient 2 Coresaturation coefficient when magnetic flux is 75%. Normally these values aren't shown on the motor's nameplate, so it might be necessary to contact the motor manufacturer. Increase this setting if vibration or hunting occur. Factor of 4 By counting the rising and falling edges of phase A and phase B, this method has four times the resolution of the PG. The torque reference value cannot be set with the Digital Operator. Valid access levels Parameter Display name Setting Units Default. With torque control, the

motor sometimes rotates at high speed with no load or a light load. When frequency reference current terminal 14 has been set to frequency reference by setting parameter H309 to 1F, this terminal is also used as an input terminal for the speed limit. In this case, the actual speed limit value is the sum of the voltage input value at terminal 13 and the current input value at terminal 14. Advanced Note This parameter cannot be changed during operation. Set the speed limit bias as a percentage of the maximum frequency.

This parameter cannot be changed during operation. Valid access levels Parameter Display name Setting Units Default number range setting. If the jumper wire isn't disconnected, the input resistor will be destroyed. Refer to page 622 for a diagram of the control board. Reference value Gain Max.frequency Gain Ratedtorque Bias Max.frequency Bias Ratedtorque Input voltage Input current 10 V. Use this delay to make any preparations for the change in the control mode. Valid access levels Parameter Display name. These parameters can not be changed during operation. Setting Name Forward Torque Limit Reverse Torque Limit Regenerative Torque Limit Torque reference The input limits torque in both the forward and reverse directions during speed control. Speed Limit Limits torque in both the forward and reverse directions. Set the analog input terminal's signal level, gain, and bias to match the actual input signal. H Setting Motor Parameters The motor parameters function E2 will all be set automatically when autotuning is performed, so it normally isn't necessary to set them manually. Adjust this setting when a torque limit or torque control is being used and the output torque varies with the ambient temperature. The default setting does not normally need to be changed. The functions that can be used in common are marked with a "S". DC injection braking current is set as a percentage of Inverter rated output current, with the Inverter rated output current taken as 100%. The PID control provided by the SYSDRIVE 3G3FV Inverter is not suited for control that requires a responsiveness of 50 ms or less. Application Control contents Sensors used example Speed control Speeds are matched to target values as speed Tachogenerator information in a mechanical system. Speed information for another mechanical system is input as target values, and synchronized control is executed by feeding back actual speeds.

Response is possible with respect to changes both in target values and the control object. Control object Target value Feedback value Basic PID Control This is the basic form of PID control. Set value Contents PID disabled. Adjust the responsiveness of the PID control by means of the proportional gain P, integral time I, and derivative time D. Explanation of Set Values Parameter b507 adjusts the PID control offset. Set the characteristic according to the relationship between the Inverter's output frequency and the feedback value. Positive characteristic The feedback value increases when the Inverter's output frequency increases. Feedback loss detection enabled. The Inverter will continue operating with a warning output turned ON. Feedback loss detection enabled. The Inverter's protective function shuts off the output. Set this parameter to disable or enable the feedback loss detection function and to specify the operation of the Inverter after the loss of the feedback signal is detected. The vibration will be reduced as the integral time I is lengthened. Response Before adjustment After adjustment. With the SYSDRIVE 3G3FV, Scurve characteristic times can be set respectively for beginning acceleration, ending acceleration, beginning deceleration, and ending deceleration. If speeds are unstable, raise the set value. Valid access levels Parameter Display name. Make adjustments in the following cases If the wiring distance between the Inverter and the motor is long, raise the set value. If the motor capacity is less than the Inverter capacity the maximum application motor capacity, raise the set value. When the frequency reference is zero and a run command is input, the motor operates at the frequency reference lower limit d202.

Internal frequency reference d304 Set frequency reference d303 d302 d301 H Hold Reference Memory Selection d401 Parameter d401 selects whether the held frequency during motor operated potentiometer MOP simulation operation is stored when operation is stopped. Double the values for 400V class Inverters. Output voltage V Frequency Hz Note 1. Set so that the following condition will

be satisfied. E106 E111 E104 Note 2. Frequency 40.0 to 60.0 Advanced 400.0 Valid access levels  
Parameter Display name Setting Units Default number range. The installation location of each is  
determined by the type of Card. Be sure to install the Cards in their correct locations. Wait at least  
one minute or at least three minutes for models of 30 kW or more, and then remove the Inverter's  
front cover. Check to be sure that the CHARGE light is turned OFF. Explanation of Settings Setting  
Description. The second digit below the decimal point is set by bits 8x10, 4x10, and 2x10, so the  
settings are made in units of 0.02 Hz. For example, if "0" 1F is set, when the output frequency is 60  
Hz there will be an output of 60 pulses per minute. Duty 50% H Setting a Wired SYSMAC BUS  
Interface Card F8 When using a 3G3IVPSIG Wired SYSMAC BUS Interface Card, set the following  
parameter in order to specify the operation of the Inverter for communications failures. Coast to a  
stop. Fault Emergency stop time Decelerates to a Fault stop according to the C109 setting.  
Continuous operation. See note. Alarm Note If the parameter is set to 3, the Inverter will operate  
without references from the host controller. This stored frequency will be retained even after a  
power interruption and the motor will be restarted at this frequency when a run command is input  
again. Turning the input OFF has the same effect as setting H305 the multifunction analog input  
selector for terminal 16 to 1F.

When a fault has occurred, be sure to find out what kind of fault occurred, take steps to correct the  
cause of the fault, and restart the Inverter. It is possible to damage the Inverter by repeatedly  
resetting a fault without correcting the cause. There are 16 external fault inputs available with all 16  
combinations of the following variables. Select the setting with the desired combination. External  
Fault Input level Detection method. Deceleration time set in b303. Maximum frequency or set  
frequency Frequency reference that was set Output frequency Minimum baseblock time Speed  
Torque Control Change Setting 71 Speed control Torque control With this setting, the multifunction  
input can be used to switch between speed and torque control. These parameters can not be  
changed during operation. The run command is ON and voltage is being output. Inverter Operating 2  
"During RUN 2," Setting 37 The Inverter is not outputting a frequency. The position has been  
brought within the zero servo completion width b902 after the zero servo command was input. This  
output function indicates that zero servo position control has been completed. The Inverter's status  
monitor item U1 can be output as multifunction analog output. Refer to the table of status monitor  
items in page 312 for details. 658 Protective Functions L H Motor Protection Settings L1 Valid  
access levels. Operating time minutes Cold start Hot start Motor current % E201 is 100%. H  
Momentary Power Loss Settings L2 Valid access levels. Set this parameter when a highspeed motor  
is being used in the highspeed range the high frequency range above the base frequency. Therefore  
the actual deceleration time becomes longer than the deceleration time that has been set. This can  
be adjusted, however, by setting a shorter deceleration time than for the 0 setting, so that the  
actual deceleration time will also be shorter. Time H Frequency Detection Settings L4 Valid access  
levels Parameter Display name Setting. Setting Function Stop.

Caution The Inverter might be damaged when using the fault restart function. Setting Function  
Disabled. Enabled. Detects input power supply phase loss, 3phase imbalance, or deterioration of the  
main circuit condenser. Parameter. In that case, use a higher rank Inverter with parameter L817 set  
to 0 and parameter L819 set to 1. Any one of the four values monitored at startup frequency  
reference, output frequency, output current, or the value set in parameter o101 can be selected to  
appear when the power is turned on. Setting Function Inverter power on time. Counts the elapsed  
time from startup until power is turned off. Inverter running time. H Using the Lists Name Control  
mode Para Description Setting Default Chan Page range range setting setting meter meter Display  
Open Flux during name. The voltage balance between phases is bad. Reset the fault after correcting  
its cause. The main circuit smoothing condenser has exceeded its life expectancy. Replace the  
electrolytic condenser. Contact your OMRON representative. The Inverter's cooling fan has stopped.  
Replace the cooling fan. Contact your OMRON representative. High carrier frequency. 400Vclass

models Decrease the C601 setting. The braking resistor is The deceleration time is too short and the regen. L602 for longer than the Check the mechanical system and correct the setting in L603. Oper Disconnect connection. The Digital Operator or Inverter contacts are faulty. The Digital Operator connection was broken during After disconnecting the connectors and then Inverter operation. Communications Card. Option Error Turn off the power and insert the Card again. The Inverter or Optional Card is faulty. Replace the faulty component. Remove the heat source. The Inverter's cooling fan has stopped. OH2 flashing An OH2 alarm signal Inverter Clear the multifunction input's overheating alarm. Speed Deviation greater than the setting in Lighten the load. F110 for longer than the setting in F111.

The acceleration time and deceleration time are too short. An error occurred in the Check the communications line and correct the SYSMAC BUS trouble. Limit range error OPE03 Multifunction input. If that should occur, use this section as a reference and apply the appropriate measures. If the contents of the fault are displayed, refer to 81 Protective and Diagnostic Functions. If the Inverter is not in drive mode, it will remain in ready status and will not start. Press the Menu Key to display the operation mode, and enter the drive mode by pressing the Enter Key. The frequency reference is too low. The load may be too big. The 3G3FV has a stall prevention function and an automatic torque boost function, but the motor responsiveness limit may be exceeded if acceleration is too rapid or if the load is too big. When "1F" frequency reference is set for parameter H309 multifunction analog input terminal 14, a frequency corresponding to the terminal 14 input input voltage current is added to the frequency reference. The Inverter goes into DC braking status for 0.5 seconds after deceleration is completed. This is the factoryset default. To make sure that the brake holds, use the frequency detection function and apply the brake only when the detected frequency drops to 3 to 5 Hz or lower. If the motor continues operating at low speed, without completely stopping, and after a deceleration stop has been executed, it means that the DC braking is not decelerating enough. If this occurs, insert a diode as indicated by section A below. Section A 24 V 1 to 8 3.3 K 821. **WARNING** 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. If the maintenance period is extended, it is recommended that the ambient temperature be lowered and that the poweron time be reduced as much as possible.

<http://www.drupalitalia.org/node/66481>