Preface

Thank you for purchasing the series AC drive.

The series AC drive is a general-purpose high-performance current vector control AC drive. It can implement the control of asynchronous motor . It increases the user programmable function, background monitoring software and communication bus function, and supports multi-kind PG cards. It is used to drive various automation production equipment involving textile, paper-making, wiredrawing, machine tool, packing, food, fan and pump.

This manual describes the correct use of the series AC drive, including selection, parameter setting, commissioning, maintenance & inspection. Read and understand the manual before use and forward the manual to the end user.

Notes

- •The drawings in the manual are sometimes shown without covers or protective guards. Remember to install the covers or protective guards as specified first, and then perform operations in accordance with the instructions.
- •The drawings in the manual are shown for description only and may not match the product you purchased.
- •The instructions are subject to change, without notice, due to product upgrade, specification modification as well as efforts to increase the accuracy and convenience of the manual.
- •Contact our agents or customer service center if you have problems during the use.

Safety Information and Precautions

In this manual, the notices are graded based on the degree of danger:

DANGER indicates that failure to comply with the notice will result in severe personal injury or even death.

WARNING indicates that failure to comply with the notice will result in personal injury or property damage.

Read this manual carefully so that you have a thorough understanding. Installation, commissioning or maintenance may be performed in conjunction with this chapter.We will assume no liability or responsibility for any injury or loss caused by improper operation.

Safety Information

Use Stage	Safety Grade	Precautions
Before installation	DANGER	 Do not install the equipment if you find water seepage, component missing or damage upon unpacking. Do not install the equipment if the packing list does not conform to the product you received.
	WARNING	 Handle the equipment with care during transportation to prevent damage to the equipment. Do not use the equipment if any component is damaged or missing. Failure to comply will result in personal injury. Do not touch the components with your hands. Failure to comply will result in static electricity damage.
During installation	DANGER	 Install the equipment on incombustible objects such as metal, and keep it away from combustible materials. Failure to comply may result in a fire. Do not loosen the fixed screws of the components, especially the screws with red mark.

Use Stage	Safety Grade	Precautions
During installation		 Do not drop wire end or screw into the AC drive. Failure to comply will result in damage to the AC drive. Install the AC drive in places free of vibration and direct sunlight. When two AC drives are laid in the same cabinet, arrange the installation positions properly to ensure the cooling effect.
	 Wiring must be performed only by qualified personnel under instructions described in this manual. Failure to comply may result in unexpected accidents. DANGER A circuit breaker must be used to isolate the power supply and the AC drive. Failure to comply may result in a fire. Ensure that the power supply is cut off before wiring. Failure to comply may result in electric shock. Tie the AC drive to ground properly by standard. Failure to comply may result in electric shock. 	
At winny	WARNING	 Never connect the power cables to the output terminals (U, V, W) of the AC drive. Pay attention to the marks of the wiring terminals and ensure correct wiring. Failure to comply will result in damage to the AC drive. Never connect the braking resistor between the DC bus terminals (+) and (-). Failure to comply may result in a fire. Use wire sizes recommended in the manual. Failure to comply may result in accidents. Use a shielded cable for the encoder, and ensure that the shielding laver is reliably grounded.

User Manu	al	
Use Stage	Safety Grade	Precautions
Before power-on	DANGER	 Check that the following requirements are met: The voltage class of the power supply is consistent with the rated voltage class of the AC drive. The input terminals (R, S, T) and output terminals (U, V, W) are properly connected. No short-circuit exists in the peripheral circuit. The wiring is secured. Failure to comply will result in damage to the AC drive Do not perform the voltage resistance test on any part of the AC drive because such test has been done in the factory. Failure to comply will result in accidents.
		 Cover the AC drive properly before power-on to prevent electric shock. All peripheral devices must be connected properly under the instructions described in this manual. Failure to comply will result in accidents
		 Do not open the AC drive's cover after power-on. Failure to comply may result in electric shock. Do not touch any I/O terminal of the AC drive. Failure to comply may result in electric shock.
After power-on		 Do not touch the rotating part of the motor during the motor auto-tuning or running. Failure to comply will result in accidents. Do not change the default settings of the AC drive. Failure to comply will result in damage to the AC drive
During operation		 Do not touch the fan or the discharging resistor to check the temperature. Failure to comply will result in personal burnt. Signal detection must be performed only by qualified personnel during operation. Failure to comply will result in personal injury or damage to the AC drive.

Use Stage	Safety Grade	Precautions
During	DANGER	 Do not touch the fan or the discharging resistor to check the temperature. Failure to comply will result in personal burnt. Signal detection must be performed only by qualified personnel during operation. Failure to comply will result in personal injury or damage to the AC drive.
operation		 Avoid objects falling into the AC drive when it is running. Failure to comply will result in damage to the AC drive. Do not start/stop the AC drive by turning the contactor ON/OFF. Failure to comply will result in damage to the AC drive.
During maintenance	DANGER	 Repair or maintenance of the AC drive may be performed only by qualified personnel. Failure to comply will result in personal injury or damage to the AC drive. Do not repair or maintain the AC drive at power-on. Failure to comply will result in electric shock. Repair or maintain the AC drive only ten minutes after the AC drive is powered off. This allows for the residual voltage in the capacitor to discharge to a safe value. Failure to comply will result in personal injury. Ensure that the AC drive is disconnected from all power supplies before starting repair or maintenance on the AC drive. Set and check the parameters again after the AC drive is replaced. All the pluggable components must be plugged or removed only after power-off. The rotating motor generally feeds back power to the AC drive. As a result, the AC drive is still charged even if the motor stops, and the power supply is cut off. Thus ensure that the AC drive is disconnected from the motor before starting repair or maintenance on the AC drive.

General Precautions

1) Requirement on residual current device (RCD)

The AC drive generates high leakage current during running, which flows through the protective earthing (PE) conductor. Thus install a type-B RCD at primary side of the power supply. When selecting the RCD, you should consider the transient and steady- state leakage current to ground that may be generated at startup and during running of the AC drive. You can select a specialized RCD with the function of suppressing high harmonics or a general-purpose RCD with relatively large residual current.

2) High leakage current warning

The AC drive generates high leakage current during running, which flows through the PE conductor. Earth connection must be done before connection of power supply. Earthing shall comply with local regulations and related IEC standards.

3) Motor insulation test

Perform the insulation test when the motor is used for the first time, or when it is reused after being stored for a long time, or in a regular check-up, in order to prevent the poor insulation of motor windings from damaging the AC drive. The motor must be disconnected from the AC drive during the insulation test. A 500-V mega-Ohm meter is recommended for the test. The insulation resistance must not be less than 5 M Ω .



4) Thermal protection of motor

If the rated capacity of the motor selected does not match that of the AC drive, especially when the AC drive's rated power is greater than the motor's, adjust the motor protection parameters on the operation panel of the AC drive or install a thermal relay in the motor circuit for protection.

5) Running at over 50 Hz

The AC drive provides frequency output of 0 to 3200 Hz (Up to 300 Hz is supported if the AC drive runs in CLVC and SFVC mode). If the AC drive is required to run at over 50 Hz, consider the capacity of the machine.

6) Vibration of mechanical device

The AC drive may encounter the mechanical resonance point at some output frequencies, which can be avoided by setting the skip frequency.

7) Motor heat and noise

The output of the AC drive is pulse width modulation (PWM) wave with certain harmonic frequencies, and therefore, the motor temperature, noise, and vibration are slightly greater than those when the AC drive runs at power frequency (50 Hz).

8) Voltage-sensitive device or capacitor on output side of the AC drive

Do not install the capacitor for improving power factor or lightning protection voltage- sensitive resistor on the output side of the AC drive because the output of the AC drive is PWM wave. Otherwise, the AC drive may suffer transient overcurrent or even be damaged.



9) Contactor at the I/O terminal of the AC drive

When a contactor is installed between the input side of the AC drive and the power supply, the AC drive must not be started or stopped by switching the contactor on or off. If the AC drive has to be operated by the contactor, ensure that the time interval between switching is at least one hour since frequent charge and discharge will shorten the service life of the capacitor

inside the AC drive.

When a contactor is installed between the output side of the AC drive and the motor, do not turn off the contactor when the AC drive is active. Otherwise, modules inside the AC drive may be damaged.



Do not start /stop the AC drive by switching the contactor on /off . If the AC drive has to be operated by the contactor , ensure that the time interval is at least one hour Turn on /off the contactor when the AC drive has no output . Otherwise, modules inside the AC drive may be damaged .

10) When external voltage is out of rated voltage range

The AC drive must not be used outside the allowable voltage range specified in this manual. Otherwise, the AC drive's components may be damaged. If required, use a corresponding voltage step-up or step-down device.

11) Prohibition of three-phase input changed into two-phase input Do not change the three-phase input of the AC drive into two-phase input. Otherwise, a fault will result or the AC drive will be damaged.

12) Surge suppressor

The AC drive has a built-in voltage dependent resistor (VDR) for suppressing the surge voltage generated when the inductive loads (electromagnetic contactor, electromagnetic relay, solenoid valve, electromagnetic coil and electromagnetic brake) around the AC drive are switched on or off. If the inductive loads generate a very high surge voltage, use a surge suppressor for the inductive load or also use a diode.

Note

Do not connect the surge suppressor on the output side of the AC.

13) Altitude and de-rating

In places where the altitude is above 1000 m and the cooling effect reduces

due to thin air, it is necessary to de-rate the AC drive. Contact us for technical support.

14) Some special usages

If wiring that is not described in this manual such as common DC bus is applied, contact the agent or us for technical support.

15) Disposal

The electrolytic capacitors on the main circuits and PCB may explode when they are burnt. Poisonous gas is generated when the plastic parts are burnt. Treat them as ordinary industrial waste.

16) Adaptable Motor

- The standard adaptable motor is adaptable four-pole squirrel-cage asynchronous induction motor or PMSM. For other types of motor, select a proper AC drive according to the rated motor current.
- The cooling fan and rotor shaft of non-variable-frequency motor are coaxial, which results in reduced cooling effect when the rotational speed declines. If variable speed is required, add a more powerful fan or replace it with variable-frequency motor in applications where the motor overheats easily.
- The standard parameters of the adaptable motor have been configured inside the AC drive. It is still necessary to perform motor auto-tuning or modify the default
- values based on actual conditions. Otherwise, the running result and protection performance will be affected.
- The AC drive may alarm or even be damaged when short-circuit exists on cables or inside the motor. Therefore, perform insulation short-circuit test when the motor and cables are newly installed or during routine maintenance. During the test,

make sure that the AC drive is disconnected from the tested part.

Product Information

Designation Rules and Nameplate of the DRIVE





Electrical Installation

Description of Main Circuit Terminals

Description of Main Circuit Terminals of Three-phase AC drive





Description of Control Circuit Terminals

Terminal Arrangement of Control Circuit



Wiring mode of the AC drive control circuit



Note

- All the series AC drives have the same wiring mode. The figure here shows the wiring of single-phase 220 VAC drive.
 © indicates main circuit terminal, while ○ indicates control circuit terminal.
- When the external operation panel is connected, the display of the operation panel on the DRIVE goes off.

Physical Appearance and Overall Dimensions of the DRIVE

Physical appearance and overall dimensions of the DRIVE (plastic housing) \mathbf{W}



Mode1	H (mm)	H1 (mm)	W (mm)	A (mm)	D (mm)	Mounting Hole diameter(mm)	
0.75KW							
1.5KW	263	252	130	90	145	Φ5	
2.2KW							
3.7KW							
5.5KW	265	255	152	90	157	Φ6	
7.5KW							
11KW	370	360	182	140	152	Φ6	
15KW							
18.5KW	375	364	265	220	155	Φ7.5	
22KW	400	204	075		170	A 7.5	
30KW	400	384	275	220	170	Ψ7.5	
37KW							
45KW	560	540	375	260	247	Φ10	
55KW							
75KW							
90KW	718	697	342	260	266	Φ10	
110KW							

Overall dimensions and mounting hole dimensions of the DRIVE

Operation, Display and Application Examples

Operation Panel

You can modify the parameters, monitor the working status and start or stop the Drive by

operating the operation panel, as shown in the following

figure. Diagram of the operation panel.





Description of Indicators

RUN

ON indicates that the AC drive is in the running state, and OFF indicates that the AC drive is in the stop state

LOCAL/REMOT

It indicates whether the AC drive is operated by means of operation panel,

terminals or communication.

○ LOCAL/REMOT: OFF	Operation panel control
LOCAL/REMOT: ON	Terminal control
LOCAL/REMOT: blinking	Communication control

•FWD/REV

ON indicates reverse rotation, and OFF indicates forward rotation.

•TUNE/TC

When the indicator is ON, it indicates torque control mode. When the indicator is blinking slowly, it indicates the auto-tuning state. When the indicator is blinking quickly, it indicates the fault state.

Unit Indicators

means that the indicator is ON, and O means that the indicator is OFF.

 $\begin{array}{cccc} & & & & & & & \\ & & & & & & & \\ & & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ &$

Digital Display

The 5-digit LED display is able to display the set frequency, output frequency, monitoring data and fault codes.

Description of Keys on the Operation Panel

Key	Name	Function
PRG	Programming	Enter or exit Level I menu.
ENTER	Confirm	Enter the menu interfaces level by level, and confirm the parameter setting.
	Increment Increase data or function code. Decrement Decrease data or function code.	
Shift Select the displayed parameters in turn in the stop or runn state, and select the digit to be modified when modifying parameters. RUN RUN Start the AC drive in the operation panel control mode. Stop: Stop/Reset Stop the AC drive when it is in the running state and perfor reset operation when it is in the fault state. The functions of key are restricted in P7-02.		Select the displayed parameters in turn in the stop or running state, and select the digit to be modified when modifying parameters.
		Start the AC drive in the operation panel control mode.
		Stop the AC drive when it is in the running state and perform the reset operation when it is in the fault state. The functions of this key are restricted in P7-02.
MF.K	MILITY Multifunction Perform function switchover (such as quick switchover of command source or direction) according to the setting of	
QUICK	Menu mode selection	Perform <u>switchover</u> between menu modes according to the setting of PP-03.

Viewing and Modifying Function Code

The operation panel of the drive adopts three-level menu.

The three-level menu consists of function code group (Level I), function code (Level II), and function code setting value (level III), as shown in the following figure.

Operation procedure on the operation panel



You can return to Level II menu from Level III menu by pressing (PRG) or ENTER

- After you press the parameter setting first, and then goes back to Level II menu and shifts to the next function code.
- After you press region, the system does not save the parameter setting, but directly returns to Level II menu and remains at the current function code.

Here is an example of changing the value of P3-02 to 15.00 Hz.

Figure 4-3 Example of changing the parameter value



In Level III menu, if the parameter has no blinking digit, it means that the parameter cannot

be modified. This may be because:

•Such a function code is only readable, such as, AC drive model, actually detected parameter and running record parameter.

•Such a function code cannot be modified in the running state and can only be changed at stop.

Setting and Auto-tuning of Motor Parameters Motor Auto-tuning

To obtain the motor parameters, the AC drive can perform dynamic auto-tuning or static auto-tuning. For the asynchronous motor that cannot be disconnected from

the load, you can input the motor parameters of the same model that was successfully auto-tuned before.

	Application	Result
No-load	It is applied to applications where the motor (synchronous motor or	
dynamic	asynchronous motor) can be disconnected from the load.	Best
With-load It is applied to applications where the motor (synchronous motor or dynamic asynchronous motor) cannot be disconnected from the load. O		
		ок
Static auto-tuning	It is applied to applications where the motor (asynchronous motor only) cannot be disconnected from the load and dynamic auto-tuning is not allowed.	Poor
Manual input	It is applied to applications where the motor (asynchronous motor only) cannot be disconnected from the load. Input the motor parameters of the same model that was successfully auto- tuned before into function codes P1-00 to P1-10.	ок

The following motor auto-tuning description takes motor 1 as an example. The auto-tuning of motor 2, 3, and 4 is the same and only the function codes are changed correspondingly.

The process of motor auto-tuning is as follows:

- If the motor can be disconnected from the load, disconnect the motor from the load mechanically after power-off so that the motor can run without load.
- After power-on, set P0-02 (Command source selection) to 0 (Operation panel control).

Motor	Parameter	
Motor 1	P1-00: Motor type selection P1-01: Rated motor power P1-02:	
	Rated motor voltage P1-03: Rated motor current	
	P1-04: Rated motor frequency	
	P1-05: Rated motor rotational speed	
Motor 2	H2-00 to H2-05, defined the same as P-00 to P1-05	
Motor3	H3-00 to H3-05, defined the same as P1-00 to P1-05	
Motor 4	H4-00 to H4-05, defined the same as P1-00 to P1-05	

 Input the motor nameplate parameters (such as P1-00 to P1-05) correctly and input the following parameters based on the actually selected motor. For asynchronous motor, set P1-37 (Auto-tuning selection) to 2 (Asynchronous motor complete auto-tuning). For motors 2, 3, or 4, the corresponding function code is

H2-37/ H3-37/ H4-37. Press

on the operation panel. The operation panel displays:



Then press RUN on the operation panel. The AC drive will drive the motor to accelerate/decelerate and run in the forward/reverse direction, and the RUN indicator is ON. The auto-tuning lasts approximately 2 minutes. When the preceding display information disappears and the operation panel returns to the normal parameter display status, it indicates that the auto-tuning is complete.

Function Code Table

Group P and Group H are standard function parameters. Group S includes the monitoring function parameters.

The symbols in the function code table are described as follows:

"☆": The parameter can be modified when the AC drive is in either stop or running state. "★": The

parameter cannot be modified when the AC drive is in the running state.

"•": The parameter is the actually measured value and cannot be modified.

"*": The parameter is factory parameter and can be set only by the manufacturer.

Standard Function Parameters

Function Code	Parameter Name	Setting Range	Default	Property
	Group P0: S	Standard Function Parameters		
P0-00	G/P type display	1: G type (constant torque load) 2: P type (variable torque load e.g. fan and pump)	Model dependent	•
P0-01	Motor 1 control mode	0: Sensorless flux vector control (SFVC) 1: Closed-loop vector control (CLVC) 2: Voltage/Frequency (V/F) control	2	*
P0-02	Command source selection	0: Operation panel control (LED off) 1: Terminal control (LED on) 2: Communication control (LED blinking)	0	☆
P0-03	Main frequency source X selection	0: Digital setting (non-retentive at power failure) 1: Digital setting (retentive at power failure) 2: Al1 3: Al2 4: Keyboard potentiometer 5: Pulse setting (DI5) 6: Multi-reference 7: Simple PLC 8: PID 9: Communication setting	4	*

	P0-04	Auxiliary frequency source Y	The same as F0-03 (Main	0	*
		Selection		0	
	P0-05	Range of auxiliary frequency Y	0: Relative to maximum frequency	0	~
	10-05	for X and Y operation	1: Relative to main frequency X	0	~
	P0-06	Range of auxiliary frequency Y for X and Y operation	0%–150%	100%	☆
			Unit's digit (Frequency source selection)		
	P0-07	Frequency source selection	0: Main frequency source X 1: X and Y operation (operation relationship determined by ten's digit) 2: Switchover between X and Y 3: Switchover between X and "X and Y operation" 4: Switchover between Y and "X and Y operation" Ten's digit (X and Y operation	00	**
			relationship) 0: X+Y 1: X-Y 2: Maximum 3: Minimum		
	P0-08	Preset frequency	0.00 to maximum frequency (valid when frequency source is digital setting)	50.00 Hz	☆
ĺ			0: Same direction	0	-
	P0-09	Rotation direction	1: Reverse direction	U	ਕ
	P0-10	Maximum frequency	50.00–500.00 Hz	50.00 Hz	
	P0-11	Source of frequency upper limit	0: Set by P0-12 1: Al1 2: Al2 3: Al3 4: Pulse setting (DI5) 5: Communication setting	0	*

P0-12	Frequency upper limit	Frequency lower limit (P0-14) to maximum frequency (P0-10)	50.00 Hz	☆
P0-13	Frequency upper limit offset	0.00 Hz to maximum frequency (P0-10)	0.00 Hz	☆
P0-14	Frequency lower limit	0.00 Hz to frequency upper limit (P0-12)	0.00 Hz	☆
P0-15	Carrier frequency	0.5–16.0 kHz	Model dependent	☆
P0-16	Carrier frequency adjustment with temperature	0: No 1: Yes	1	\$
P0-17	Acceleration time 1	0.00–650.00s (P0-19 = 2) 0.0–6500.0s (P0-19 = 1) 0–65000s (P0-19 = 0)	Model dependent	☆
P0-18	Deceleration time 1	0.00–650.00s (P0-19 = 2) 0.0–6500.0s (P0-19 = 1) 0–65000s (P0-19 = 0)	Model dependent	\$
P0-19	Acceleration/Deceleration time unit	0:1s 1: 0.1s 2: 0.01s	1	*
P0-20	Retaining			
P0-21	Frequency offset of auxiliary frequency source for X and Y operation	0.00 Hz to maximum frequency (P0-10)	0.00 Hz	☆
P0-22	Frequency reference resolution	2: 0.01 Hz	2	*
P0-23	Retentive of digital setting frequency upon power failure	0: Not retentive 1: Retentive	0	☆
P0-24	Motor parameter group selection	0: Motor parameter group 1 1: Motor parameter group 2	0	
P0-25	Acceleration/Deceleration time base frequency	0: Maximum frequency (P0-10) 1: Set frequency 2: 100 Hz	0	*

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P0-26	Base frequency for UP/ DOW! modification during running	0: Running frequency 1: Set frequency	0	*
P0-27	Binding command source to frequency source	Unit's digit (Binding operation panel command tofrequency source) 0: No binding 1: Frequency source by digital setting 2: Al1 3: Al2 4: Al3 5: Pulse setting (DI5) 6: Multi-reference Ten's digit (Binding terminal command to frequency source) 0–9, same as unit's digit Hundred's digit (Binding communication command to frequency source) 0–9, same as unit's digit	000	Ŷ
P0-28	Serial communication protocol	0: Modbus protocol 1: Profibus-DP bridge 2: CANopen bridge	0	☆
Group P1	: Motor 1 Parameters			
P1-00	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor	0	*
P1-01	Rated motor power	0.1–1000.0 kW	Model dependent	*
P1-02	Rated motor voltage	1–2000 V	Model dependent	*
P1-03	Rated motor current	0.01–655.35 A (AC drive power ≤ 55 kW) 0.1–6553.5 A (AC drive power >	Model dependent	*
P1-04	Rated motor frequency	0.01 Hz to maximum frequency	Model dependent	*

Lisor Manual

Model Rated motor rotational speed 1-65535 RPM * P1-05 dependent Stator resistance 0.001–65.535 Ω (AC drive power ≤ 55 Model (asynchronous motor) kW) 0.0001-6.5535 Q (AC drive P1-06 * dependent power > 55 kW) Rotor resistance 0.001–65.535 Ω (AC drive power≤ 55 Model (asynchronous motor) kW) 0.0001–6.5535 Ω (AC drive P1-07 dependent power > 55 kW) * Leakage inductive reactance 0.01–655.35 mH (AC drive power ≤ Model P1-08 (asynchronous motor) 55 kW) 0.001-65.535 mH (AC dependent drive * Mutual inductive reactance 0.1–6553.5 mH (AC drive power ≤ 55 Model P1-09 (asynchronous motor) 0.01--655.35 mH (AC drive kW) dependent power > 55 kW) * No-load current 0.01 to F1-03 (AC drive power ≤55 Model P1-10 (asynchronous motor) kW) 0.1 to F1-03 (AC drive power dependent >55 kW) * 0.001–65.535 Ω (AC drive power ≤ 55 Model P1-16 Stator resistance kW) 0.0001–6.5535 Ω (AC drive dependent (synchronous motor) power $> 55 \, kW$) * Shaft D inductance 0.01–655.35 mH (AC drive powe r≤ Model 55 kW) 0.001–65.535 mH (AC drive (synchronous motor) P1-17 dependent power > 55 kW) ★ Shaft Q inductance 0.01–655.35 mH (AC drive power ≤ Model (synchronous motor) 55 kW) 0.001-65.535 mH (AC P1-18 ★ dependent drive power > 55 kW) Back EMF (synchronous 0.1-6553.5 V Model P1-20 * motor) dependent P1-27 Encoder pulses per revolution 1-65535 1024 * 0. ABZ incremental encoder 1. UVW incremental encoder Encoder type 2: Resolver P1-28 0 * 3: SIN/COS encoder 4: Wire-saving UVW encoder

P1-30	A/B phase sequence of ABZ	: Forward	-	*
	incremental encoder 1	: Reserve	0	
P1-31	Encoder installation angle	0.0°–359.9°	0.0°	*
P1-32	U, V, W phase sequence of	0: Forward	0	
	UVW encoder	1: Reverse	0	*
P1-33	UVW encoder angle offset	0.0°–359.9°	0.0°	*
	Number of pole pairs of	1–65535	1	*
P1-34	resolver			
	Encoder wire-break fault	0.0s: No action		
P1-36	detection time	0.1–10.0s	0.0s	*
		0: No auto-tuning		
		1: Asynchronous motor static		
		auto-tuning		
		2: Asynchronous motor complete		
		auto-tuning		
		11: Synchronous motor with-load		
P1-37	Auto-tuning selection	auto-tuning	0	*
		12: Synchronous motor no-load		
		auto-tuning		
	Gro	up P2: Vector Control Parameters		
P2-00	Speed loop proportional gain 1	0–100	3	☆
P2-01	Speed loop integral time 1	0.01–10.00s	0.50s	☆
P2-02	Switchover frequency 1	0.00 to F2-05	5.00 Hz	☆
P2-03	Speed loop proportional gain 2	2 0–100	2	☆
P2-04	Speed loop integral time 2	0.01–10.00s	1.00s	☆
P2-05	Switchover frequency 2	P2-02 to maximum output	10.00 Hz	☆
		frequency		
P2-06	Vector control slip gain	50%-200%	100%	☆
P2-07	Time constant of speed loop filter	0.000–0.100s	0.000s	\$

P2-08	Vector control over- excitation	0–200	64	\$
P2-09	Torque upper limit source in speed control mode	0: P2-10 1: Al1 2: Al2 3: Al3 4: Pulse setting (DI5) 5: Communication setting	0	\$
P2-10	Digital setting of torque upper limit in speed control mode	0.0%–200.0%	150.0%	☆
P2-13	Excitation adjustment proportional gain	0–20000	2000	☆
P2-14	Excitation adjustment integral gain	0–20000	1300	☆
P2-15	Torque adjustment proportional gain	0–20000	2000	☆
P2-16	Torque adjustment integral gain	0–20000	1300	☆
P2-17	Speed loop integral property	Unit's digit: integral separation 0: Disabled 1: Enabled	0	\$

P2-20					
	Maximum output voltage	•	100%–110%	105%	☆
	Gro	oup P3	: V/F Control Parameters		
		0: Lin	ear V/F		
		1: Mu	lti-point V/F		
		2: Sq	uare V/F		
		3: 1.2	-power V/F		
		4: 1.4	-power V/F		
P3-00	V/F curve setting	6: 1.6	-power V/F	0	*
		8: 1.8	-power V/F		
		9: Re	served		
		10: V/	/F complete separation 11: V/F		
		half s	eparation		
D2 01	Torque boost		0.0% (fixed torque boost)	Model	
F3-01			0.1%-30.0%	dependent	☆
D0.00	Cut-off frequency of torq	ue	0.00 Hz to maximum output		
P3-02	boost		frequency	50.00 Hz	*
D0.00	Multi-point V/F frequence	:y	0.00 Hz to P3-05	0.00 Hz	
P3-03	1(F1)				*
P3-04	Multi-point V/F voltage 1	(V1)	0.0%—100.0%	0.0%	*
P3-05	Multi-point V/F frequency 2	2 (F2)	P3-03 to P3-07	0.00 Hz	*
P3-06	Multi-point V/F voltage 2 (V2)	0.0%–100.0%	0.0%	*
			P3-05 to rated motor frequency		
			(P1-04)		
			Note: The rated frequencies		
P3-07	Multi-point V/F frequency 3	3 (F3)	of motors 2, 3, and 4 are		
			respectively set in H2-04, H3-04,	0.00 Hz	*
			and H4-04.		
P3-08	Multi-point V/F voltage 3	(V3)	0.0%–100.0%	0.0%	*
P3-09	V/F slip compensation ga	in	0%–200.0%	0.0%	☆
P3-10	V/F over-excitation gain		0–200	64	☆
P3-11	V/F oscillation suppressio	'n	0–100	Model dependent	☆

		0: Digital setting (P3-14) 1: Al1		
		2: AI2		
		3: AI3		
		4: Pulse setting (DI5)		
		5: Multi-reference		
P3-13	Voltage source for V/F	6: Simple PLC		
	separation	7: PID	0	
		8: Communication setting 100.0%		
		corresponds to the rated		☆
		motor voltage (P1-02, H4-02, H5-		
		02, H6-02).		
	Voltage digital setting for V/	0 V to rated motor voltage		
P3-14	F separation		0 V	\$
		0.0–1000.0s		
P3-15	Voltage rise time of V/F	It indicates the time for the voltage		
	separation	rising from 0 V to rated motor	0.0s	
		voltage.		**
		0.0–1000.0s		
P3-16	Voltage decline time of V/F	It indicates the time for the voltage		
	separation	to decline from rated motor voltage	0.0s	
		to 0 V.		\$
		0: Frequency and voltage declining		
P3-17	Stop mode selection upon	to 0 independently		
	V/F separation	1: Frequency declining after voltage	0	
		declines to 0		\$
[

	Group P4: Input Terminals			
P4-00	DI1 function selection	0: No function	1	+
		1: Forward RUN (FWD)		
D4 04		2: Reverse RUN (REV)		
P4-01	DI2 function selection	3: Three-line control	2	*
		4:Forward JOG (FJOG)		
P4-02	DI3 function selection	5:ReverseJOG (RJOG)		
		6: Terminal UP		
		7: Terminal DOWN		
		8: Coast to stop		
		9: Fault reset (RESET)		
		10: RUN pause		
		11: Normally open (NO) input of		
		external fault	9	×
		12:Multi-reference terminal 1		
		13:Multi-reference terminal 2		
		14:Multi-reference terminal 3		
		15:Multi-reference terminal 4		
		16:Terminal1foracceleration/		
		deceleration time selection		
		17:Terminal 2 for acceleration/		
P4-03	DI4 function selection	decelerationtimeselectn		
		18:Frequency source switchover		
		19: UP and DOWN setting clear		
		(terminal, operation panel)	12	*
		20:Commandsource switchover		
		terminal 1		
		21:Acceleration/Deceleration		
		22: PID pause		
		23:PLC status reset		
		24. Swillg pause		
P4-04	DIE function colocition	25. Counter Input		
	LIS TUNCTION SELECTION	20. Counter reset	13	*
		20. Length reset		
		29. Torquecontrol prohibited		

Function Code	Parameter Name	Setting Range	Default	Property
P4-05	DI6 function selection	 Pulse input (enabled only for DI5) Reserved Immediate DC braking Normally closed (NC) input of external fault Frequency modification forbidden 	0	*
P4-06	DI7 function selection	35: Reverse PID action direction 36: External STOP terminal 1 37: Command source switchover terminal 2 38: PID integral pause	0	*
P4-07	DI8 function selection	39: Switchover between main frequency source X and preset frequency 40:Switchover between auxiliary frequency source Y	0	*
P4-08	DI9 function selection	and preset frequency 41: Motor selection terminal 1 42: Motor selection terminal 2 43:PIDparameter switchover 44: User-defined fault 1 45: User-defined fault 2 46: Speed control/Torque control switchover 47: Emergency stop 48: External STOP terminal 2 49: Deceleration DC braking 50: Clear the current running time 51:Switchover between two-line	0	*
P4-09	DI10 function selection	mode and three-line mode	0	*
P4-10	DI filter time	0.000–1.000s	0.010s	\$
P4-11	Terminal command mode	0: Two-line mode 1 1: Two-line mode 2 2: Three-line mode 1 3: Three-line mode 2 0.01-65.535 Hz/s	0	*
P4-12	Al curve 1 minimum input	0.00 V to P4-15	0.001/	и Ф
			0.00 V	

Function	Parameter Name	Setting Range	Default	Property
Code		Unit's digit (Al1 curve selection)		
		Curve 1 (2 points, see P4-13 to P4-16)		
		Curve 2 (2 points, see P4-18 to P4-21)		
		Curve 3 (2 points, see P4-23 to P4-26)		
		Curve 4 (4 points, see H6-00 to H6-07)		
D4 22		Curve 5 (4 points, see H6-08 to H6-15)	221	~~
F4-33	AI CUIVE SEIECIION	Ten's digit (Al2 curve selection)	. 521	м
		Curve 1 to curve 5 (same as AI1)]	
		Hundred's digit (AI3 curve selection)		
		Curve 1 to curve 5 (same as AI1)		
		Unit's digit (Setting for AI1 less than		
		minimum input)		
		0: Minimum value		
	Setting for AI less than	1: 0.0%		
D4 24		Ten's digit (Setting for AI2 less		
F4-34	minimum input	than minimum input)		
		0, 1 (same as Al1)		
		Hundred's digit (Setting for AI3 less	000	☆
		than minimum input)		
		0, 1 (same as Al1)		
P4-35	DI1 delay time	0.0–3600.0s	0.0s	*
P4-36	DI2 delay time	0.0–3600.0s	0.0s	*
P4-37	DI3 delay time	0.0–3600.0s	0.0s	*
		Thousand's digit (DI4 valid mode)		
P4-38	DI valid mode selection 1	0, 1 (same as DI1)		
		Ten thousand's digit (DI5 valid mode)		
		0, 1 (same as DI1)	00000	*
P4-40	AI2 input signal selection	0: Voltage signal		
		1: Current signal	0	*

	Group P5: Output Terminals				
		0: Pulse output (FMP)			
P5-00	FM terminal output mode	1: Switch signal output (FMR)	0	☆	
	FMR function (open-	0: No output			
P5-01	collector output terminal)	1: AC drive running	0	☆	
		2: Fault output (stop)			
		3: Frequency-level detection			
		FDT1 output			
		4: Frequency reached			
		5: Zero-speed running (no output			
		at stop)			
		6: Motor overload pre-warning			
		7: AC drive overload pre-warning			
		8: Set count value reached			
		9: Designated count value			
		reached			
		10: Length reached			
		11: PLC cycle complete			
		12: Accumulative running time			
		reached			
P5-02	Relay function (T/A-T/B-T/C)	13: Frequency limited	2	☆	

Function Code	Parameter Name	Setting Range	Default	Property
P5-03	Extension card relay function (P/A-P/B-P/C)	14:Torque limited 15:Ready for RUN	0	☆
P5-04	DO1 function selection (open-collector output terminal)	 a) an alger utili A12 17: Frequency upper limit reached 18: Frequency lower limit reached 18: Indervoltage state output 20: Communication setting 21: Reserved 22: Reserved 23: Zero-speed running 2 (having output at stop) 24: Accumulative power-on time reached 25: Frequency level detection FDT2 output 26: Frequency 1 reached 27: Frequency 2 reached 28: Current 1 reached 29: Current 2 reached 20: Timing reached 21: Add becoming 0 23: Reverse running 24: Zero current state 35: Module temperature reached 36: Software current limit exceeded 37: Frequency lower limit reached 38: Alarm output 39: Motor overheat warning 40: Current running time reached 	1	*
P5-05	Extension card DO2 function	41: Fault output (There is no output if it is the coast to stop fault and undervoltage occurs.)	4	\$

Function Code	Parameter Name	Setting Range	Default	Property
P5-06	FMP function selection	0:Running frequency	0	☆
	AO1 function selection	1: Set frequency	0	☆
P5-07		2: Output current		
		3:Outputtorque(absolute value)		
		4: Output power		
		6:Pulse input		
		7: Al1		
		8: AI2		
		9: AI3		
		10: Length		
		11: Count value		
DE 09	AO2 function coloction	12: Communication setting	1	.A.,
F 3-00		13: Motor rotational speed		м
		14: Output current		
		15: Output voltage		
		16:Output torque (actual value)		
		17: Inverter output torque		
P5-09	Maximum FMP output	0.01–100.00 kHz	50.00 kHz	~~
F 3=03	frequency			M
P5-10	AO1 offset coefficient	-100.0%-100.0%	0.0%	☆
P5-11	AO1 gain	-10.00–10.00	1.00	☆
P5-12	AO2 offset coefficient	-100.0%–100.0%	0.00%	\$
P5-13	AO2 gain	-10.00-10.00	1.00	\$
P5-17	FMR output delay time	0.0-3600.0s	0.0s	☆
P5-18	Relay 1 output delay time	0.0–3600.0s	0.0s	☆
P5-19	Relay 2 output delay time	0.0-3600.0s	0.0s	☆
P5-20	DO1 output delay time	0.0-3600.0s	0.0s	☆
P5-21	DO2 output delay time	0.0–3600.0s	0.0s	\$

Function Code	Parameter Name	Setting Range	Default	Property
		Unit's digit (FMR valid mode)		
		0: Positive logic		
		1: Negative logic		
		Ten's digit (Relay 1 valid mode)		
		0, 1 (same as FMR)		
		Hundred's digit (Relay 2 valid mode)		
		0, 1 (same as FMR)		
		Thousand's digit (DO1 valid		
P5-22	DO valid mode selection	mode)	00000	☆
		0, 1 (same as FMR)		
		Ten thousand's digit (DO2 valid		
		mode)		
		0, 1 (same as FMR)		
		0: Voltage signal		
P5-23	AO1 output signal selection	1: Current signal	0	*
	Group P6	Start/Stop Control		
P6-00	Start mode	0: Direct start		
		1: Rotational speed tracking restart		
		2: Pre-excited start (asynchronous		
		motor)	0	\$
P6-01	Rotational speed tracking	0: From frequency at stop		
	mode	1: From zero speed		
		2: From maximum frequency	0	*
P6-02	Rotational speed tracking speed	1–100	20	☆
P6-03	Startup frequency	0.00–10.00 Hz	0.00 Hz	☆
P6-04	Startup frequency holding time	0.0–100.0s	0.0s	*

User Manual Startup DC braking current/ 0%-100% P6-05 0% Pre-excited current Startup DC braking time/ P6-06 0.0-100.0s 0 0s Pre-excited time 0. Linear acceleration/ P6-07 Acceleration/Deceleration deceleration mode 1: S-curve acceleration/ ٥ deceleration A 2: S-curve acceleration/ P6-08 Time proportion of S-curve 0.0% to (100.0% – F6-09) start segment 30.0% P6-09 Time proportion of S-curve 0.0% to (100.0% - F6.08)end segment 30.0% P6-10 Stop mode 0: Decelerate to stop 1: Coast to stop 0 Initial frequency of stop DC 0.00 Hz to maximum frequency P6-11 braking 0.00 Hz P6-12 Waiting time of stop DC 0.0-36.0s braking 0.0s Stop DC braking current 0%-100% 0% P6-13 P6-14 Stop DC braking time 0.0-100.0s 0.0s P6-15 Brake use ratio 0%-100% 100% Group P7: Operation Panel and Display 0: MF.K key disabled 1: Switchover between operation panel control and remote command control (terminal or communication) MF.K Key function P7-01 2: Switchover between forward rotation selection and reverse rotation

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		3: Forward JOG 4: Reverse JOG	0	*
P7-02	STOP/RESET key function	0: STOP/RESET key enabled only in operation panel control 1: STOP/RESET key enabled in any operation mode	0	☆

	andai			
		0000-FFFF		
		Bit00: Running frequency 1 (Hz)		
		Bit01: Set frequency (Hz)		
P7-03	I ED display rupping	Bit02: Bus voltage (V)		
		Bit03: Output voltage (V)		
	parameters 1	Bit04: Output current (A)	15	
		Bit05: Output power (kW/)	IF	X
		Bit06: Output forgue (%)		
		Bit07: DI input status		
		Bit08: DO output status		
		Bit09: Al1 voltage (V)		
		Bit10: Al2 voltage (V)		
P7-03	LED display running	Bit11: AI3 voltage (V)		
	parameters 1	Bit12: Count value		
		Bit13: Length value	45	
		Bit14: Load speed display	16	TX .
		Bit15: PID setting		
		0000-FFFF		
		Bit00: PID feedback		
		Bit01: PLC stage		
		Bit02: Pulse setting frequency (kHz)		
		Bit03: Running frequency 2 (Hz)		
		Bit04: Remaining running time		
		Bit05: Al1 voltage before		
		correction (V)		
		Bitu6: Al2 voltage before		
		Rito7: Al2 voltage before		
		correction (V/)	0	17
		Bit08: Linear speed		
		Bit09: Current power-on time (Hour)		
P7-04	LED display running	Bit10: Current running time (Min)		
	parameters 2	Bit11: Pulse setting frequency (Hz)		
		Bit12: Communication setting value		
		Bit13: Encoder feedback speed (Hz)		
		Bit14: Main frequency X display (Hz)		
		Bit15: Auxiliary frequency Y display (Hz)		
Function Code	Parameter Name	Setting Range	Default	Property
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		0000-FFFF Bit00: Set frequency (Hz) Bit01: Bus voltage (V) Bit02: DI input status Bit03: DO output status Bit04: Al1 voltage (V) Bit05: Al2 voltage (V) Bit06: Al3 voltage (V)		
P7-05	LED display stop parameters	Bit07: Count value Bit08: Length value Bit09: PLC stage Bit10: Load speed Bit11: Plsetting Bit12: Pulse setting frequency (kHz)	33	\$
P7-06	Load speed display coefficient	0.0001-6.5000	1.0000	☆
P7-07	Heatsink temperature of inverter module	0.0–100.0°C	-	•
P7-08	Temporary software version	-	-	•
P7-09	Accumulative running time	0–65535 h	-	•
P7-10	Product number	-	-	•
P7-11	Software version	-	-	•
P7-12	Number of decimal places for load speed display	0: 0 decimal place 1: 1 decimal place 2: 2 decimal places 3: 3 decimal places	1	
P7-13	Accumulative power-on time	0–65535 h	0 h	•
	Accumulative power	0–65535 kWh		•
	Group Pa	8: Auxiliary Functions		
P8-00	JOG running frequency	0.00 Hz to maximum frequency	2.00 Hz	☆
P8-01	JOG acceleration time	0.0–6500.0s	20.0s	☆
P8-02	JOG deceleration time	0.0–6500.0s	20.0s	☆
P8-03	Acceleration time 2	0.0–6500.0s	Model dependent	☆
P8-04	Deceleration time 2	0.0–6500.0s	Model dependent	☆

Function Code	Parameter Name	Setting Range	Default	Propert
P8-05	Acceleration time 3	0.0–6500.0s	Model depende	☆
P8-06	Deceleration time 3	0.0–6500.0s	Model depende	☆
P8-07	Acceleration time 4	0.0–500.0s	Model depende	☆
P8-08	Deceleration time 4	0.0–6500.0s	Model depende	☆
P8-09	Jump frequency 1	0.00 Hz to maximum frequency	0.00 Hz	☆
P8-10	Jump frequency 2	0.00 Hz to maximum frequency	0.00	☆
P8-11	Frequency jump amplitude	0.00 Hz to maximum frequency	0.00	☆
P8-12	Forward/Reverse rotation dead-zone time	0.0–3000.0s	0.0s	☆
P8-13	Reverse control	0: Enabled 1: Disabled	0	\$
P8-14	Running mode when set frequency lower than frequency	0: Run at frequency lower limit 1: Stop		
	lower limit	2: Run at zero speed	0	☆
P8-15	Droop control	0.00–10.00 Hz	0.00	☆
P8-16	Accumulative power-on time threshold	0–65000 h	0 h	\$
P8-17	Accumulative running time threshold	0–65000 h	0	\$
P8-18	Startup protection	0: No 1: Yes	0	☆
P8-19	Frequency detection value (FDT1)	0.00 Hz to maximum frequency	50.00	☆
P8-20	Frequency detection hysteresis (FDT hysteresis 1)	0.0%–100.0% (FDT1 level)	5.0%	☆
P8-21	Detection range of frequency reached	0.00–100% (maximum frequency)	0.0%	\$

0301 10	anuai				
	Jump frequency during				
P8-22	acceleration/deceleration	0: Disabled1: Enabled	0	v	
P8-25	Frequency switchover point between acceleration time 1 and acceleration time 2	0.00 Hz to maximum frequency	0.00 Hz	☆	
P8-26	Frequency switchover point between deceleration time 1 and deceleration time 2	0.00 to maximum frequency	0.00 Hz	☆	
P8-27	Terminal JOG preferred	0: Disabled1: Enabled	0	☆	

P8-28	Frequency detection value (FDT2)	0.00 to maximum frequency	50.00 Hz	☆
P8-29	Frequency detection hysteresis (FDT hysteresis 2)	0.0%–100.0% (FDT2 level)	5.0%	☆
P8-30	Any frequency reaching detection value 1	0.00 Hz to maximum frequency	50.00 Hz	\$
P8-31	Any frequency reaching detection amplitude 1	0.0%–100.0% (maximum frequency)	0.0%	24
P8-32	Any frequency reaching detection value 2	0.00 Hz to maximum frequency	50.00 Hz	₩
P8-33	Any frequency reaching detection amplitude 2	0.0%–100.0% (maximum frequency)	0.0%	☆
P8-34	Zero current detection level	0.0%–300.0% (rated motor current)	5.0%	*
P8-35	Zero current detection delay time	0.00–600.00s	0.10s	\$
P8-36	Output overcurrent threshold	% (no detection) %–300.0% (rated motor current)	200.0%	\$
P8-37	Output overcurrent detection delay time	0.00–600.00s	0.00s	¥
P8-38	Any current reaching 1	0.0%–300.0% (rated motor current)	100.0%	24
P8-39	Any current reaching 1 amplitude	0.0%-300.0% (rated motor current)	0.0%	☆

P8-40 Any current reaching 2 0.0%-300.0% (rated 100.0% ☆ motor current) Any current reaching 2 amplitude 0.0%-300.0% (rated \$ P8-41 motor current) 0.0% 0. Disabled P8-42 1. Enabled Timing function 0 ☆ 0: P8-44 1· AI1 2. AI5 3. AI3 0 \$ P8-43 Timing duration source (100% of analog input corresponds to the value of P8-44) P8-44 Timing duration 0.0-6500.0 min 0.0 min 숬 P8-45 Al1 input voltage lower limit 0.00 V to P8-46 3 10 V \$ P8-46 Al1 input voltage upper limit P8-45 to 10.00 V 6.80 V ☆ P8-47 Module temperature threshold 0-100°C 75°C \$ P8-48 Cooling fan control 0: Fan working during running 0 \$ 1: Fan working continuously P8-49 Wakeup frequency Dormant frequency (P8-51) to 0.00 Hz 547 maximum frequency (P0-10) P8-50 Wakeup delay time 0.0s 0.0-6500.0s ☆ P8-51 0.00 Hz to wakeup frequency 0.00 Hz Dormant frequency 547 (P8-49) P8-52 Dormant delay time 0.0-6500.0s 0.0s ☆ P8-53 Current running time reached 0.0-6500.0 min 0.0 min 547 P8-54 Output power correction 0.00%-200.0% 100.0% ☆ coefficient Group P9: Fault and Protection P9-00 Motor overload protection 0: Disabled 1 ☆ selection 1: Enabled P9-01 Motor overload protection gain 0.20-10.00 1.00 \$ P9-02 Motor overload warning 50%-100% 80% ☆ coefficient

P9-07	Short-circuit to ground upon	0: Disabled		
	power-on	1: Enabled	1	☆
P9-09	Fault auto reset times	0–20	0	☆
P9-10	DO action during fault auto reset	0: Not act		
		1: Act	0	☆
P9-11	Time interval of fault auto reset	0.1s-100.0s	1.0s	☆
P9-12	Input phase loss protection/	Unit's digit: Input phase loss protection	11	☆
	contactor energizing protection	Ten's digit: Contactor energizing		
	selection	protection		
		0: Disabled		
		1: Enabled		
1	1			

Function Code	Parameter Name	Setting Range	Default	Property
P9-13	Output phase loss protection	0: Disabled	1	4
	selection	1: Enabled		
P9-14	1st fault type	0: No fault	-	
		1: Reserved		
		2: Overcurrent during acceleration		
		3: Overcurrent during deceleration		
		4: Overcurrent at constant speed		
		5: Overvoltage during acceleration		
		6:Overvoltage during		
	deceleration			
		7: Overvoltage at constant speed		
		8: Buffer resistance overload		
		9: Undervoltage		
		10: AC drive overload		
		11: Motor overload		
		12:Power input phase loss		
		13: Power output phase loss		
		14: Module overheat		
		15: External equipment fault		
		16: Communication fault		
		17: Contactor fault		
P9-15	2nd fault type	18: Current detection fault	L	
		19: Motor auto-tuning fault	_	
		20: Encoder/PG card fault		
		21: EEPROM read-write fault		
		22: AC drive hardware fault		
		23: Short circuit to ground 24:		
		Reserved		
		25: Reserved		
		26: Accumulative running time		
		reached		•
		27: User-defined fault 1		
		28: User-defined fault 2		
		29: Accumulative power-on		
		timereached		
		30: Load becoming 0		
		31: PID feedback lost during running		
			1	

Function Code	Parameter Name	Setting Range	Default	Propert
		40: With-wave current limit fault		
		41: Motor switchover fault during		
		running		
		42: Too large speed		
		deviation		
D0.16	and (latest) foult tures			
P9-10	Sid (latest) lault type	45. Motor over-speed	-	
		45. Motor overneat		•
		51: Initial position		
P9-17	Frequency upon 3rd fault	-	-	•
P9-18	Current upon 3rd fault	-	-	•
P9-19	Bus voltage upon 3rd fault	-	-	•
P9-20	DI status upon 3rd fault	-	-	•
	Output terminal status upon			
P9-21	3rd fault	-	-	•
	AC drive status upon 3rd fault			
P9-22		-	-	•
	Deuver en time unen 2rd			
DO 00	Power-on time upon sid			
P9-23	Tault	-	-	
P9-24	Running time upon 3rd fault	-	-	•
P9-27	Frequency upon 2nd fault	-	-	•
P9-28	Current upon 2nd fault	-	-	•
P9-29	Bus voltage upon 2nd fault	-	-	•
P9-30	DI status upon 2nd fault	-	-	•
	Output terminal status upon			
P9-31	2nd fault	-	-	•
P9-32	Frequency upon 2nd fault	-	-	•
P9-33	Current upon 2nd fault	-	-	•
P9-34	Bus voltage upon 2nd fault	-	-	•
P9-37	DI status upon 1st fault	-	-	•
	Output terminal status upon			
P9-38	1st fault	-	-	•
P9-39	Frequency upon 1st fault	-	-	•
P9-40	Current upon 1st fault	-	-	•
P9-41	Bus voltage upon 3rd fault	-	-	•

P9-42	DI status upon 1st fault		-	-	٠
	Output terminal status upon	ı			
P9-43	1st fault		-	-	•
P9-44	Frequency upon 1st fault		-	-	•
		Uni	it's digit (Motor overload, Err11)		
		0: 1: 2: (Coast to stop Stop according to the stop mode Continue to run		
		Ter Err	n's digit (Power input phase loss, 12)		
P9-47	Fault protection action	Sar	me as unit's digit		
	selection 1	Hui los:	ndred's digit (Power output phase s. Err13)	00000	☆
		Sar	me as unit's digit	-	
		1 ho	busand's digit (External equipment		
		rau Sar	ne as unit's digit		
		Tor	thousand's digit (Communication		
		fau	It Frr16)		
		Sar	me as unit's digit		
		l Ini	it's digit (Encoder fault Err20)		
P9-48 Fault protection action selection 2	Fault protection action selection 2	0: 1: ac 2: con	Coast to stop Switch over to V/F control, stop cording to the stop mode Switch over to V/F control, titinue to run	00000	☆
		Ter Err:	n's digit (EEPROM read-write fault, 21)		
		0: 1: \$	Coast to stop Stop according to the stop mode		
		Hui	ndred's digit: reserved		
		Tho Err:	ousand's digit (Motor overheat, 25)		
		Sar	me as unit's digit in P9-47		
		Ter run	n thousand's digit (Accumulative ning time reached)		
		Sar	me as unit's digit in P9-47	1	

		Unit's digit (User-defined fault 1, Err27)		
		Same as unit's digit in P9-47		
		Ten's digit (User-defined fault 2, Err28)		
		Same as unit's digit in P9-47		
		Hundred's digit (Accumulative		
		power-on time reached, Err29)		
		Same as unit's digit in P9-47		
P9-49	Fault protection action selection 3	Thousand's digit (Load becoming 0, Err30)	00000	☆
		0: Coast to stop		
		1: Stop according to the stop		
		mode		
		2: Continue to run at 7% of rated motor		
		frequency and resume		
		Ten thousand's digit (PID feedback lost		
		during running, Err31)		
		Same as unit's digit in P9-47		
		Unit's digit (Too large speed deviation, Err42)		
		Oceano en unitar diniti in DO 47		
		Same as unit's digit in P9-47		
		Err43)		
		Same as unit's digit in P9-47		
P9-50	Fault protection action	Hundred's digit (Initial position fault,	00000	$\stackrel{\frown}{\simeq}$
	selection 4	Err51)		
		Same as unit's digit in P9-47		
		Thousand's digit (Speed feedback fault,		
		Err52)		
		Same as unit's digit in P9-47		
		Ten thousand's digit: Reserved		

		0: Current running frequency		
		1: Set frequency		
		2: Frequency upper limit		
	Frequency selection for	3: Frequency lower limit		
P9-54	continuing to run upon	4: Backup frequency upon	0	\$
	fault	abnormality		
	Backup frequency upon	0.0%–100.0% (maximum		☆
P9-55	abnormality	frequency)	100.0%	
		- 1		
		0: No temperature sensor		
P9-56	Type of motor	1: PT100		$\stackrel{\sim}{\sim}$
	temperature sensor	2: PT1000	0	
	Motor overheat			
P9-57	protection threshold	0–200°C	110°C	☆
	Motor overheat warning			
D0 59	threshold		00%0	☆
P9-58	threshold	0=200°C	90.0	
		0: Invalid		
	Action selection at	1: Decelerate		
P9-59	instantaneous power	2: Decelerate to stop	0	\$
	Action pause judging			
P9-60	voltage at instantaneous	80.0%-100.0%	90.0%	☆
	Voltage rally judging time			
P9-61	at instantaneous power	0.00–100.00s	0.50s	☆
	Action judging voltage at	60.0%-100.0% (standard bus voltage)		
P9-62	instantaneous power		80.0%	☆
	Protection upon load	0: Disabled		
P9-63	becoming 0	1: Enabled	0	
			-	22
	Detection level of load	0.0%-100.0% (rated motor current)		"A.,
P9-64	becoming 0		10.0%	м
	Detection time of load			
P9-65	becoming 0	0.0–60.0s	1.0s	公
		0.0%-50.0% (maximum frequency)		
P9-67	Over-speed detection		20.0%	\$

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P9-68	Over-speed detection	0.0-60.0s	1.0s	☆
P9-69	Detection value of too large speed deviation	0.0%-50.0% (maximum frequency)	20.0%	. ☆
P9-70	Detection time of too large speed deviation	0.0–60.0s	5.0s	☆
		Group PA: Process Control P	ID Function	
PA-00	PID setting source	0: PA-01 1: Al1 2: Al2 3: Al3 4: Pulse setting (DI5) 5: Communication setting 6: Multi-reference	0	Å
PA-01	PID digital setting	0.0%–100.0%	50.0%	☆
PA-02	PID feedback source	0. A11 1: Al2 2: Al3 3: Al1 – Al2 4: Pulse setting (DI5) 5: Communication setting 6: Al1 + Al2 7: MAX ([Al1], [Al2]) 8: MIN ([Al1], [Al2])	0	☆
PA-03	PID action direction	0: Forward action 1: Reverse action	0	☆
PA-04	PID setting feedback range	0-65535	1000	\$
PA-05	Proportional gain Kp1	0.0–100.0	20.0	\$
PA-06	Integral time Ti1	0.01–10.00s	2.00s	\$
PA-07 A-08	Differential time Td1 Cut-off frequency of PID reverse rotation	0.00–10.000 0.00 to maximum frequency	0.000 2.00 Hz	s ☆
PA-09	PID deviation limit	0.0%-100.0%	0.0%	\$
PA-10	PID differential limit	0.00%-100.00%	0.10%	\$
PA-11	PID setting change time	0.00-650.00s	0.00s	: ☆
PA-12	PID feedback filter time	0.00–60.00s	0.00s	\$
PA-13	PID output filter time	0.00–60.00s	0.00s	\$
PA-14	Reserved	-	-	\$
PA-15	Proportional gain Kp2	0.0–100.0	20.0	☆
PA-16	Integral time Ti2	0.01–10.00s	2.00s	\$

PA-17	Differential time Td2	0.000-10.000s	0.000s	☆
		0: No switchover		
DA 40	PID parameter switchove	r 1: Switchover via DI		
PA-18	condition	2: Automatic switchover based on	0	¥
		deviation		
	PID parameter switchover	0.0% to FA-20	20.0%	\$
PA-19	deviation 1			
DA 00	PID parameter switchover	PA-19 to 100.0%	80.0%	☆
PA-20	deviation 2			
PA-21	PID initial value	0.0%-100.0%	0.0%	☆
PA-22	PID initial value holding time	0.00–650.00s	0.00s	☆
	Maximum deviation between			
PA-23	two PID outputs in forward	0.00%-100.00%	1.00%	☆
	Maximum deviation between			
	two PID outputs in reverse	0.00%-100.00%	1.00%	☆
PA-24	direction			
		Linit's digit (Integral separated)		
		0: Invalid	1	
		1: Valid		
			-	
	PID integral property	Ten's digit (Whether to stop integral	0	~
	r ib integral property	operation when the output reaches	_	
PA-25		the limit)		
		0: Continue integral operation		
		1: Stop integral operation		
	Detection value	0.0%: Not judging feedback loss		
PA-26	of PID feedback	0.1%-100.0%	0.0%	☆
PA-27	Detection time of PID			
17(2)	feedback loss	0.0–20.0s	0.0s	\$
	PID operation at stop	0: No PID operation at stop	0	~
PA-20		1: PID operation at stop		ਘ
	Group PB: S	Swing Frequency, Fixed Length and Co	unt	
	Swing frequency setting): Relative to the central frequency		
	mode 1	I: Relative to the maximum	0	☆
PB-00	f	requency		
PB-01	Swing frequency	0.0%–100.0%	0.0%	☆
PB-02	Jump frequency amplitude	0.0%-50.0%	0.0%	$\stackrel{\sim}{\sim}$

PB-03	Swing frequency cycle	0.0–3000.0s	10.0s	☆
	Triangular wave rising	0.0%–100.0%	50.0%	
PB-04	time coefficient			x
PB-05	Set length	0–65535 m	1000 m	☆
PB-06	Actual length	0–65535 m	0 m	☆
PB-07	Number of pulses per	0.1–6553.5	100.0	☆
PB-08	Set count value	1-65535	1000	<u>Å</u>
PB-09	Designated count value	1-65535	1000	~
1 2 00	Group PC ⁺	Multi-Reference and Simple PLC Func	tion	
PC-00	Reference 0		0.0%	
PC 01	Reference 1		0.0%	~~
	Reference 2		0.0%	-M
PC-02		-100.0%-100.0%	0.0%	X
PC-03	Reference 3	-100.0%-100.0%	0.0%	\$7
PC-04	Reference 4	-100.0%-100.0%	0.0%	\$
PC-05	Reference 5	-100.0%-100.0%	0.0%	☆
PC-06	Reference 6	-100.0%-100.0%	0.0%	\$
PC-07	Reference 7	-100.0%-100.0%	0.0%	\$
PC-08	Reference 8	-100.0%-100.0%	0.0%	☆
PC-09	Reference 9	-100.0%-100.0%	0.0%	\$
PC-10	Reference 10	-100.0%-100.0%	0.0%	\$
PC-11	Reference 11	-100.0%-100.0%	0.0%	\$
PC-12	Reference 12	-100.0%-100.0%	0.0%	\$
PC-13	Reference 13	-100.0%-100.0%	0.0%	☆
PC-14	Reference 14	-100.0%-100.0%	0.0%	☆
PC-15	Reference 15	-100.0%-100.0%	0.0%	☆
		0: Stop after the AC drive runs one		
		cycle		
PC-16	Simple PLC running mode	1: Keep final values after the AC	0	\$
		drive runs one cycle		
		Unit's digit (Retentive upon power		
		foilure)		
	Simple PLC	U. NO	00	52
PC-17	retentive selection	1: Yes		
		Ten's digit (Retentive upon stop)	4	
		0: No		
		1: Yes		
	Running time of simple PLC			*
DC 10	reference 0	0.0-6553.5s(h)	0.0s (b)	
10-10		0.0 000000 (11)	1 3.00 (11)	

PC-19	Acceleration/deceleration time 0)—3	0	☆
	of simple PLC reference 0			
	Running time of simple PLC			☆
PC-20	reference 1 0	0.0–6553.5s (h)	0.0s (h)	
PC-21	Acceleration/deceleration time 0)–3	0	☆
	of simple PLC reference 1			
PC-22	Running time of simple PLC 0	.0–6553.5s (h)	0.0s (h)	☆
	reference 2			
PC-23	Acceleration/deceleration time C	J=3	0	☆
	of simple PLC reference 2			
PC-24	Running time of simple PLC			☆
	reference 3).0–6553.5s (h)	0.0s (h)	
PC-25	Acceleration/deceleration time 0)–3	0	☆
	of simple PLC reference 3			
PC-26	Running time of simple PLC			
	reference 4	0.0–6553.5s (h)	0.0s (h)	\$
PC-27	Acceleration/deceleration time o	[†] 0–3	0	☆
	simple PLC reference 4			
	Running time of simple PLC			.A.,
PC-28	reference 5	0.0–6553.5s (h)	0.0s (h)	м
PC-29	Acceleration/deceleration time of	f 0–3	0	
	simple PLC reference 5			57
	Running time of simple PLC			
PC-30	reference 6	0.0–6553.5s (h)	0.0s (h)	57
PC-31	Acceleration/deceleration time of	f 0–3	0	
	simple PLC reference 6			\$
	Running time of simple PLC			
DC 22	reference 7	0.0 6553 50 (b)	0.00 (b)	☆
PC-32	Acceleration/deceleration time of	f o 2	0.05 (11)	
FC-33	simple PLC reference 7	0-3	0	☆
<u> </u>	Durania a time of simple DLC			
	Running time of simple PLC			☆
PC-34		0.0-6553.5s (h)	0.0s (h)	
PC-35	Acceleration/deceleration time o	0-3	0	\$
<u> </u>	Simple FLG relefence o			
	Running time of simple PLC			~
PC-36	reference 9	0.0–6553.5s (h)	0.0s	M

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PC-37	Acceleration/deceleration time of	0–3	0	
	simple PLC reference 9			\$
	Running time of simple PLC			
PC-38	reference 10	0.0–6553.5s (h)	0.0s	☆
PC-39	Acceleration/deceleration time	0–3	0	☆
PC-40	Running time of simple PLC			
	reference 11	0.0–6553.5s (h)	0.0s	\$
PC-41	Acceleration/deceleration time of simple PLC reference 11	0–3	0	☆
PC-42	Running time of simple PLC reference 12	0.0–6553.5s (h)	0.0s (h)	☆
PC-43	Acceleration/deceleration time of simple PLC reference 12	0–3	0	\$
PC-44	Running time of simple PLC reference 13	0.0–6553.5s (h)	0.0s (h)	☆
PC-45	Acceleration/deceleration time of	0–3	0	
	simple PLC reference 13			☆
PC-46	Running time of simple PLC reference 14	0.0–6553.5s (h)	0.0s (h)	\$
	Running time of simple PLC			~
PC-46	reference 14	0.0–6553.5s (h)	0.0s	A
PC-47	Acceleration/deceleration time of simple PLC reference 14	0–3	0	☆
PC-48	Running time of simple PLC	0.0–6553.5s (h)	0.0-	☆
			0.0s	
PC-49	Acceleration/deceleration time of simple PLC reference 15	0–3	0	☆
PC-50	Time unit of simple PLC	0: s (second)1:h (hour)		
	running		0	☆

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\$
\$

Function	Parameter Name	Setting Range	Default	Property
Coue	G	roup PD: Communication Parameters		
PD-00	Baud rate	Setting Range roup PD: Communication Parameters Unit's digit (Modbus baud rate) 0: 300 BPs 1: 600 BPs 2: 1200 BPs 3: 2400 BPs 4: 4800 BPs 5: 9600 BPs 6: 19200 BPs Ten's digit (PROFIBUS-DP baud rate) 0: 115200 BPs 1: 208300 BPs 1: 208300 BPs Hundred's digit (reserved) Thousand's digit (CANlink baud rate) 0: 20 1: 50 2: 100	6005	
		3: 125 4: 250 5: 500		

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		0: No check, data format <8,N,2>			
		1: Even parity check, data format			
PD-01	Data format	<8,E,1>	0		
		2: Odd Parity check, data format			
		<8,O,1>		¥	
		3: No check, data format <8,N,1>			
		0: Broadcast address			
PD-02	Local address	1–247	1	☆	
		Valid for Modbus, PROFIBUS-DP			

Function Code	Parameter Name	Setting Range	Default	Property
		0–20 ms		
PD-03	Response delay	Valid for Modbus	2 ms	\$
		0.0s (invalid) 0.1–60.0s		
PD-04	Communication timeout	Valid for Modbus, PROFIBUS-DP	0.06	-^-
		and CANopen	0.05	м
		Unit's digit: Modbus protocol		
		0: Non-standard Modbus protocol		
		1: Standard Modbus protocol		
		Ten's digit: PROFIBUS-DP data	20	
PD-05	Modbus protocol selection	format	30	X
	and PROFIBUS-DP data	0: PPO1 format		
	format	1: PPO2 format		
		2: PPO3 format		
	Communication reading	0: 0.01A		
PD-06	current resolution	1: 0.1A	0	☆
	CANlink communication	0.0s: Invalid		
PD-08	timeout time	0.1–60.0s	0	☆
	Group	PE: User-defined Parameters		
PE-00	User-defined function code		P0-10	☆
PE-01	User-defined function code		P0-02	☆
PE-02	User-defined function code	1	P0-03	\$
PE-03	User-defined function code	1	P0-07	\$
PE-04	User-defined function code	1	P0-08	\$
PE-05	User-defined function code		P0-17	\$

PE-06	User-defined function code		P0-18	☆
PE-07	User-defined function code		P3-00	☆
PE-08	User-defined function code		P3-01	☆
PE-09	User-defined function code		P4-00	☆
PE-10	User-defined function code		P4-01	☆
PE-11	User-defined function code		P4-02	\$
PE-12	User-defined function code		P5-04	☆
PE-13	User-defined function code		P5-07	☆
PE-14	User-defined function code		P6-00	☆
Function Code	Parameter Name	Setting Range	Default	Property
PE-15	User-defined function code	P0-00 to PP-xx	P6-10	☆
PE-16	User-defined function code	H0-00 to Hx-xx	P0-00	☆
PE-17	User-defined function code	S0-xx to S0-xx	P0-00	☆
PE-18	User-defined function code		P0-00	☆
PE-19	User-defined function code		P0-00	☆
PE-20	User-defined function code		P0-00	☆
PE-21	User-defined function code		P0-00	☆
PE-22	User-defined function code		P0-00	☆
PE-23	User-defined function code		P0-00	\$
PE-24	User-defined function code		P0-00	☆
PE-25	User-defined function code		P0-00	☆
PE-26	User-defined function code		P0-00	☆
PE-27	User-defined function code		P0-00	☆
PE-28	User-defined function code		P0-00	☆
PE-29	User-defined function code		P0-00	☆
	Group F	P: Function Code Management		
PP-00	User password	0–65535	0	\$
PP-01	Restore default settings	0: No operation 01: Restore factory settings except motor parameters 02: Clear records 04: Restore user backup parameters 05: Back up current user parameters	0	*

PP-02 AC drive parameter display property AC drive parameter display 1: Display Ten's digit (Group A display selection) 0: Not display 1: Display 1: Display	PP-02	AC drive parameter display property	Unit's digit (Group U display selection) 0: Not display 1: Display Ten's digit (Group A display selection) 0: Not display 1: Display	11	*
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PP-03	Individualized parameter display property	Unit's digit (User-defined parameter display selection) 0: Not display 1: Display Ten's digit (User-modified parameter display selection) 0: Not display 1: Display	00	☆
PP-04	Parametermodification property	0: Modifiable 1: Not modifiable	0	☆
	Group H0: Torc	ue Control and Restricting Parameters		
H0-00	Speed/Torque control selection	0: Speed control 1: Torque control	0	*
H0-01	Torque setting source in torque control	0: Digital setting (A0-03) 1: Al1 2: Al2 3: Al3 4: Pulse setting (DI5) 5: Communication setting 6: MIN (Al1, Al2) 7: MAX (Al1, Al2) Full range of values 1–7 corresponds to the digital setting of A0-03.	0	*

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H0-03	Torque digital setting in torque control	-200.0%200.0%	150.0%	☆
H0-05	Forward maximum frequency in torque control	0.00 Hz to maximum frequency (P0-10)	50.00 Hz	\$
	Peverse maximum frequency			
H0-06	in torque control	(P0-10)	50.00 Hz	☆
	Acceleration time in torque			
H0-07	control	0.00–65000s	0.00s	Ŷ
	Deceleration time in torque			
H0-08	control	0.00–65000s	0.00s	☆
Group H1	: Virtual DI (VDI)/Virtual DO (V	DO)		
H1-00	VDI1 function selection	0–59	0	*
H1-01	VDI2 function selection	0–59	0	*
H1-02	VDI3 function selection	0–59	0	*
H1-03	VDI4 function selection	0–59	0	*
H1-04	VDI5 function selection	0–59	0	*
H1-05	VDI state setting mode	Unit's digit (VDI1) 0: Decided by state of VDOx 1: Decided by A1-06 Ten's digit (VDI2) 0, 1 (same as VDI1) Hundred's digit (VDI3) 0, 1 (same as VDI1) Thousand's digit (VDI4) 0, 1 (same as VDI1) Ten thousand's digit (VDI5)	00000	*
H1-06	VDI state selection	U, 1 (same as VDI1) Unit's digit (VDI1) 0: Invalid 1: Valid Ten's digit (VDI2) 0. 1 (same as VDI1) Hundred''s digit (VDI3) 0, 1 (same as VDI1) Thousand's digit (VDI4)	00000	*

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		0, 1 (same as VDI1)		
		Ten thousand's digit (VDI5)		
		0, 1 (same as VDI1)		
	Function selection for Al1			*
H1-07	used as DI	0–59	0	^
	Function selection for AI2			*
H1-08	used as DI	0–59	0	^
	Function selection for AI3			*
H1-09	used as DI	0–59	0	
		Unit's digit (AI1)		
		0: High level valid		
H1-10	State selection for AI used	1: Low level valid	000	
	as DI	Ten's digit (AI2)		
		0, 1 (same as unit's digit)		*
		Hundred's digit (AI3)		
		0, 1 (same as unit's digit)		
Function	Parameter Name	Setting Rang	Default	Property
Code				
		0: Short with physical DIx internally		
H1-11	VDO1 function selection	1–40: Refer to function selection	0	☆
		0: Short with physical Div interpally		
		4. 40. Defecto function coloritien		
H1-12	VDO2 function selection	1–40: Refer to function selection		
		of physical DO in group P5.	0	Ŷ
		0: Short with physical Dix internally		
H1-13	VDO3 function selection	1–40: Refer to function selection	0	52
		of physical DO in group P5		
		0: Short with physical Dix internally		
H1-14	VDO4 function selection	1–40: Refer to function selection	0	☆
		0: Short with physical Dix internally		
H1-15	VDO5 function selection	1–40: Refer to function selection	0	☆
		of physical DO in group P5.		
H1-16	VDO1 output delay	0.0–3600.0s	0.0s	☆
H1-17	VDO2 output delay	0.0-3600.0s	0.05	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
H1-18	VDO3 output delay	0.0-3600.0s	0.05	~
H1-19	VDO4 output delay	0.0–3600.0s	0.03	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
H1-20	VDO5 output delay	0.0-3600.0s	0.05	~ ~

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			Unit's digit (V	DO1)			
			0: Positive log	jic			
			1: Reverse logic				
			Ten's digit (VI	002)			
			0, 1 (same as	unit's digit)			
			Hundred's dig	it (VDO3)			
H1-21	v	DO state selection	0, 1 (same as	unit's digit)		00000	\$
				Igit (VDO4)	_		
			Ten thousand	l's digit (VDO5)			
			0. 1 (same as	unit's digit)			
Function	Code	Parameter N	lame	Min. Unit	Con	nmunicatio	n Address
		Group S0:	Standard Moni	toring Parameters			
S0-0	00	Running freque	ncy (Hz)	0.01 Hz		7000	-
S0-0)1	Set frequency	y (Hz)	0.01 Hz		7001	H
S0-0)2	Bus voltag	ge	0.1 V		70021	+
S0-0)3	Output volt	age	1 V		7003	-
S0-0)4	Output curr	rent	0.01 A	7004H		4
S0-0)5	Output pov	ver	0.1 kW		7005H	
S0-0)6	Output tore	que	0.1%		7006ł	-
S0-0)7	DI state		1		70071	-
S0-0)8	DO state	9	1		7008	-
S0-0)9	Al1 voltage	(V)	0.01 V		70091	-
S0-1	0	Al2 voltage (V)/current (mA)		0.01 V/0.01 mA		700A	-
S0-1	1	Al3 voltage	(V)	0.01 V		7007B	н
S0-12 Count v		Count val	ue	1		700CI	н
S0-1	3	Length val	ue	1		700DI	н
S0-1	4	Load spee	ed	1		700EI	-
S0-1	5	PID settir	ng	1		700FI	-
S0-1	6	PID feedba	ack	1		7010	-
S0-17 PLC stag		e	1		7011I	- I	

User manual			
S0-18	Input pulse frequency (Hz)	0.01 kHz	7012H
S0-19	Feedback speed	0.01 Hz	7013H
S0-20	S0-20 Remaining running time		7014H
S0-21	Al1 voltage before correction	0.001 V	7015H
	Al2 voltage (V)/current (mA) before		
S0-22	correction	0.01 V/0.01 mA	7016H
Eunction Code	Parameter Name	Min Unit	Communication
			Address
	Group S0: Standard Monit	oring Parameters	-
S0-23	AI3 voltage before correction	0.001 V	7017H
S0-24	Linear speed	1 m/Min	7018H
S0-25	Accumulative power-on time	1 Min	7019
S0-26	Accumulative running time	0.1 Min	701AH
S0-27	Pulse input frequency	1 Hz	701BH
S0-28	Communication setting value	0.01%	701CH
S0-29	Encoder feedback speed	0.01 Hz	701DH
S0-30	Main frequency X	0.01 Hz	701EH
S0-31	Auxiliary frequency Y	0.01 Hz	701FH
S0-32	Viewing any register address value	1	7020H
S0-33	Synchronous motor rotor position	0.1°	7021H
S0-34	Motor temperature	1°C	7022H
S0-35	Target torque	0.1%	7023H
S0-36	Resolver position	1	7024H
S0-37	Power factor angle	0.1°	7025H
S0-38	ABZ position	1	7026H
S0-39	Target voltage upon V/F separation	1 V	7027H
S0-40	Output voltage upon V/F separation	1V	7028H
S0-41	DI state visual display	1	7029H
S0-42	DO state visual display	1	702AH
S0-43	DI function state visual display 1	1	702BH
S0-44	DI function state visual display 2	1	702CH
S0-45	Fault information	1	702DH
S0-58	Phase Z counting	1	703AH
S0-59	Current set frequency	0.01%	703BH
S0-60	Current running frequency	0.01%	703CH
S0-61	AC drive running state	1	703DH
S0-62	Current fault code	1	703EH

S0-63	Sent value of point-point communication	0.01%	703FH					
S0-64	Received value of point-point communication	0.01%	7040H					
S0-65	Torque upper limit	0.1%	7041H					

Maintenance and Troubleshooting

Routine Repair and Maintenance of the DRIVE

Warranty Agreement

- 1) Free warranty only applies to the AC drive itself.
- 2) We will provide 18-month warranty (starting from the leave-factory date as indicated on the barcode) for the failure or damage under normal use conditions. If the equipment has been used for over 18 months, reasonable repair expenses will be charged.
- Reasonable repair expenses will be charged for the damages due to the following causes:
 - Improper operation without following the instructions
 - Fire, flood or abnormal voltage.
 - Using the AC drive for non-recommended function
- The maintenance fee is charged according to uniform standard. If there is an agreement, the agreement prevails.

Faults and Solutions

The DRIVE provides a total of 24 pieces of fault information and protective functions. After a fault occurs, the AC drive implements the protection function, and displays the fault code on the operation panel (if the operation panel is available).

Before contacting us for technical support, you can first determine the fault type, analyze the causes, and perform troubleshooting according to the following tables. If the fault cannot be rectified, contact the agent or us

Err22 is the AC drive hardware overcurrent or overvoltage signal. In most situations, hardware overvoltage fault causes Err22.

Fault Name	Display	Possible Causes	Solutions
		1: The output circuit is grounded or	
		short circuited.	1: Eliminate external faults.
		2: The connecting cable of the	2: Install a reactor or an
Inverter unit		motor is too long.	output filter.
protection	Err01	3: The module overheats.	3: Check the air filter and the
		4: The internal connections	cooling fan.
		become loose.	4: Connect all cables
		5:The main control board is faulty.	properly.
		6: The drive board is faulty.	5: Contact the agent or us.
		7: The inverter module is faulty.	
		1: The output circuit is grounded or	1: Eliminate external faults.
		short circuited.	2: Perform the motor auto-
Overcurrent during		2: Motor auto-tuning is not	tuning.
acceleration	Err02	performed.	3: Increase the acceleration
		3: The acceleration time is too	time.
		short.	4: Adjust the manual torque
		4: Manual torque boost or V/F	boost or V/F curve.
		curve is not appropriate.	5: Adjust the voltage to
		5: The voltage is too low.	normal range.
		6: The startup operation is	6: Select rotational speed
		performed on the rotating motor.	tracking restart or start the
		7: A sudden load is added during	motor after it stops.
		acceleration.	7: Remove the added load.
		8: The AC drive model is of too	8: Select an AC drive of
		small power class.	higher power class.

		1: The output circuit is grounded or short circuited.	1: Eliminate external faults. 2: Perform the motor auto-	
Overcurrent during		Motor auto-tuning is not	tuning.	
deceleration	Err03	performed.	3: Increase the deceleration	
		3: The deceleration time is too	time.	
		short.	4: Adjust the voltage to	
		4: The voltage is too low.	normal range.	
		5: A sudden load is added during	5: Remove the added load.	
		deceleration.	6: Install the braking unit and	
		6: The braking unit and braking	braking resistor.	
		resistor are not installed.		l.

		1: The output circuit is grounded or short circuited.	1: Eliminate external faults. 2: Perform the motor auto-
		performed	3. Adjust the voltage to normal
Overcurrent at	Err04	3: The voltage is too low.	range.
constant speed		4: A sudden load is added during	4: Remove the added load.
		operation.	5: Select an AC drive of
		5: The AC drive model is of too	higher power class.
		small power class.	
		1: The input voltage is too high.	1: Adjust the voltage to normal
		2: An external force drives the	range.
		motor during acceleration.	Cancel the external force or
Overvoltage during	Err05	3: The acceleration time is too	install a braking resistor.
acceleration		short.	3: Increase the acceleration
		4: The braking unit and braking	time.
		resistor are not installed.	4: Install the braking unit and
			braking resistor.

Overvoltage during deceleration	Err06	 The input voltage is too high. An external force drives the motor during deceleration. The deceleration time is too short. The braking unit and braking resistor are not installed. 	 Adjust the voltage to normal range. Cancel the external force or install the braking resistor. Increase the deceleration time. Install the braking unit and braking resistor.
Overvoltage at constant speed	Err07	1: The input voltage is too high. 2: An external force drives the motor during deceleration.	 Adjust the voltage to normal range. Cancel the external force or install the braking resistor.
Control power supply fault	Err08	The input voltage is not within the allowable range.	Adjust the input voltage to the allowable range.
Undervoltage	Err09	 Instantaneous power failure occurs on the input power supply. The AC drive's input voltage is not within the allowable range. The bus voltage is abnormal. The rectifier bridge and buffer resistor are faulty. The drive board is faulty. The main control board is faulty. 	1: Reset the fault. 2: Adjust the voltage to normal range. 3: Contact the agent .
AC drive overload	Err10	1: The load is too heavy or locked- rotor occurs on the motor. 2: The AC drive model is of too small power class.	1: Reduce the load and check the motor and mechanical condition. 2: Select an AC drive of higher power class.
Motor overload	Err11	1: P9-01 is set improperly. 2: The load is too heavy or locked- rotor occurs on the motor.	1: Set P9-01 correctly. 2: Reduce the load and check the motor and the mechanical condition.

		1: The three-phase power input is	1: Eliminate external faults
		abnormal	2. Contact the agent or us
Power input phase	Frr12	2. The drive board is faulty	
loss		3: The lightening board is faulty	
1000		1: The cable connecting the AC	1. Eliminate external faults
		drive and the motor is faulty	2: Check whether the motor
		2: The AC drive's three-phase	three-phase winding is
Power output	Frr13	outputs are unbalanced when the	normal
nbase loss		motor is rupping	3: Contact the agent or us
phase loss		1: The ambient temperature is too	1: Lower the ambient
		high	tomporaturo
		11g11. 2: The air filter is blocked	2: Clean the air filter
		2. The air liner is blocked.	2. Clean the air litter.
		3: The fan is damaged.	3: Replace the damaged fan.
Module overheat	Err14	4: The thermally sensitive resistor	4: Replace the damaged
		of the module is damaged.	thermally sensitive resistor.
		1: External fault signal is input via	
		DI.	
External	Err15	2: External fault signal is input via	Reset the operation.
equipment fault		virtual I/O.	
		1: The host computer is in	1: Check the cabling of host
		abnormal state.	computer.
		2: The communication cable is	2: Check the communication
Communication	Err16	faulty.	cabling.
fault		3: P0-28 is set improperly.	3: Set P0-28 correctly.
			1: Replace the faulty drive
		1. The drive board and power	board or power supply board
Contactor fault	Frr17	supply are faulty	2. Replace the faulty
Current detection			1: Peplace the faulty HALL
foult	Err10	2: The drive board is faulty.	
lauit			UCVICC.
Motor		1: The motor parameters are not	1: Set the motor parameters
auto-tuning fault		set according to the nameplate.	according to the nameplate
	Err19	2: The motor auto-tuning times out.	properly.

Encoder fault	Err20	1: The encoder type is incorrect. 2: The cable connection of the encoder is incorrect. 3: The encoder is damaged. 4: The PG card is faulty.	1: Set the encoder type correctly based on the actual situation. 2: Eliminate external faults. 3: Replace the damaged
EEPROM read- write fault	Err21	The EEPROM chip is damaged.	Replace the main control board.
AC drive hardware fault	Err22	1: Overvoltage exists. 2: Overcurrent exists.	1: Handle based on overvoltage. 2: Handle based on overcurrent.
Short circuit to ground	Err23	The motor is short circuited to the ground.	Replace the cable or motor.
Accumulative running time	Err26	The accumulative running time reaches the setting value.	Clear the record through the parameter initialization
User-defined fault 1	Err27	1: The user-defined fault 1 signal is input via DI. 2: User-defined fault 1 signal is input	Reset the operation.
User-defined fault 2	Err28	1: The user-defined fault 2 signal is input via DI. 2: The user-defined fault 2 signal is input via virtual I/O.	Reset the operation.
Accumulative power-on time reached	Err29	The accumulative power-on time reaches the setting value.	Clear the record through the parameter initialization function.
Load becoming 0	Err30	The AC drive running current is lower than P9-64.	Check that the load is disconnected or the setting of P9-64 and P9-65 is correct.
PID feedback los during running	tErr31	The PID feedback is lower than the setting of PA-26.	Check the PID feedback signal or set PA-26 to a proper value.

Pulse-by-pulse current limit fault Motor switchover fault during running	Err40 Err41	The load is too heavy or locked- rotor occurs on the motor. The AC drive model is of too small power class. Change the selection of the motor via terminal during running of the AC drive.	1: Reduce the load and check the motor and mechanical condition. 2: Select an AC drive of higher power class. Perform motor switchover after the AC drive stops.
Too large speed deviation	Err42	1: The encoder parameters are set incorrectly. 2: The motor auto-tuning is not performed.	1: Set the encoder parameters properly. 2: Perform the motor auto- tuning.
Motor over-speed	Err43	1: The encoder parameters are set incorrectly. 2: The motor auto-tuning is not performed. 3: P9-69 and P9-70 are set incorrectly.	1: Set the encoder parameters properly. 2: Perform the motor auto- tuning. 3: Set P9-69 and P9-70 correctly based on the actual situation.
Motor overheat	Err45	 The cabling of the temperature sensor becomes loose. The motor temperature is too high. 	1: Check the temperature sensor cabling and eliminate the cabling fault. 2: Lower the carrier frequency or adopt other heat radiation measures.
Initial position fault	Err51	The motor parameters are not set based on the actual situation.	Check that the motor parameters are set correctly and whether the setting of rated current is too small.

Common Faults and Solutions

You may come across the following faults during the use of the AC drive. Refer to the following table for simple fault analysis.

SN	Fault	Possible Causes	Solutions
1	There is no display	1: There is no power supply to the	1: Check the power supply.
	at power-on.	AC drive or the power input to the AC	2: Check the bus voltage.
		drive is too low.	3: Re-connect the 8-core and
		2: The power supply of the switch on	28-core cables.
		the drive board of the AC drive is	4: Contact the agent or us for
		faulty.	technical support.
		3: The rectifier bridge is damaged.	
		4: The control board or the	
		operation panel is faulty.	
	"HC" is displayed at	1: The cable between the drive board	1: Re-connect the 8-core and
2	power-on.	and the control board is in poor	28-core cables.
		contact.	2: Contact the agent or us for
		2: Related components on the	technical support.
		control board are damaged.	
		3: The motor or the motor cable is	
		short circuited to the ground.	
3	"Err23" is displayed	1: The motor or the motor output	1: Measure the insulation of the
	at power-on.	cable is short-circuited to the ground.	motor and the output cable with a
		2: The AC drive is damaged.	megger.
			2: Contact the agent or us for
		A.The section for it down and an	technical support.
	line AC drive	1: The cooling fan is damaged or	1: Replace the damaged fan.
	uispiay is normai	locked-rotor occurs.	2: Eliminate external fault.
	on But "HC" is	2: The external control terminal cable	
4	displayed after	is short circuited.	
	running and stops		
	Frr14 (module	1. The setting of carrier frequency is	1. Reduce the carrier frequency
	overheat) fault is	too high	(P0-15)
	reported frequently.	2: The cooling fan is damaged, or the	2: Replace the fan and clean the
5		air filter is blocked.	air filter.
		3: Components inside the drive are	3: Contact the agent or us for
		damaged (thermalcoupler or others).	technical support.
1	1	_ <u>-</u> , ,,	

		1: Check the motor and the motor	1: Ensure the cable between the
6	The motor does not	cables.	AC drive and the motor is normal.
	rotate after the AC	2: The AC drive parameters are set	2: Replace the motor or clear
	drive runs.	improperly (motor parameters).	mechanical faults.
		3: The cable between the drive board	3: Check and re-set motor
		and the control board is in poor	parameters.
		contact.	
		1: The parameters are set incorrectly.	1: Check and reset the
		2: The external signal is incorrect.	parameters in group F4.
		3: The jumper bar across OP and	2: Re-connect the external signal
7	The DI terminals are	+24 V becomes loose.	cables.
	disabled.	4: The control board is faulty.	3: Re-confirm the jumper bar
			across OP and +24 V.
	The motor speed is	1: The encoder is faulty.	1: Replace the encoder and
	always low in CLVC	2: The encoder cable is connected	ensure the cabling is proper.
8	mode.	incorrectly or in poor contact.	2: Replace the PG card.
		3: The PG card is faulty.	3: Contact the agent or us for
		4: The drive board is faulty.	technical support.
9	The AC drive	1: The motor parameters are set	1: Re-set motor parameters or
	reports overcurrent	improperly.	re-perform the motor auto- tuning.
	and overvoltage	2: The acceleration/deceleration time	2: Set proper acceleration/
	frequently.	is improper.	deceleration time.
10	Err17 is reported	The soft startup contactor is	1: Check whether the contactor
	upon power-on o	not picked up.	cable is loose.
	running.		2: Check whether the contactor is
			faulty.
			3: Check whether 24 V power
			supply of the contactor is faulty.
			4: Contact the agent or us for
			technical support.
	88888		
	is	Related component on the control	
11	displayed upon	board is damaged.	Replace the control board.

Warranty Agreement

- The warranty period of the product is 18 months (refer to the barcode on the equipment). During the warranty period, if the product fails or is damaged under the condition of normal use by following the instructions, We will be responsible for free maintenance.
- Within the warranty period, maintenance will be charged for the damages caused by the following reasons:
 - a. Improper use or repair/modification without prior permission
 - b. Fire, flood, abnormal voltage, other disasters and secondary disaster
 - c. Hardware damage caused by dropping or transportation after procurement
 - d. Improper operation
 - e. Trouble out of the equipment (for example, external device)
- If there is any failure or damage to the product, please correctly fill out the Product Warranty Card in detail.
- 4. The maintenance fee is charged according to the latest Maintenance Price List.
- The Product Warranty Card is not re-issued. Please keep the card and present it to the maintenance personnel when asking for maintenance.
- 6. If there is any problem during the service, contact our agent or us directly.
- 7. This agreement shall be interpreted by us.

Product Warranty Card

Customer	Add. of unit:	
information	Name of unit:	Contact person:
	P.C.:	Tel.:
	Product model:	
Product	Body barcode (Attach here):	
information		
	Name of agent:	
	(Maintenance time and content):	
Failure		
information		
	Maintenance personnel:	

High-Performance AC Drive