NO:2025.03

CHINT ELECTRICS

LCD Operation Panel for NVF7 Inverter

User Instruction

Standard: EN/IEC 61800-3

Preface

Thank you for choosing the LCD Operation Panel for NVF7 Inverter.

This document provides comprehensive guidance for users on installation, configuration, operation, and maintenance of the LCD Intelligent Operation Panel, a high-performance human-machine interface designed for use with the NVF7 inverter.

The operation panel offers a suite of advanced control and monitoring capabilities tailored for industrial application. With support for multilingual display (Chinese, English, Russian, Spanish), a high-resolution RGB LCD, intuitive navigation, and robust environmental protection (Ip65), the panel ensures efficient and reliable operation in diverse application scenarios.

This manual covers essential information including system features, safety instructions, parameter programming, functional operation, and routine maintenance. Users are strongly advised to read and understand the content prior to use. For additional technical assistance, contact Zhejiang Chint Electrics Co., Ltd. or an authorized service provider.

Safety precautions

1 Please read the instruction manual carefully and follow all safety precautions before handling, installing, operating, and maintaining the inverter. Failure to do so can result in injury, equipment damage, or death.

2 We shall not be held liable for any injuries or equipment damage resulting from failure to adhere to the safety precautions outlined in the instruction manual.

◆Security Definition

Marker	Description
Danger	Failure to comply with the requirements may result in death or serious injury.
Attention	Failure to comply with requirements may result in injuries or damage to property.

◆Before installation

Danger	✧ If the operation panel is damaged or has incomplete parts, do not install or operate it, otherwise it may cause fire or injury! ✧ Do not touch the main circuit terminals, control circuit terminals, electronic components and inverter parts directly with your hands!
Attention	✧ If the nameplate information of the product is not consistent with your requirements, please do not install or operate it! ✧ If the nameplate information of the product is not consistent with the packing list, please do not install or operate it! ✧ There is a supercapacitor in the operation panel designed to sustain the voltage necessary for RTC operations, specified at 3.6V/0.22F. Please adhere to the local regulations during transportation.

◆Installation

Danger	✧ Installation must be carried out by qualified personnel, otherwise there is a risk of electric shock! ✧ Please install on non-combustible objects such as metal. ✧ Don't leave combustible materials nearby. ✧ Do not install in an environment containing explosive gases. ✧ Do not install in direct sunlight. ✧ Do not install near water pipes or area with high risk of water ingression.
Attention	✧ During handling of the operation panel, do not subject the operating panel to excessive force. ✧ Do not leave wires or metal objects inside the inverter during installation work, otherwise there is a risk of fire!

◆Wiring

Danger	✧ Wiring work must be carried out by qualified personnel. ✧ Make sure that the input power is completely disconnected before wiring. ✧ Use the operation panel only for NVF7 inverter.
Attention	✧ Connect operation panel to NVF7 Inverter using standard network cable. ✧ Do not connect the operation panel to other inverter series other than NVF7. ✧ Do not use crossed network cable or damaged cable, otherwise there is a risk of damage to the operating panel. ✧ Proper shielding is essential in areas with strong electrical, magnetic fields, or radiation to prevent equipment malfunction.

◆Running

Danger	✧ Prior to operation, it is essential to correctly configure the inverter parameters on the control panel. Failure to do so may result in potential damage to the equipment. ✧ All personnel involved in testing of inverter shall be trained. Otherwise there is a danger of injury or damage to the equipment!

◆Maintenance

Danger	✧ Product maintenance, repair, inspection, or replacement of parts must be carried out by qualified persons, otherwise there is a risk of electric shock! ✧ It is prohibited to leave wires or metal objects inside the inverter, otherwise there is a risk of fire! ✧ It is prohibited to carry out maintenance, repair, inspection, or replacement of parts of the product without turning off the power source, otherwise there is a risk of electric shock! ✧ Prior to maintenance operations of inverter, disconnect the power supply and wait for 10 minutes. Ensure the DC bus voltages are lower than 36V before proceeding with any work on the inverter. Otherwise there is a danger of electric shock!
Attention	✧ When maintaining, servicing, checking, or replacing parts of the product, avoid touching the internal components, otherwise there is a risk of electrostatic damage to the device! ✧ Plugging or unplugging of components only during power off. ✧ Protect the operation panel from damage due to sharp objects.

◆Periodic checks

Type	Frequency	Checks
Routine inspections	Daily	Normal temperature and humidity of the environment and free from dust and foreign matter, etc.
		No abnormal noise from the operating panel.
		The operation panel display normally.
		The keypads on the operation panel operates normally.
		The operation panel is securely installed.
Periodic inspection	Yearly	The operation panel is operating at normal temperature.
		The RJ45 port cable connection on the operation panel is firmly attached.

◆Disposal considerations

Attention	✧ The supercapacitor on the operation panel may explode when incinerated! ✧ Plastic parts produce toxic gases when incinerated! ✧ Please dispose of as industrial waste.

1 Product introduction

1.1 The components

The LCD operation panel for the NVF7 inverter supports frequency setting, parameter monitoring, status monitoring, quick start-up, failure logging, and parameters upload/download. It offers multilingual interface display including Chinese, English, Russian, and Spanish, suitable for various users. The panel has an IP65 protection rating.

Figure 1.1.1 LCD Operation Panel for NVF7 Inverter

1.2 The display

The display adopts RGB LCD screen with a resolution of 320x240 pixels.

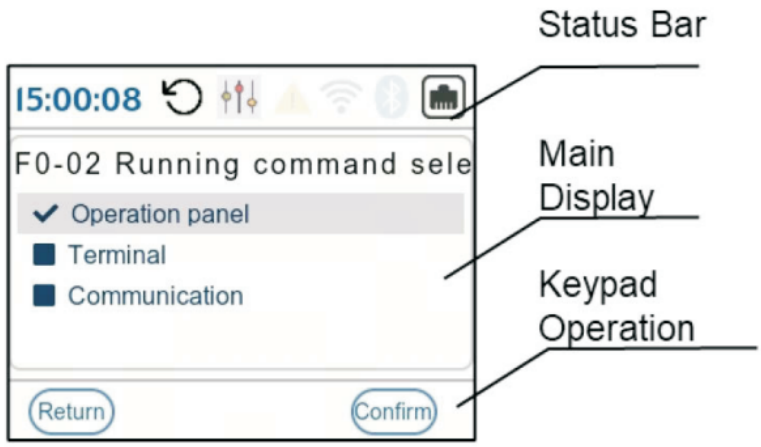


Figure 1.2.1 Example of the display.

Table 1.2.1 Function description of the display

Zone	Function	Description
Status bar	Digital clock	Current time
	Operating status of the inverter	Forward/Reverse, Run/Stop status
	Inverter control mode	Operation panel Remote Terminal
	Inverter fault status	Indicate inverter fault status
	Wi-Fi connection status	This feature is currently not supported
	Bluetooth connection status	This feature is currently not supported
	Status of the connection between the operating panel and inverter	Indicate successful connection
Main display	See the descriptions on the respective pages	Display main contents of the current interface, including the menus and parameters
Keypad operation	See the descriptions on the respective pages	Display current operating prompts for the left and right function keypad buttons

1.3 The keypad and indication light

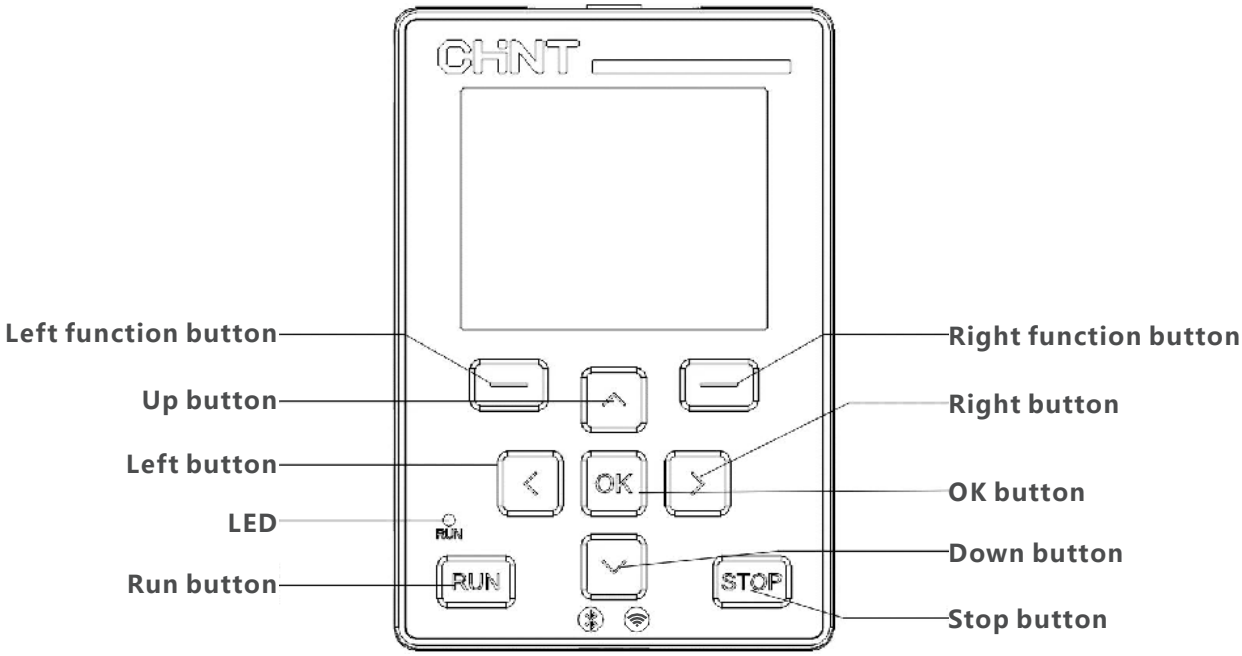


Figure 1.3.1 Layout of the keypad buttons

Table 1.3.1 Function description of the keypad buttons

Pushbutton	Function	Description
	Left function button (F1 key)	• Return to the interface
	Right function button (F2 key)	• OK/ENTER • Save modified content in the parameter modification interface
	Up	• Menu up selection • Increment of value during parameter modification
	Down	• Menu down selection • Decrement of value during parameter modification
	Left	• Menu up/left selection • Move to the left during parameter modification
	Right	• Menu down/right selection • Move to the right during parameter modification
OK	OK/ENTER	• OK/ENTER • Used to save content during parameter modification
RUN	RUN	• RUN command (only for panel control)
STOP	STOP	• STOP command • Fault reset (only for panel control)

Table 1.3.2 Function description of LED Indicator

LED color	Description
No display	Inverter standby state
Solid Yellow	Unsuccessful connection with inverter
Solid Green	Inverter running
Solid Red	Inverter fault

2 Operation panel function and application

2.1 Menu structure

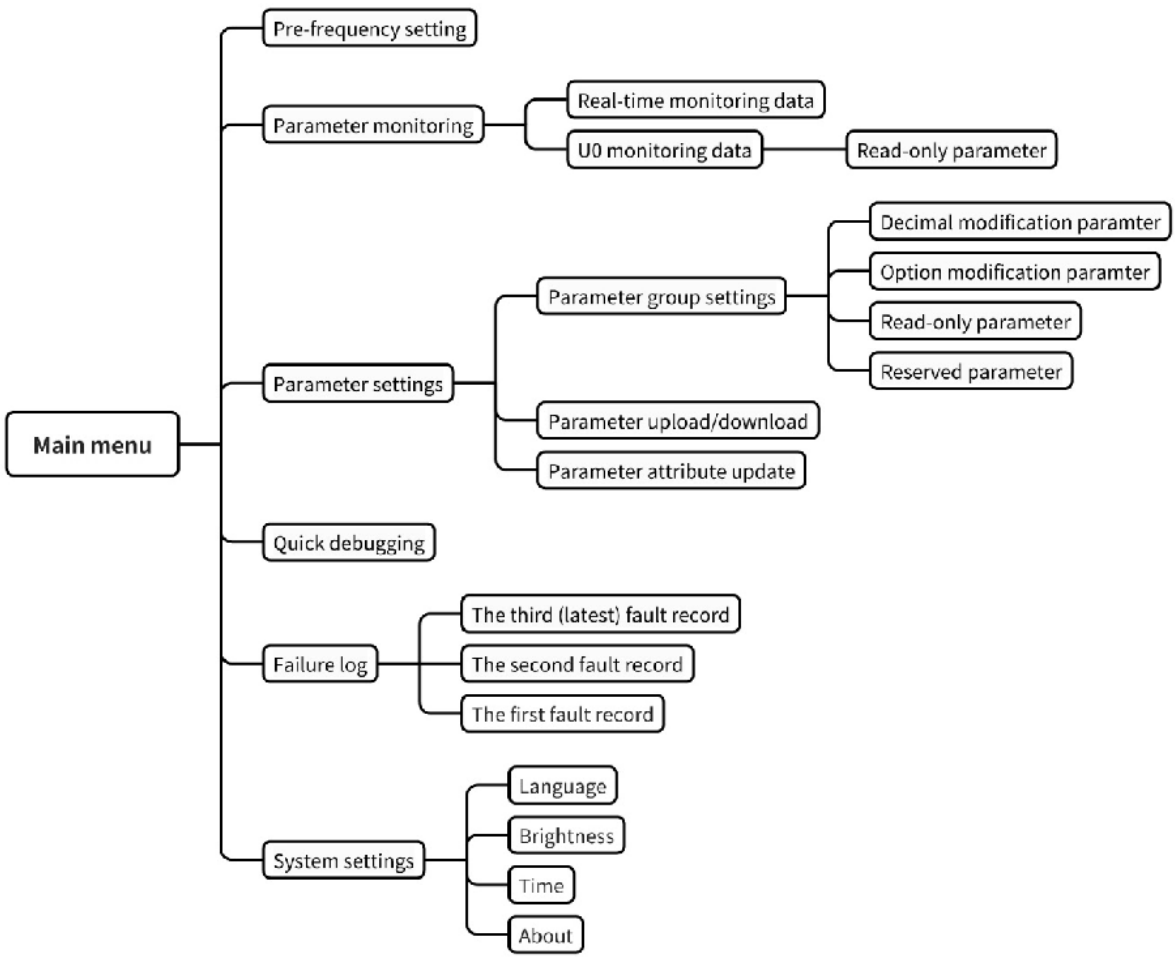


Figure 2.1.1 Operation panel menu structure

2.1.1 Initial power-up

When the operation panel is powered up for the first time, wait for the panel to load all inverter parameters.

Figure 2.1.2 Initial power-up view

Table 2.1.1 List of initial power-up view elements

Zone	Display content	Description
Version	Firmware version	Consistent with U0-79
	Display version	Consistent with the version in the system
LOGO	Brands	CHINT
Loading progress	Loading progress status	System loading progress

2.1.2 Home page

The home page, i.e. the main menu, is used to select the corresponding functions that need to be accessed, including frequency setting, parameter monitoring, parameter setting, quick start-up, failure logging, and system setting.

The interface is displayed as follows.

Figure 2.1.3 Home page

Table 2.1.2 Description of the functions of the Home View menu

Zone	Function	Description
Main display	Frequency setting	Direct access to set the F0-08 preset frequency
	Parameter monitoring	Monitoring of signal and status (Parameter U0)
	Parameter setting	Parameter group parameter setting and parameter function (parameter upload and download)
	Quick start-up	Quick setup based on predefined parameter
	Failure logs	Display the history of the last three fault logs, including the type of fault, time, and inverter parameters during fault
	System setting	Configuration of LCD intelligent operation panel, including language, brightness, time, etc.

2.2 Preset frequency setting

The preset frequency (F0-08) parameter of the frequency converter is the key parameter for speed control of the equipment during operation, which can be set in three ways, as follows.

2.2.1 Set the preset frequency from home page

From the home menu, enter "Set-Freq" and adjust the preset frequency (F0-08).

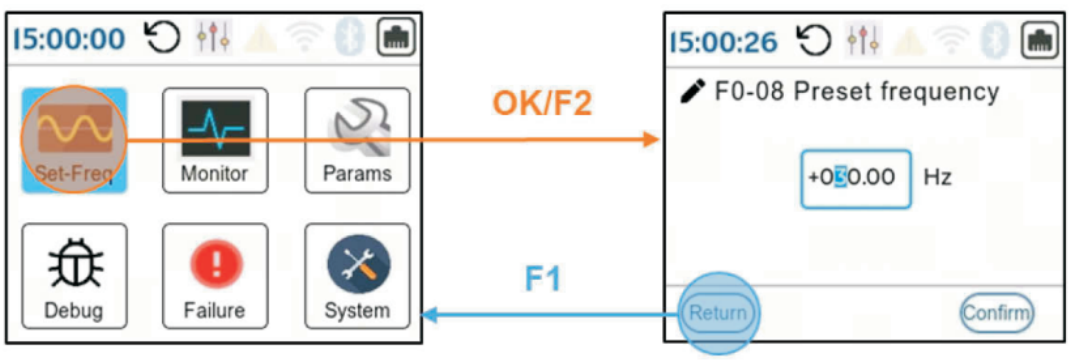


Figure 2.2.1 Method 1- Set the preset frequency from home page

2.2.2 Set the preset frequency from parameter monitoring page

From the parameter monitoring page, use the up and down keypad buttons to adjust the preset frequency (F0-08). This allows users to observe the frequency converter's status and adjust the motor speed simultaneously.

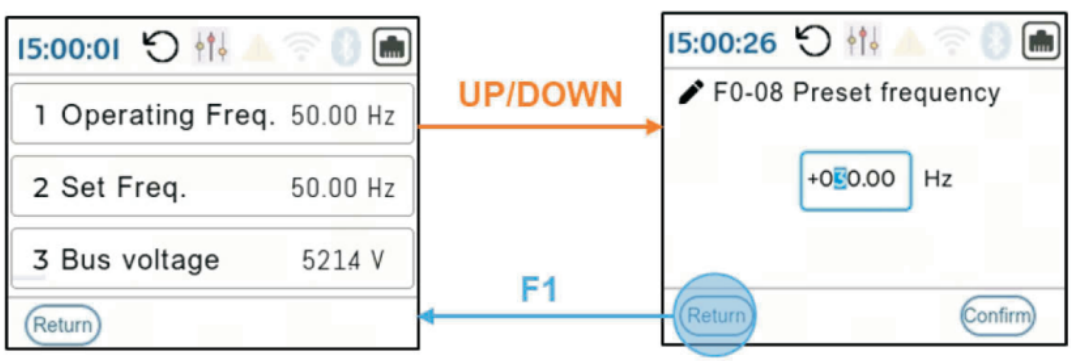


Figure 2.2.2 Method 2 - Set the preset frequency from parameter monitoring page

2.2.3 Set the preset frequency from parameter setting page

The preset frequency can be adjusted by accessing parameter F0-08 (Method 3). Refer to section 2.4.2 for specific modification.

2.3 Parameter monitoring

2.3.1 Real-time monitoring

The real-time monitoring parameter only displays 3 parameters per page, and a total of 32 parameters can be displayed during operation, i.e., the first 32 parameters of the U0 monitoring parameter. This is determined by the operation display parameter 1 (F7-04) and the operation display parameter 2 (F7-05). During shutdown, only 13 parameters can be displayed, which are determined by the shutdown display parameter (F7-06). Refer to section 2.4 for the setting of the above three parameters.

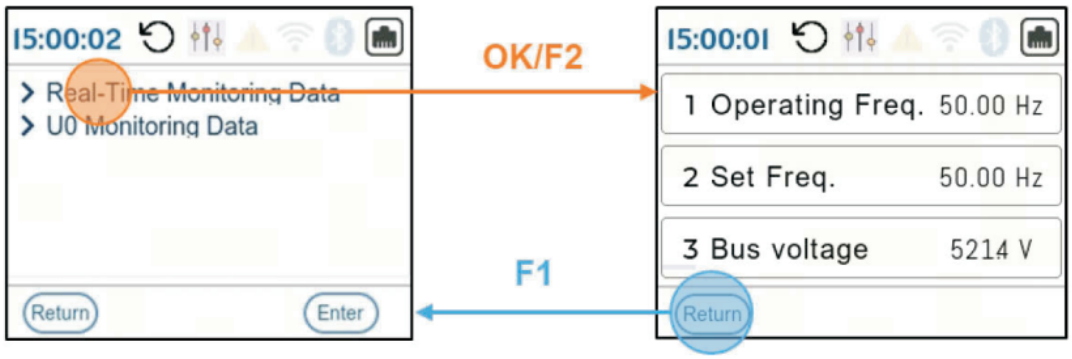


Figure 2.3.1 Real-time monitoring parameter operation

When the setup display parameters are all 0, no parameters are displayed and users are prompted to modify the parameters, as shown in Figure 2.3.2.

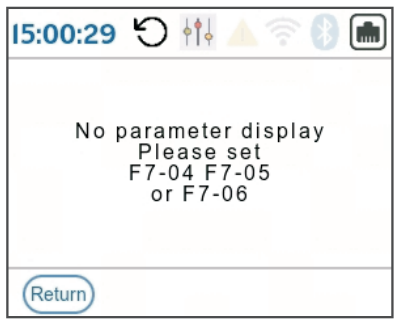
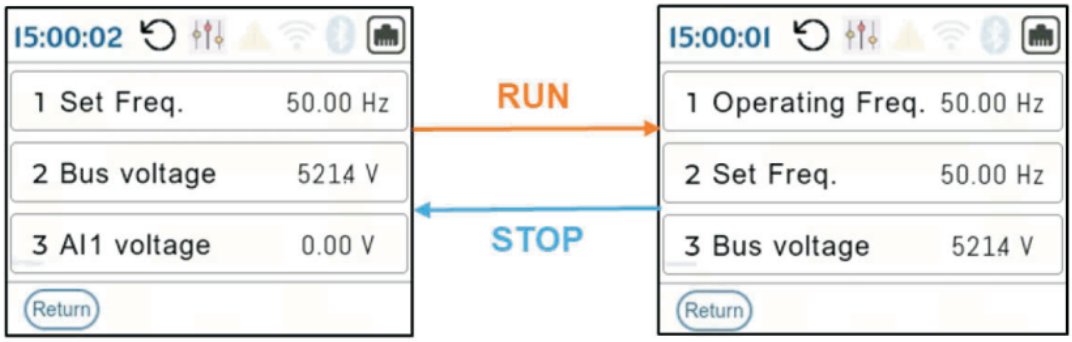


Figure 2.3.2 Prompts when display parameters are all 0

When the inverter ceases operation, the real-time monitoring parameters transition to the stopped display parameters. These parameters revert to the running display parameters once the inverter resumes its operational state.



(1) Inverter stopped display parameter (2) Inverter running display parameter

Figure 2.3.3 Switching between stopped and running display parameters

To navigate through the real-time monitoring parameters in any state, utilize the left and right keypad buttons to move right or left between pages, as illustrated in Figure. 2.3.4.

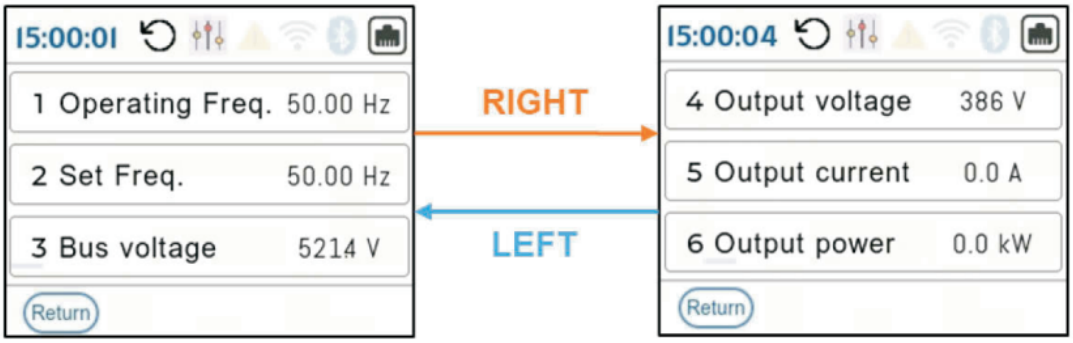


Figure. 2.3.4 Navigate real-time monitoring parameters in any state

2.3.2 U0 parameter monitoring

U0 parameters are read-only and vary with the inverter state. Figure 2.3.5 shows how to query these parameters.

Figure 2.3.5 Viewing of U0 monitoring parameters

2.4 Parameter setting

From "Params" in the main menu, each parameter can be accessed via "Parameter Group Settings" - "Group F0" for example.

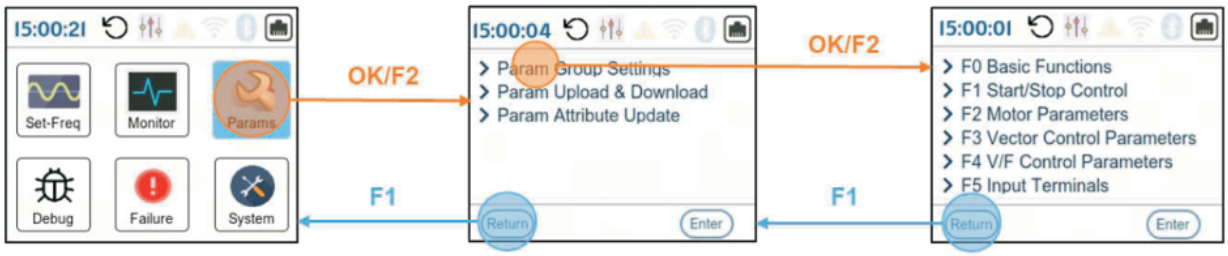


Figure 2.4.1 Home page - parameter group setting – each parameter group

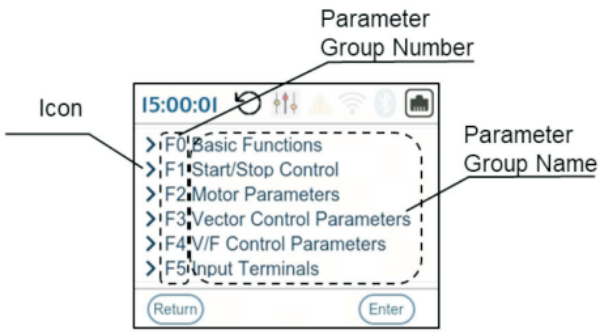


Figure 2.4.2 Parameter group

Table 2.4.1 Parameter group page description

Zone	Display	Description
Icon	>	Indicates expandable content
Parameter group number	F0~A5	See table 2.4.2 for details
Parameter group name	Name of each parameter group	See table 2.4.2 for details

The parameter modification involves 19 groups of parameters, as shown in the table below.

Table 2.4.2 Parameter group description

Parameter group number	Parameter group name	Remarks
F0	Basic functions	
F1	Start-stop control	
F2	Motor parameters	
F3	Vector control parameters	
F4	V/F control parameters	
F5	Input terminals	
F6	Digital output terminals	
F7	Keyboard and display	
F8	Auxiliary functions	
F9	PID function	
FA	Multi-segment commands, simple PLC functions	
Fb	Communication parameters	

Fc	Reserved	Reserved parameter sets, inaccessible
Fd	Expansion cards	
FE	Fault and Protection	
FF	User-defined function	
FU	Manufacturer's parameters	A password is required to log in.
A0	Terminal expansion function	
A5	Second motor parameters	

For the parameters read and write, the possibility depends on the state of inverter as defined below.

Table 2.4.3 Parameter read-write description

Instruction manual icon	Operation panel icon	Description
○		Value of the parameter can be modified when the inverter is in a stopped or running state
◎	Stopped Running)	Value of the parameter cannot be modified while the inverter is in the running state
●		Value of the parameter is the actual value and cannot be changed
-		Reserved parameter. No practical value

For the second type of parameter ◎, its read-write possibility is determined by the running state of the inverter. If the current page is parameter list page, changes in inverter state will not update the read-write icon until you re-enter the parameter list page.

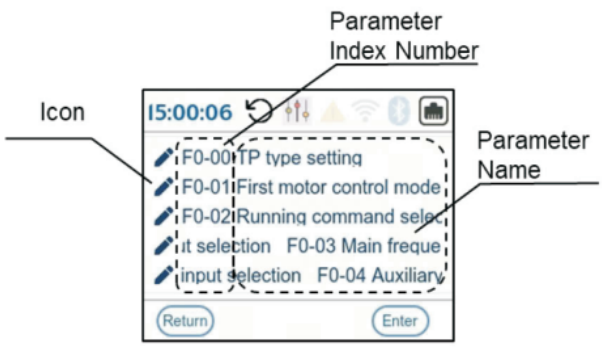


Figure 2.4.3 Parameter list page

Table 2.4.4 Parameter list page description

Zone	Display	Description
Icon	/ /	See Table 2.4.3 for a detailed definition of operation panel icons and read-write possibility
Parameter index number	F0~A5	See the parameter list of the inverter for details
Parameter name	Name of each parameter	See the parameter list of the inverter for details

2.4.1 Parameter setting

For the parameters with the possibility to modify its setting, all the options are listed in the instruction manual of the inverter.

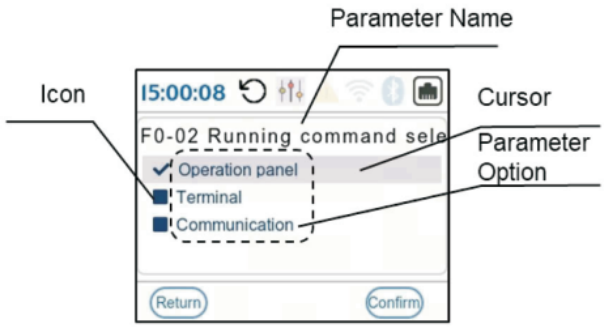


Figure 2.4.4 Parameter setting option

Table 2.4.5 Parameter setting options description

Zone	Display	Description
Icon	✓ ■	Current parameter options selected Other parameter options
Parameter name	Parameter name	Parameter name of the current parameter
Cursor	Cursor	Currently selected parameter option
Parameter option	Parameter option name	All parameter options

When entering the parameter option menu, the cursor selection is the current parameter option. Use the OK/F2 keypad button to confirm the cursor selection and the icon will change upon successful modification. The specific process is shown in Figure 2.4.5.

Figure 2.4.5 Parameter setting

2.4.2 Parameter setting involving decimal numbers

Modification of parameters involving decimal numbers is shown on Figure. 2.4.6.

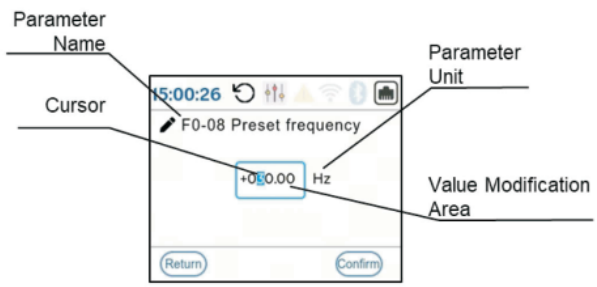


Figure 2.4.6 Parameter setting involving decimal number

Table 2.4.6 Parameter setting involving decimal numbers

Zone	Display	Description
Parameter name	Icon, parameter group, parameter name	Current parameter
Cursor	Cursor	Exact decimal number being modified
Value modification area	Parameter modification area	Parameter value modification

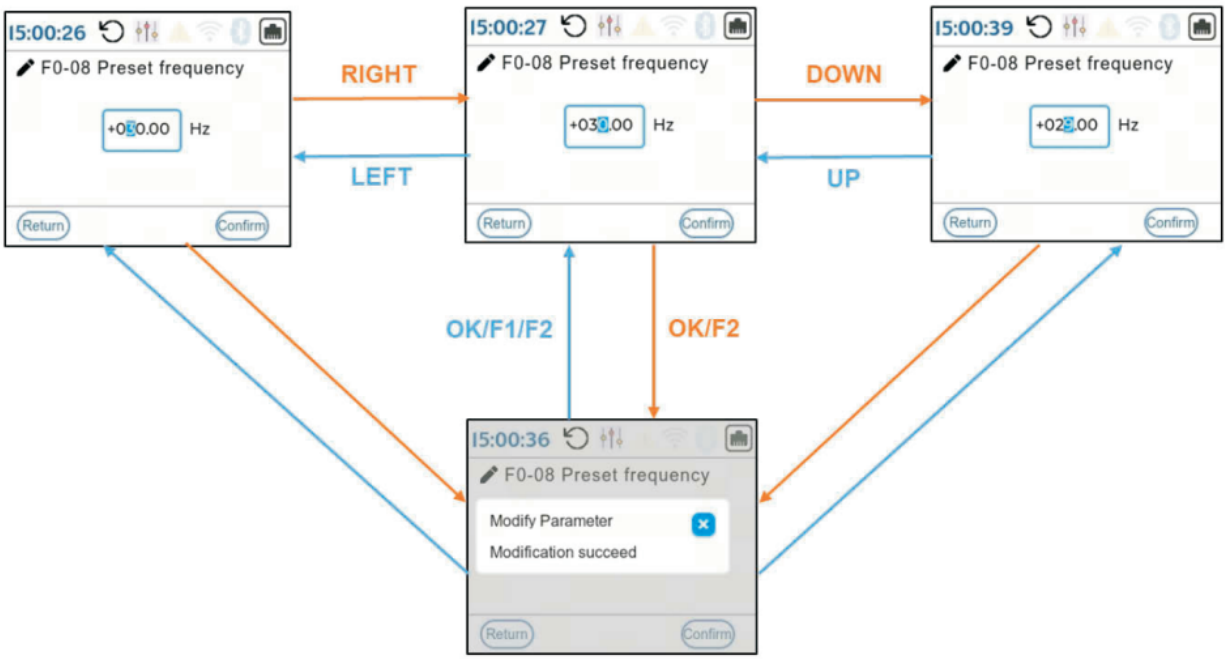
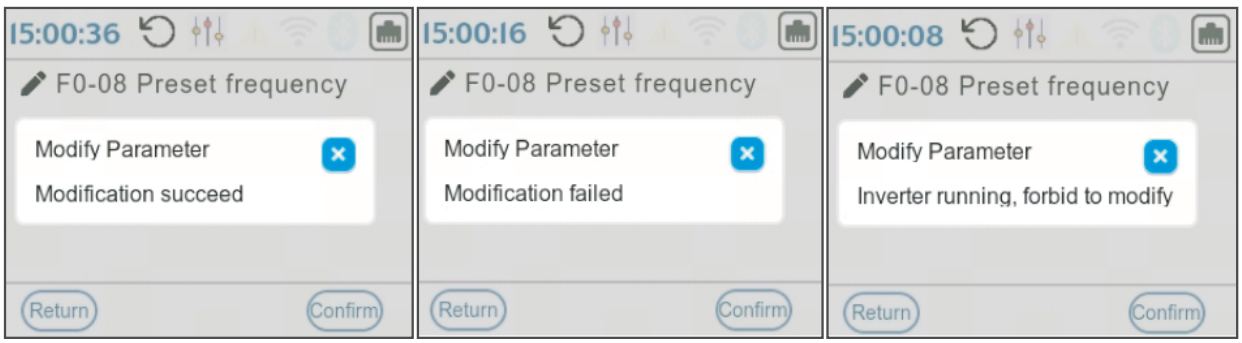


Figure 2.4.7 Parameter modification involving decimal numbers

The user can move the cursor by pressing the left and right keypad buttons and modify the current value by pressing the up and down keypad buttons. If a parameter exceeds its range, it is set to the nearest boundary value.

After modifying the parameter value, press OK/F2 to confirm. The device will determine if the change is successful based on the read/write compatibility of the current parameter, as shown in Fig. 2.4.8.



(1) Modification success; (2) Modification fails; (3) Modification is prohibited while the inverter is running

Figure 2.4.8 Parameter modification involving decimal number (pop-up prompt)

2.4.3 Read-only parameters

The read-only parameter is not modifiable and typically represents the inverter status parameter. The value of this read-only parameter updates in real time as the inverter status changes.

Figure 2.4.9 Read-only parameter

2.4.4 Other parameters

Parameter initialization (F0-28)

In the parameter initialization, "Clear Record" will clear the fault logs. "Restore Factory Parameters, Excluding Motor Parameters" will restore all parameters except F2 parameter group to the factory value.

Tuning selection (F2-37)

When you select motor tuning (not "no operation"), a prompt will appear asking you to press "RUN" to continue. Pressing "RUN" starts the motor tuning, showing a page and ring loader. After motor tuning, the window closes automatically. See Figure 2.4.10 for the process.

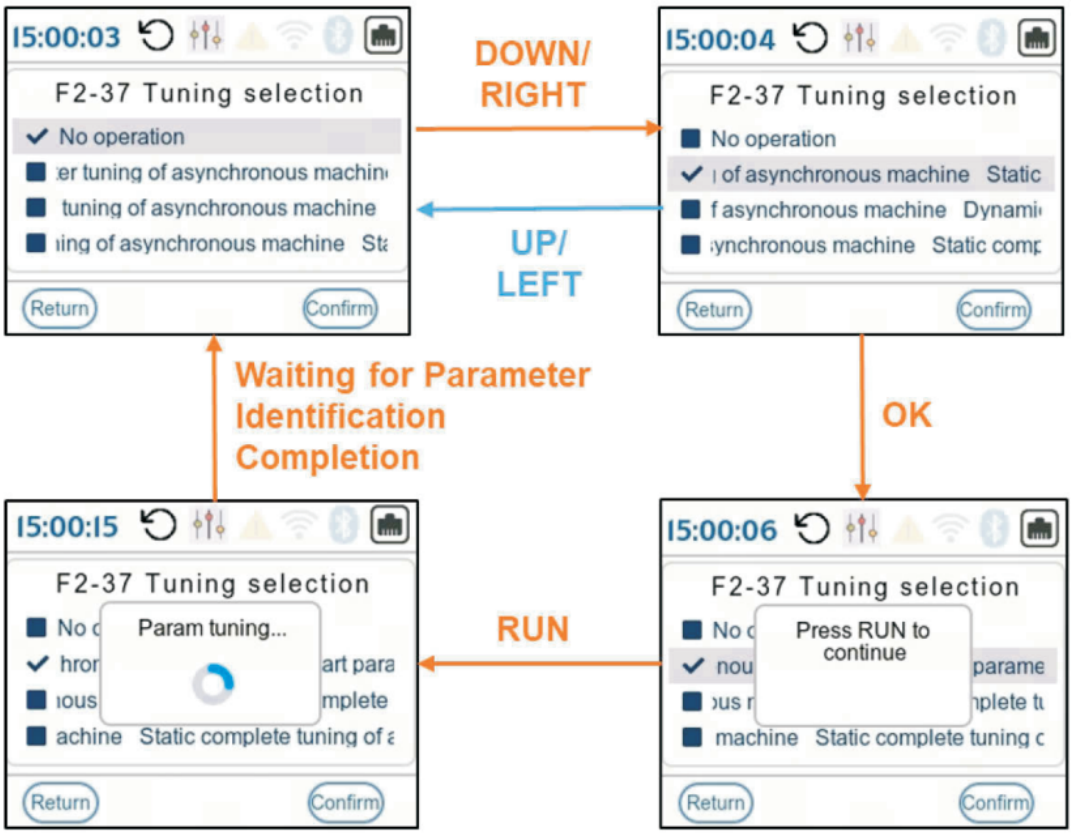


Figure 2.4.10 Motor tuning

1) User password (F7-00)

The user password is set through the F7-00 parameter, the default password is 0 (i.e. no password), and the setting range is 0~65535.

To set the password for the F7-00 parameter, enter the same password twice to complete the setup. If a password is already set, it must be entered when accessing "Parameter Setting" or "Quick Setting" from the home menu.

Display parameters (F7-04~F7-06)

Display parameters in the real-time monitoring view include those during inverter stopped (set by F7-06) and during inverter running state (set by F7-04 and F7-05).

Before setting, convert each bit from a 16-bit binary number to a decimal number, then enter the decimal value into the corresponding parameter.

2.5 Parameter management

The parameter management function facilitates users in efficiently copying and pasting parameter values, and ensures the accurate presentation of these parameters.

2.5.1 Parameter upload

Parameter upload involves transferring the values of all parameters within the parameter group F0~A5 from the inverter to the operation panel. This process facilitates the subsequent downloading of these parameters to other inverters for their operations.

Parameter upload can be accessed from "Parameter Upload/Download" on the parameter management page.

Figure 2.5.1 Parameter upload operation

Select and press "Parameter Upload" to initiate the parameter uploading process. The progress of the upload will be displayed on the popup window's progress bar. Upon completion of the upload, the popup window will close automatically.

2.5.2 Parameter download

Parameter download lets users selectively transfer F0~A5 group parameters from the intelligent operation panel to the inverter. Users can download all parameter values or specific groups, excluding F2, Fb, and Fc groups.

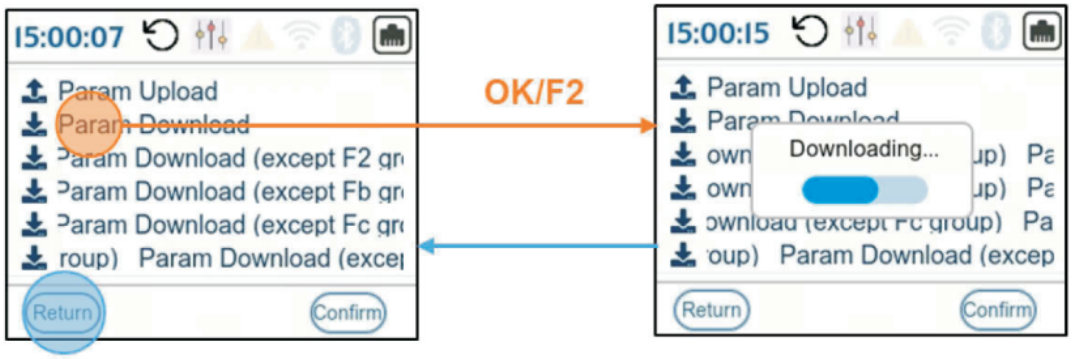


Figure 2.5.2 Parameter download operation

2.5.3 Parameter attribute

Parameter attributes indicate the read-write possibility, display digits, units, and decimal point of a parameter.

After updating the firmware of the operation panel, the last update time in the system settings will change. The parameter attribute update will automatically trigger on the first startup, and then the device will enter the home menu page once the update is complete.

Users can manually update the parameters through the "parameter attribute update" option in the parameter settings. The process is the same as the parameter upload operation.

2.6 Quick start-up

Quick start-up allows the user to configure essential parameters, streamlining the start-up process.

It can be accessed through "Debug" in the home menu.

The quick start-up involves rapid parameter setting, with an operational interface identical to standard parameter setting. The key difference is that during quick start-up, the OK button is used to confirm the current parameter modification value. Pressing the F2 button will advance to the next parameter modification interface,while pressing the F1 button will return to the previous parameter modification interface.

When the quick start-up process returns from the initial parameter, the configuration remains incomplete. Conversely, when it concludes at the final parameter, the configuration is deemed complete. In both instances, the system will return to the home menu.

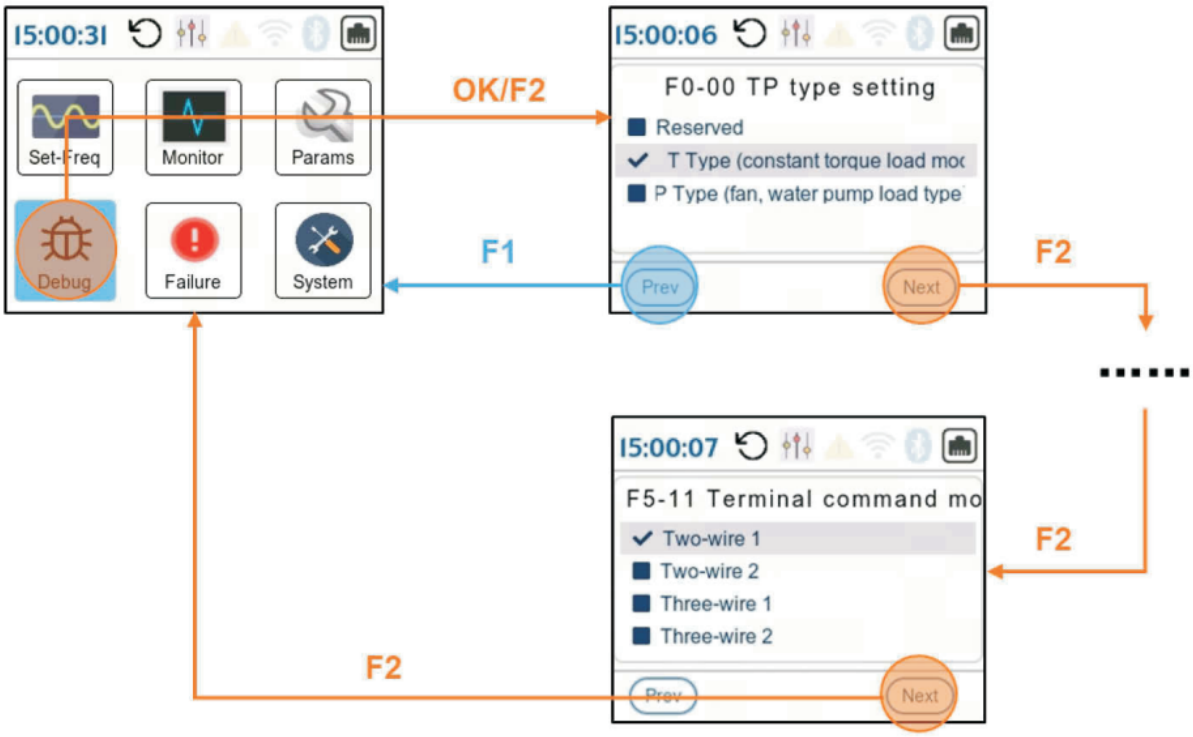


Figure 2.6.1 Quick start-up page navigation

Quick start-up involves 10 parameters:
TP type (F0-00),
Preset frequency (F0-08),
Acceleration time 1 (F0-17),
Deceleration time 1 (F0-18),
Motor rated power (F2-01),
Motor rated voltage (F2-02),
Motor rated current (F2-03),
Motor rated frequency (F2-04),
Motor rated speed (F2-05), and
Terminal command mode (F5-11)

2.7 Fault management

When the inverter malfunctions, it promptly reports the fault for users to react.

2.7.1 Fault indication

If the inverter is faulty, the LED turns red, the "inverter fault" icon flashes on the status bar, and a pop-up window shows the failure type. In the pop-up window:

- Press F1 to close it.
- Press F2 to enter the fault logs page.
- Press STOP/RESET to reset the inverter fault and close the window.

Pressing the RUN button while the pop-up window is displayed will show a message indicating that a fault reset is needed first.

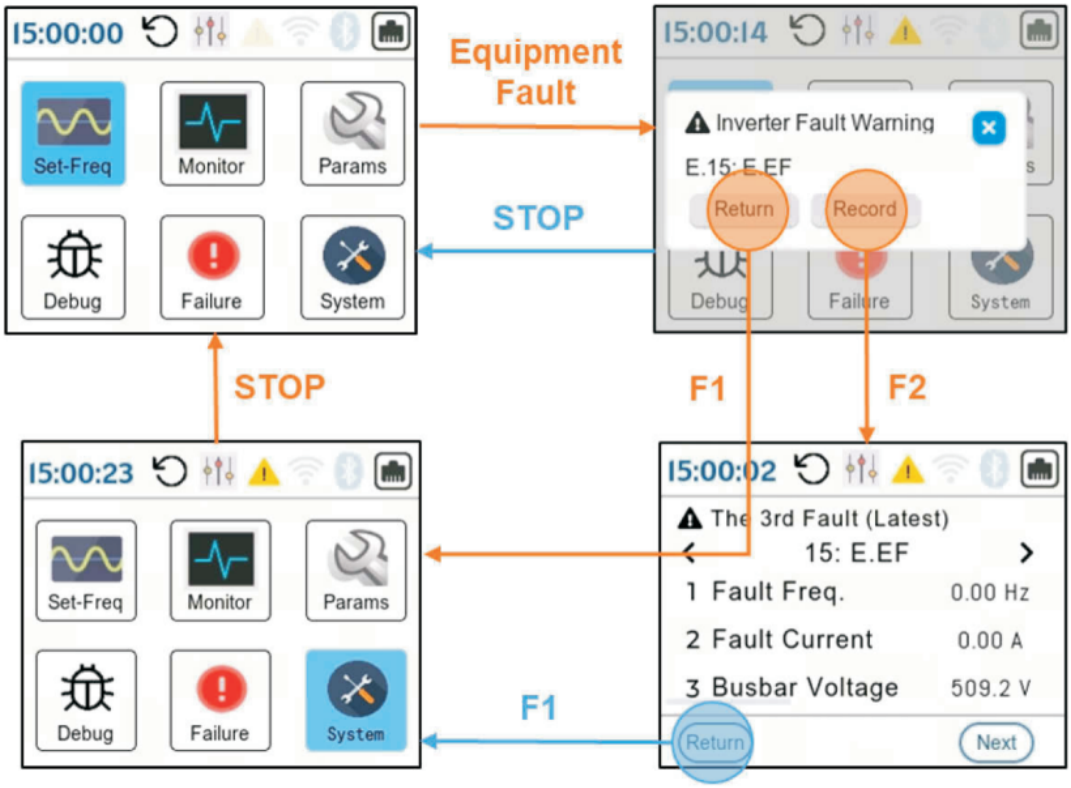


Figure 2.7.1 Inverter fault menu navigation

2.7.2 Failure logs

Each fault can be accessed from "Failure" in the Home menu.

Figure 2.7.2 Fault log menu navigation

The three most recent faults will be recorded. Each entry will display the type of fault and the corresponding time. If there are no faults, the time will not be displayed.

Figure 2.7.3 Fault log page

Select any fault log to access the detail page, which provides comprehensive information such as the type of fault, the parameters at the time of the fault, and the time of occurrence, as illustrated in Figure 2.7.4.

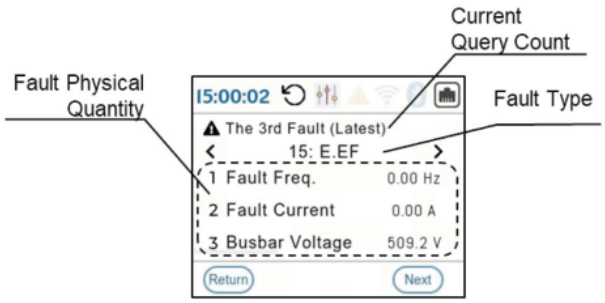


Figure 2.7.4 Fault log details page

On this page, users can navigate fault information using the left and right buttons. The correspondence between the parameter information and the parameter group number is detailed in Table 2.7.1.

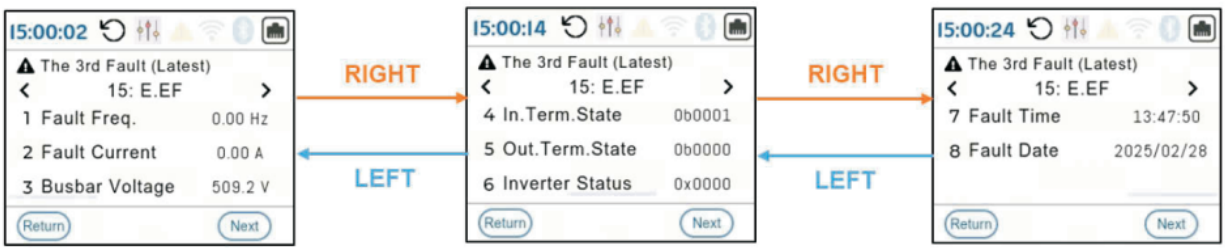


Figure 2.7.5 Fault log detail page navigation

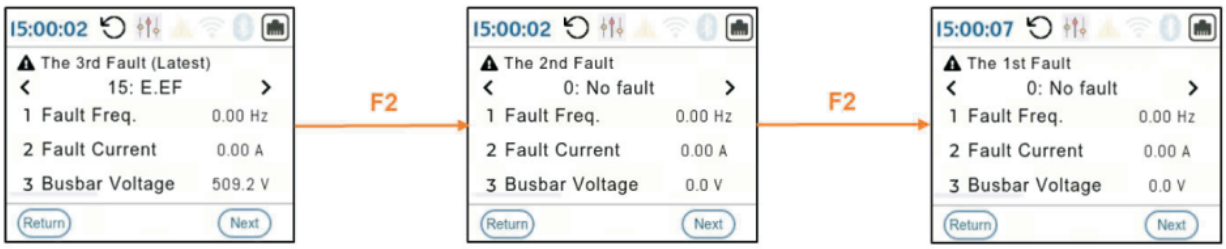


Figure 2.7.6 Switching between the fault log details page

Table 2.7.1 Fault log parameters

Fault log parameter	Third failure(most recent)	Second failure	First failure
Type of fault	FE-16	FE-15	FE-14
Output frequency	FE-17	FE-27	FE-37
Output current	FE-18	FE-28	FE-38
DC Bus voltage	FE-19	FE-29	FE-39
Input terminal status	FE-20	FE-30	FE-40
Output terminal status	FE-21	FE-31	FE-41
Inverter status	FE-22	FE-32	FE-42
Time	No corresponding parameter group		
Date			

2.8 System setting

The system setting includes configurations for the LCD operation panel such as language, brightness, time, and other system information. The setting can be accessed from "System " on the home screen.

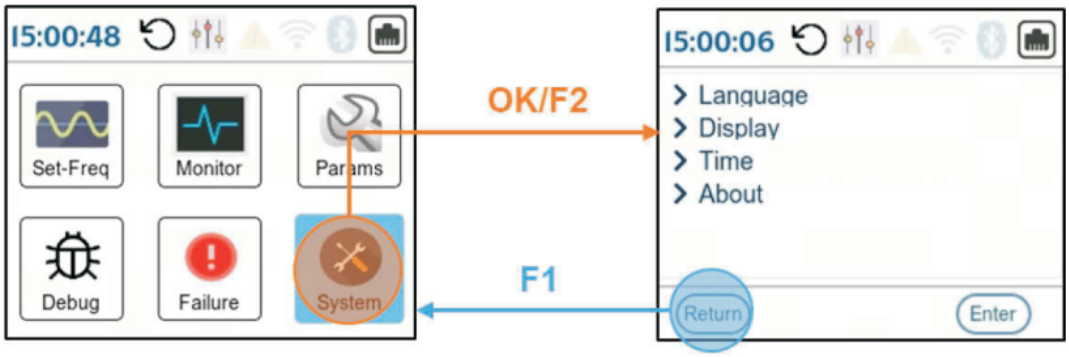


Figure 2.8.1 System setting menu navigation

2.8.1 Language settings

The operator panel currently supports Simplified Chinese (zh-CN), English (en-GB), Russian (ru-RU) and Spanish (es-ES).

Upon selecting and entering "Language" option, utilize the directional buttons to select the desired language. Subsequently, press OK/F2 to confirm your selection. The characters displayed (excluding the language option) will then be converted to the selected language's characters.

Figure 2.8.2 System language setup

2.8.2 Display brightness adjustment

Use the left and right keypad buttons to adjust screen brightness from 0 (20%) to 100 (brightest), then press OK/F2 to confirm.

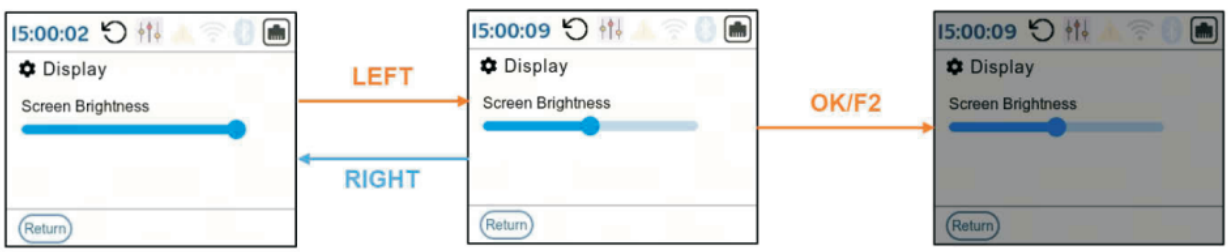


Figure 2.8.3 Display brightness adjustment

2.8.3 Time setting

The time setting adjusts the RTC real-time display and fault logs. It can be set from 1/1/2000 to 12/31/2099.

Users can modify "Year/Month/Day Hour:Minute:Second" via drop-down boxes.

Use Left/Right to switch options, OK to open options, Up/Down to adjust options, and then OK/F2 to select. Press the "OK" button for changes to take effect.

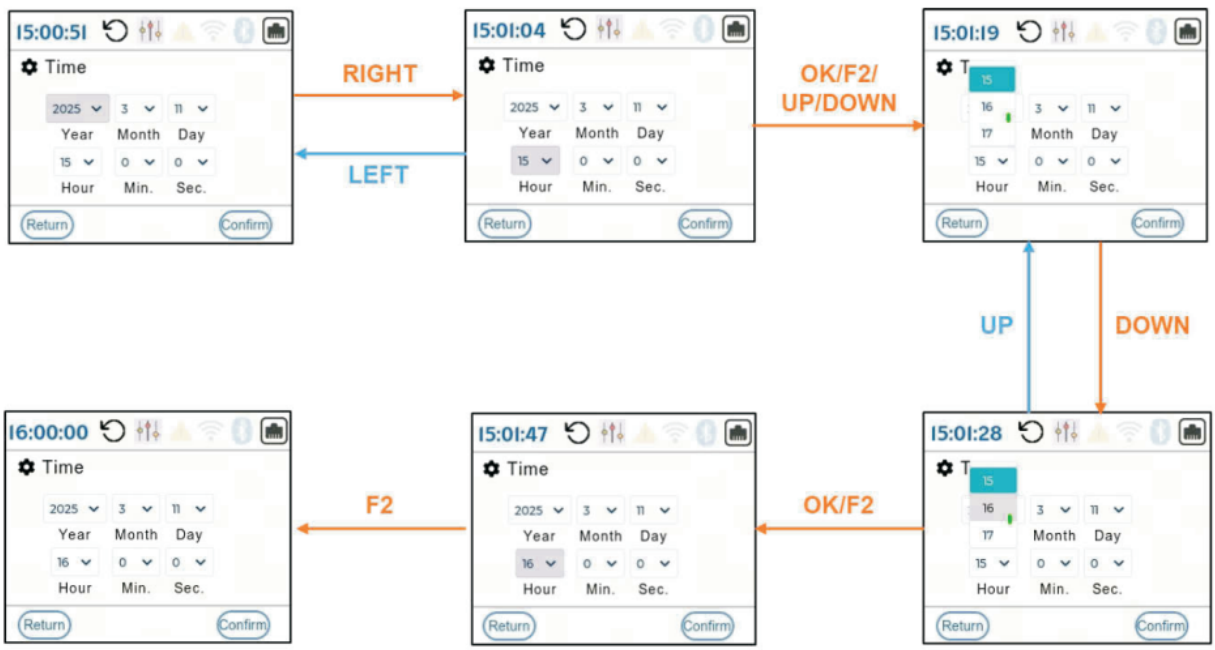


Figure 2.8.4 Steps for time setting

2.8.4 About

The About section details the system version of the LCD operation panel, inverter model compatibility, and the latest update date.

During a firmware update, the LCD panel updates parameter attributes on power-up and then enters the system normally.

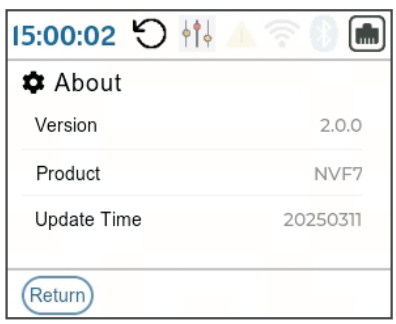


Figure 2.8.5 About page

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LCD Operation Panel for
NVF7 Inverter
EN/IEC 61800-3

Check 05

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

CHINT ELECTRICS

LCD Operation Panel for NVF7 Inverter
User Instruction

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