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Manual / English

HL750
AC DRIVE

Preface

Thank you for purchasing the HL750 series AC drive developed Qingdao Hailing Electric Co., Ltd

The HL750 series AC drive is a general-purpose high-performance current vector control AC drive. It can implement the control of asynchronous motor and permanent magnet synchronous motor (PMSM). 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 HL750 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.

Chapter 1 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. Hailing will assume no liability or responsibility for any injury or loss caused by improper operation.

1. 1 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 ormissing. 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 .
	⚠ **WARNING**	• 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. • W hen twoAC drives are laid in the same cabinet, arrange the installation positions properly to ensure the cooling effect.

Use Stage	Safety Grade	Precautions
At wiring	DANGER	• Wiring must be performed only by qualified personnel under instructions described in this manual. Failure to comply may result in unexpected accidents . • 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 theAC drive to ground properly by standard. Failure to comply may result in electric shock .
	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 layer is reliably grounded.
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 theAC drive because such test has been done in the factory. Failure to comply will result in accidents .
	WARNING	• 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
After power-on	DANGER	• 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 theAC drive. Failure to comply may result in electric shock .
	WARNING	• 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.

Use Stage	Safety Grade	Precautions
During operation	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.
	WARNING	• 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.

1.2 General Precautions

1) Requirement on residual current device (RCD)

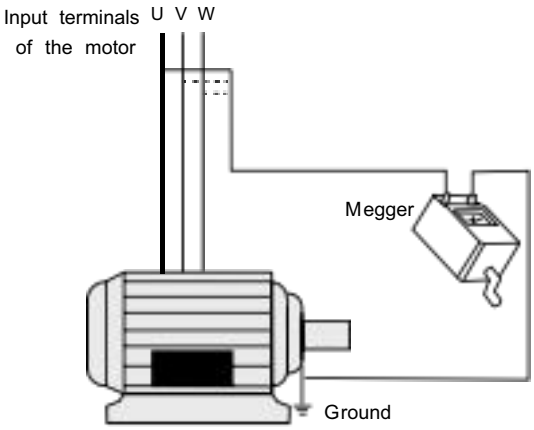
The AC drive generates high leakage current during running, which flows through the protective earthing (PE) conductor. Thus install a type-B RCD at primary side of the power supply. When selecting the RCD, you should consider the transient and steady-state leakage current to ground that may be generated 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 MΩ .



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

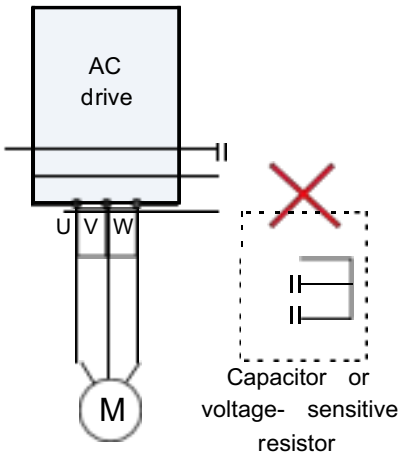
The AC drive may encounter the mechanical resonance point at some output frequencies, which can be avoided by setting the skip frequency.

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

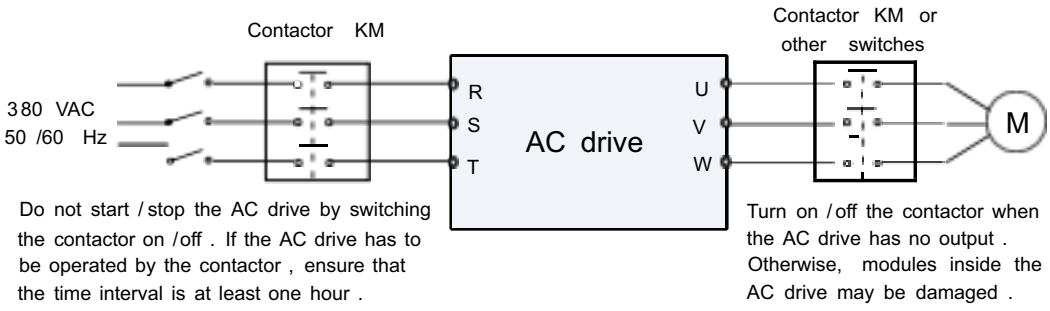
Do not install the capacitor for improving power factor or lightning protection voltage-sensitive resistor on the output side of the AC drive because the output of the AC drive is PWM wave. Otherwise, the AC drive may suffer transient overcurrent or even be damaged.



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.



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 Hailing 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 Hailing for technical support.

15) Disposal

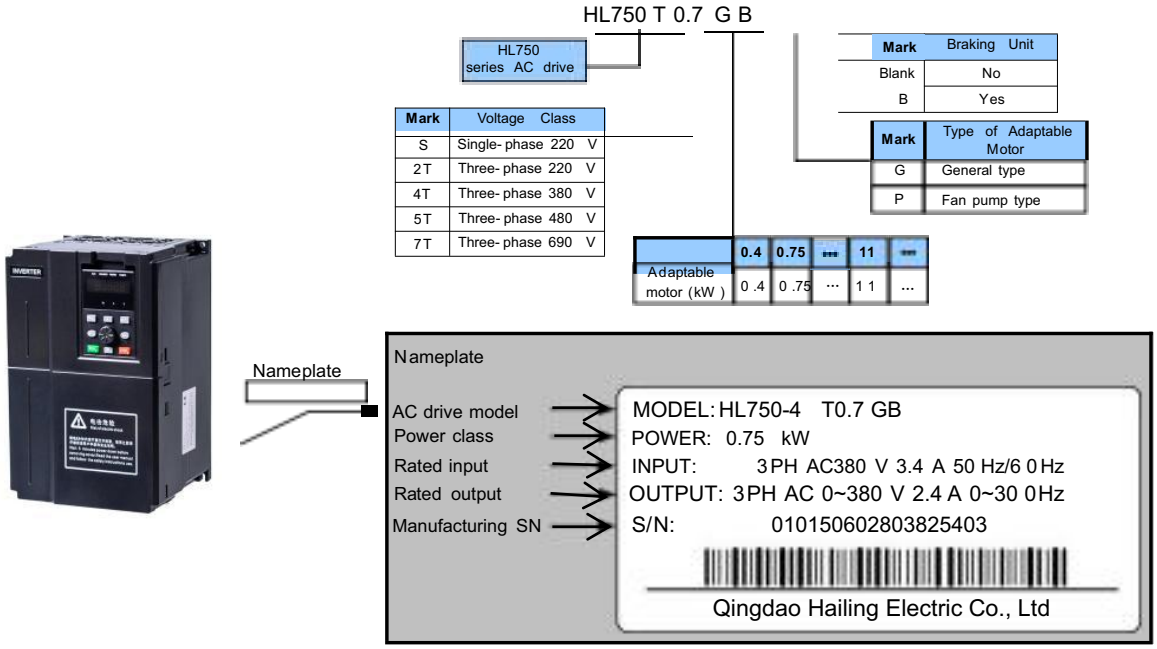
The electrolytic capacitors on the main circuits and PCB may explode when they are burnt. Poisonous gas is generated when the plastic parts are burnt. Treat them as ordinary industrial waste.

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 parts.

Chapter 2 Product Information

2. 1 Designation Rules and Nameplate of the HL750



2.2 Description of Control Circuit Terminals

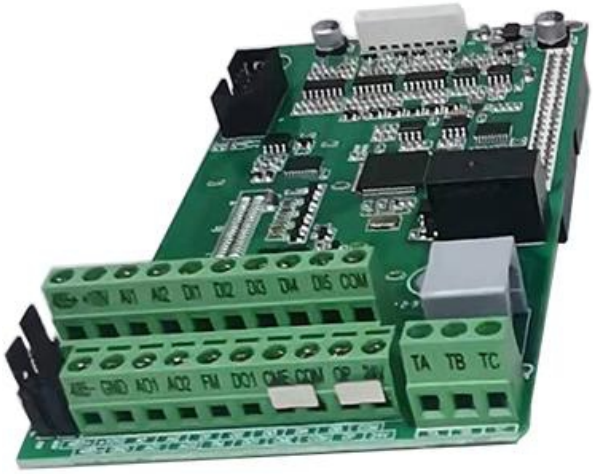


Figure 1

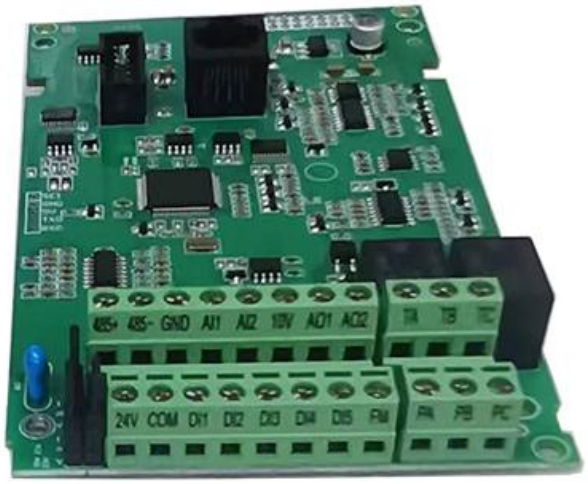
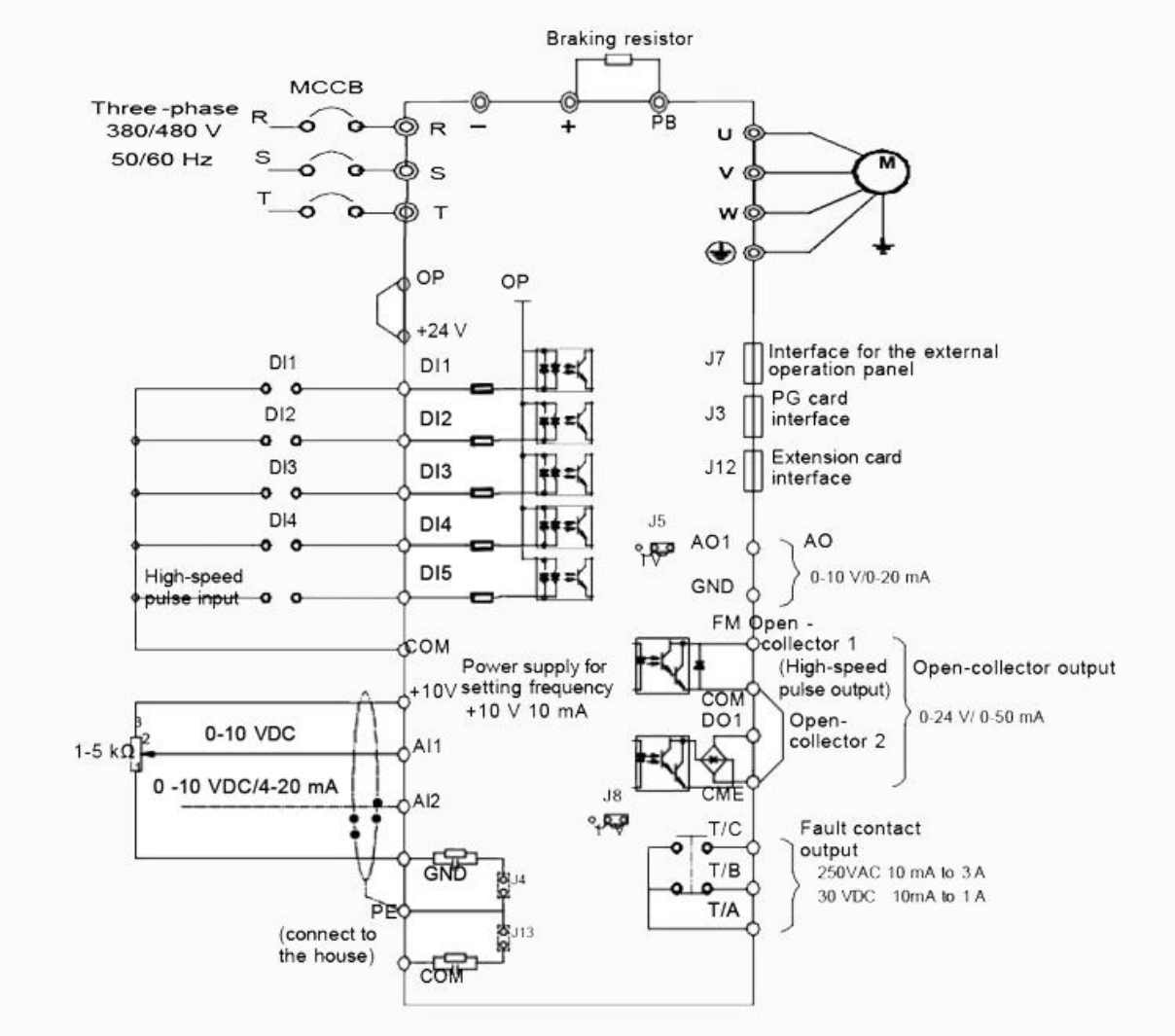


Figure 2

Type	Terminal	Name	Function Description
Power supply	+ 10V-GND	External + 10 V power supply	Provide + 10 V power supply to external unit. Generally, it provides power supply to external potentiometer with resistance range of 1–5 kΩ. Maximum output current: 10 mA
	+24 V-COM	External +24 V power supply Applying to Overvoltage Category II circuit	Provide +24 V power supply to external unit. Generally, it provides power supply to DI/DO terminals and external sensors. Maximum output current: 200 mA
	OP	Input terminal of external power supply	Connect to +24 V by default. When DI1- DI5 need to be driven by external signal, OP needs to be connected to external power supply and be disconnected from +24 V.

Type	Terminal	Name	Function Description
Analog input	AI1-GND	Analog input 1	Input voltage range: 0– 10 VDC Impedance: 22 kΩ
	AI2-GND	Analog input 2	Input range: 0– 10 VDC/4–20 mA, decided by jumper J8 on the control board Impedance: 22 kΩ (voltage input), 500 Ω (current input)
Digital input	DI1-OP	Digital input 1	Optical coupling isolation, compatible with dual polarity input Impedance: 2.4 kΩ Voltage range for level input: 9–30 V
	DI2-OP	Digital input 2	
	DI3-OP	Digital input 3	
	DI4-OP	Digital input 4	
	DI5-OP	High-speed pulse input	Besides features of DI1– DI4, it can be used for high-speed pulse input. Maximum input frequency: 100 kHz
Analog output	AO1-GND	Analog output 1	Voltage or current output is decided by jumper J5. Output voltage range: 0– 10 V Output current range: 0–20 mA
Digital output	DO1-CME	Digital output 1	Optical coupling isolation, dual polarity open collector output Output voltage range: 0–24 V Output current range: 0–50 mA Note that CME and COM are internally insulated, but they are shorted by jumper externally. In this case DO1 is driven by +24 V by default. If you want to drive DO1 by external power supply, remove the jumper.
	FM-COM	High-speed pulse output	It is limited by P5-00 (FM terminal output mode selection). As high-speed pulse output, the maximum frequency hits 100 kHz. As open-collector output, its specification is the same as that of DO1
Relay output	T/A-T/B	NC terminal	Contact driving capacity: 250 VAC, 3 A, COSø = 0.4 30 VDC, 1 A Applying to Overvoltage Category II circuit
	T/A-T/C	NO terminal	

2.3 Wiring of AC Drive Control Circuit



2 . 4 Operation Panel

You can modify the parameters, monitor the working status and start or stop the HL750 by operating the operation panel, as shown in the following figure.

Figure 4-1 Diagram of the operation panel

4. 1.1 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

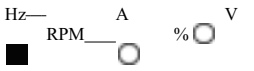
  ON indicates reverse rotation, and OFF indicates forward rotation.

- 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.

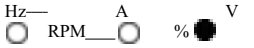
- Unit Indicators

  ● means that the indicator is ON, and ○ means that the indicator is OFF.



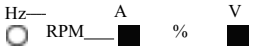
Hz: unit of frequency

A: unit of current



V: unit of voltage

RPM: unit of rotational speed



%: percentage

- Digital Display

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

4. 1.2 Description of Keys on the Operation Panel

Table 4-1 Description of keys on the operation panel

Key	Name	Functio n
PRG	Programming	Enter or exit Level I menu.
ENTE R	Confir m	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 running state, and select the digit to be modified when modifying parameters.
RUN	RUN	Start the AC drive in the operation panel control mode.

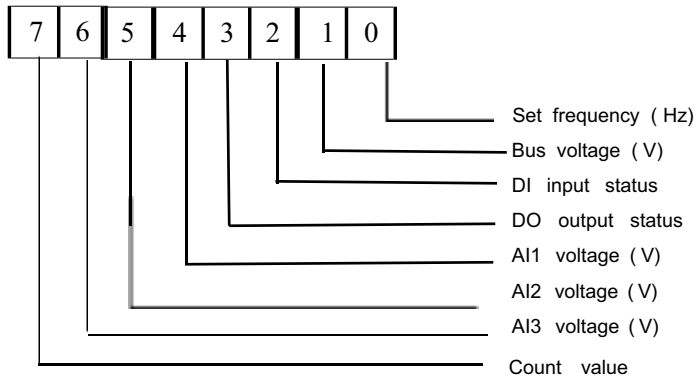
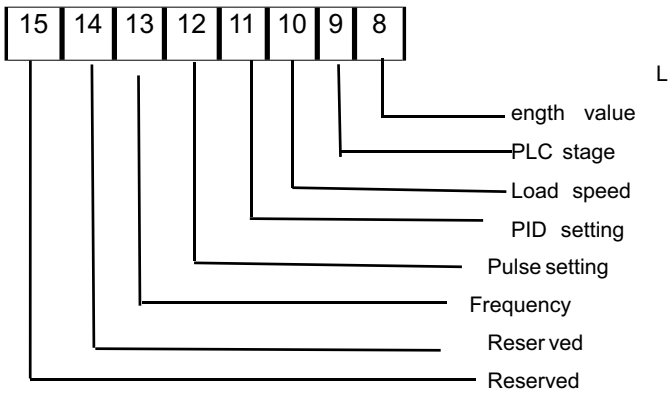
4.5 Definition and Operation of the Multifunction Key (MF.K)

You can define the function (command source switchover or rotation direction switchover) of the multifunction key in P7-01. For details, see the description of P7-01.

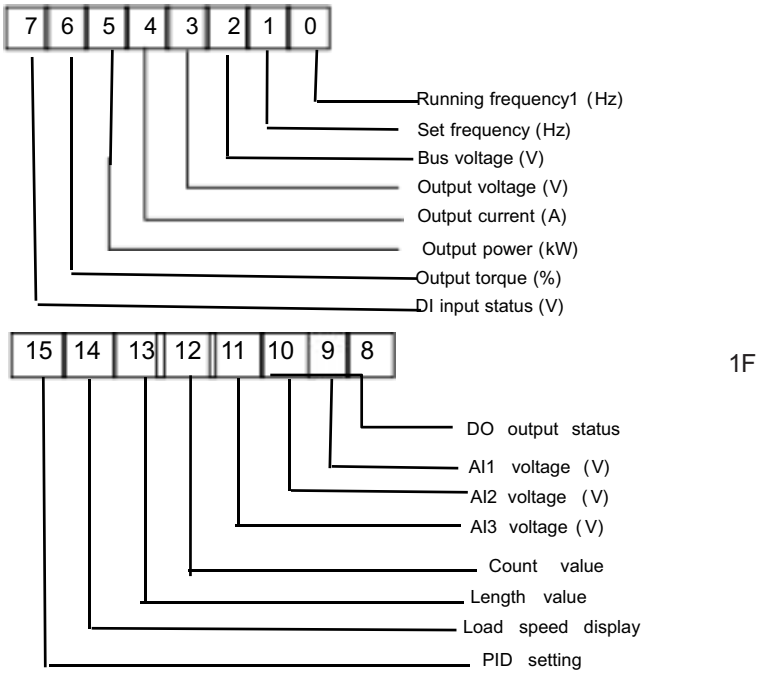
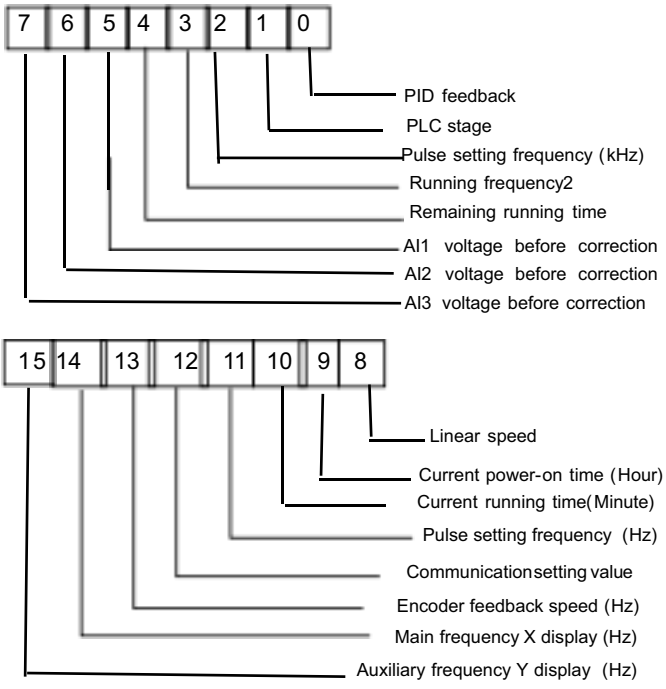
4.6 Viewing Status Parameters

In the stop or running state, you can press on the operation panel to display status parameters. Whether parameters are displayed is determined by the binary bits of values converted from the values of P7-03, P7-04, and P7-05 in the hexadecimal format.

In stop state, a total of 13 status parameters can be displayed, as listed in the following table.

Function Code	Parameter Name	Setting Range	Default
P7-05	LED display stop parameters	0000– FFFF  	33

In running state, five running status parameters are displayed by default, and you can set whether other parameters are displayed by setting P7-03 and P7-04, as listed in the following table.

Function Code	Parameter Name	Setting Range	Default
P7-03	LED display running parameters 1		1F
P7-04	LED display running parameters 2		0

Chapter 3 Function Code Table

If PP-00 is set to a non-zero number, parameter protection is enabled. You must enter the correct user password to enter the menu.

To cancel the password protection function, enter with password and set PP-00 to 0.

Group F and Group A are standard function parameters. Group U 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.

3．1Standard Function Parameters

Function Code	Parameter Name	Setting Range	Default	Property
Group P0: 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	0	★
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: AI1 3: AI2 4: AI3	0	★

Function Code	Parameter Name	Setting Range	Default	Property
P0-03	Main frequency source X selection	5: Pulse setting (DI5) 6: Multi-reference 7: Simple PLC 8: PID 9: Communication setting	0	★
P0-04	Auxiliary frequency source Y selection	The same as P0-03 (Main frequency source X selection)	0	★
P0-05	Range of auxiliary frequency Y for X and Y operation	0: Relative to maximum frequency 1: Relative to main frequency X	0	☆
P0-06	Range of auxiliary frequency Y for X and Y operation	0%– 150%	100%	☆
P0-07	Frequency source selection	Unit's digit (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 relationship) 0: X+Y 1: X-Y 2: Maximum 3: Minimum	00	☆
P0-08	Preset frequency	0.00 to maximum frequency (valid when frequency source is digital setting)	50.00 Hz	☆
P0-09	Rotation direction	0: Same direction 1: Reverse direction	0	☆
P0-10	Maximum frequency	50.00–320.00 Hz(P0-22=2) 50.0-3200.0 Hz(P0-22=1)	50.00 Hz	★
P0-11	Source of frequency upper limit	0: Set by P0-12 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Communication setting	0	★

Function Code	Parameter Name	Setting Range	Default	Property
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	★
P0-21	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	1: 0.1 Hz 2: 0.01 Hz	2	★
P0-23	Retentive of digital setting frequency upon power failure	0: Not retentive 1: Retentive	2	☆
P0-24	Motor parameter group selection	0: Motor parameter group 1 1: Motor parameter group 2 2: Motor parameter group 3 3: Motor parameter group4	0	★
P0-25	Acceleration/ Deceleration time base frequency	0: Maximum frequency (P0-10) 1: Set frequency 2: 100 Hz	0	★
P0-26	Base frequency for UP/ DOWN modification during running	0: Running frequency 1: Set frequency	0	★

Function Code	Parameter Name	Setting Range	Default	Property
P0-27	Binding command source to frequency source	Unit's digit (Binding operation panel command to frequency source) 0: No binding 1: Frequency source by digital setting 2: AI1 3: AI2 4: AI3 5: Pulse setting (DI5) 6: Multi-reference 7: Simple PLC 8: PID 9: Communication setting 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	☆
P0-29	Application macrol	Set range: 0-6553 5 10000 Function code restore factory settings 1: Constant pressure control of single water pump 2: One driven three constant voltage control 3 : One driven five constant voltage control 7 : Fire patrol control 1 1: CNC 100 HZ 1 1 2: CNC 100 HZ 2 2 1: Engraving machine 400 HZ 1 2 2: Engraving machine 400 HZ 2 Notes1 : Restore the factory function code before selecting the number Notes2 : One drag multi-function reference B0 group parameters	00000	☆
Group P1: Motor 1 Parameters				
P1-00	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor 2: Permanent magnetic synchronous motor	1	★

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 > 55 kW)	Model dependent	★
P1-04	Rated motor frequency	0.01 Hz to maximum frequency	Model dependent	★
P1-05	Rated motor rotational speed	1–65535 RPM	Model dependent	★

Function Code	Parameter Name	Setting Range	Default	Property
P1-06	Stator resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
P1-07	Rotor resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
P1-08	Leakage inductive reactance (asynchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
P1-09	Mutual inductive reactance (asynchronous motor)	0. 1–6553.5 mH (AC drive power ≤ 55 kW) 0.01–-655.35 mH (AC drive power > 55 kW)	Model dependent	★
P1-10	No-load current (asynchronous motor)	0.01 to P1-03 (AC drive power ≤ 55 kW) 0. 1 to P1-03 (AC drive power > 55 kW)	Model dependent	★
P1-16	Stator resistance (synchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
P1-17	Shaft D inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
P1-18	Shaft Q inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
P1-20	Back EMF (synchronous motor)	0. 1–6553.5 V	Model dependent	★
P1-27	Encoder pulses per revolution	1–65535	1024	★
P1-28	Encoder type	0: ABZ incremental encoder 1: UVW incremental encoder 2: Resolver 3: SIN/COS encoder 4: Wire-saving UVW encoder	0	★
P1-30	A/B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	★

Function Code	Parameter Name	Setting Range	Default	Property
P1-31	Encoder installation angle	0.0°–359.9°	0.0°	★
P1-32	U, V, W phase sequence of UVW encoder	0: Forward 1: Reverse	0	★
P1-33	UVW encoder angle offset	0.0°–359.9°	0.0°	★
P1-34	Number of pole pairs of resolver	1–65535	1	★
P1-36	Encoder wire-break fault detection time	0.0s: No action 0. 1– 10.0s	0.0s	★
P1-37	Auto- tuning selection	0: No auto-tuning 1: Asynchronous motor static auto- tuning 2: Asynchronous motor complete auto- tuning 11: Synchronous motor with-load auto- tuning 12: Synchronous motor no-load auto- tuning	0	★
Group P2: Vector Control Parameters				
P2-00	Speed loop proportional gain 1	0– 100	30	☆
P2-01	Speed loop integral time 1	0.01– 10.00s	0.50s	☆
P2-02	Switchover frequency 1	0.00 to P2-05	5.00 Hz	☆
P2-03	Speed loop proportional gain 2	0– 100	20	☆
P2-04	Speed loop integral time 2	0.01– 10.00s	1.00s	☆
P2-05	Switchover frequency 2	P2-02 to maximum output frequency	10.00 Hz	☆
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 gain	0–200	64	☆
P2-09	Torque upper limit source in speed control mode	0: P2- 10 1: AI1 2: AI2 3: AI3 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%	☆

Function Code	Parameter Name	Setting Range	Default	Property
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	☆
P2-18	Field weakening mode of synchronous motor	0: No field weakening 1: Direct calculation 2: Automatic adjustment	1	☆
P2-19	Field weakening depth of synchronous motor	50%–500%	100%	☆
P2-20	Maximum field weakening current	1%–300%	50%	☆
P2-21	Field weakening automatic adjustment gain	10%–500%	100%	☆
P2-22	Field weakening integral multiple	2–10	2	☆
Group P3: V/F Control Parameters				
P3-00	V/F curve setting	0: Linear V/F 1: Multi-point V/F 2: Square V/F 3: 1.2-power V/F 4: 1.4-power V/F 6: 1.6-power V/F 8: 1.8-power V/F 9: Reserved 10: V/F complete separation 11: V/F half separation	0	★
P3-01	Torque boost	0.0% (fixed torque boost) 0.1%–30.0%	Model dependent	☆
P3-02	Cut-off frequency of torque boost	0.00 Hz to maximum output frequency	50.00 Hz	★
P3-03	Multi-point V/F frequency 1 (P1)	0.00 Hz to P3-05	0.00 Hz	★
P3-04	Multi-point V/F voltage 1 (V1)	0.0%–100.0%	0.0%	★

Function Code	Parameter Name	Setting Range	Default	Property
P3-05	Multi-point V/F frequency 2 (P2)	P3-03 to P3-07	0.00 Hz	★
P3-06	Multi-point V/F voltage 2 (V2)	0.0%– 100.0%	0.0%	★
P3-07	Multi-point V/F frequency 3 (P3)	P3-05 to rated motor frequency (P1-04) Note: The rated frequencies of motors 2, 3, and 4 are respectively set in A2-04, A3-04, and A4-04.	0.00 Hz	★
P3-08	Multi-point V/F voltage 3 (V3)	0.0%– 100.0%	0.0%	★
P3-09	V/F slip compensation gain	0%–200.0%	0.0%	☆
P3-10	V/F over-excitation gain	0–200	64	☆
P3-11	V/F oscillation suppression gain	0– 100	Model dependent	☆
P3-13	Voltage source for V/F separation	0: Digital setting (P3-14) 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Multi-reference 6: Simple PLC 7: PID 8: Communication setting 100.0% corresponds to the rated motor voltage (P1-02, A4-02, A5-02, A6-02).	0	☆
P3-14	Voltage digital setting for V/F separation	0 V to rated motor voltage	0 V	☆
P3-15	Voltage rise time of V/F separation	0.0– 1000.0s It indicates the time for the voltage rising from 0 V to rated motor voltage.	0.0s	☆
P3-16	Voltage decline time of V/F separation	0.0– 1000.0s It indicates the time for the voltage to decline from rated motor voltage to 0 V.	0.0s	☆
P3-17	Stop mode selection upon V/F separation	0: Frequency and voltage declining to 0 independently 1: Frequency declining after voltage declines to 0	0	☆

Function Code	Parameter Name	Setting Range	Default	Property
Group P4: Input Terminals				
P4-00	DI1 function selection	0: No function 1: Forward RUN (FWD) 2: Reverse RUN (REV) 3: Three-line control 4: Forward JOG (FJOG) 5: Reverse JOG (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 12: Multi-reference terminal 1 13: Multi-reference terminal 2 14: Multi-reference terminal 3 15: Multi-reference terminal 4 16: Terminal 1 for acceleration/deceleration time selection 17: Terminal 2 for acceleration/deceleration time selection 18: Frequency source switchover 19: UP and DOWN setting clear (terminal, operation panel) 20: Command source switchover terminal 1 21: Acceleration/Deceleration prohibited 22: PID pause 23: PLC status reset 24: Swing pause 25: Counter input 26: Counter reset 27: Length count input 28: Length reset 29: Torque control prohibited	1	★
P4-01	DI2 function selection		4	★
P4-02	DI3 function selection		9	★
P4-03	DI4 function selection		12	★
P4-04	DI5 function selection		13	★

Function Code	Parameter Name	Setting Range	Default	Property
P4-05	DI6 function selection	30: Pulse input (enabled only for DI5) 31: Reserved 32: Immediate DC braking 33: Normally closed (NC) input of external fault 34: Frequency modification forbidden 35: Reverse PID action direction	0	★
P4-06	DI7 function selection	36: External STOP terminal 1 37: Command source switchover terminal 2 38: PID integral pause 39: Switchover between main frequency source X and preset frequency	0	★
P4-07	DI8 function selection	40: Switchover between auxiliary frequency source Y and preset frequency 41: Motor selection terminal 1 42: Motor selection terminal 2 43: PID parameter switchover	0	★
P4-08	DI9 function selection	44: User-defined fault 1 45: User-defined fault 2 46: Speed control/Torque control switchover 47: Emergency stop	0	★
P4-09	DI10 function selection	48: External STOP terminal 2 49: Deceleration DC braking 50: Clear the current running time 51: Switchover between two-line mode and three-line mode 52–59: Reserved	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 mode2 2: Three-line mode 1 3: Three-line mode 2	0	★
P4-12	Terminal UP/DOWN rate	0.01–65.535 Hz/s	1.00 Hz/s	☆
P4-13	AI curve 1 minimum input	0.00 V to P4-15	0.00 V	☆

Function Code	Parameter Name	Setting Range	Default	Property
P4-14	Corresponding setting of AI curve 1 minimum input	-100.00%–100.0%	0.0%	☆
P4-15	AI curve 1 maximum input	P4-13 to 10.00 V	10.00 V	☆
P4-16	Corresponding setting of AI curve 1 maximum input	-100.00%–100.0%	100.0%	☆
P4-17	AI1 filter time	0.00–10.00s	0.10s	☆
P4-18	AI curve 2 minimum input	0.00 V to P4-20	0.00 V	☆
P4-19	Corresponding setting of AI curve 2 minimum input	-100.00%–100.0%	0.0%	☆
P4-20	AI curve 2 maximum input	P4-18 to 10.00 V	10.00 V	☆
P4-21	Corresponding setting of AI curve 2 maximum input	-100.00%–100.0%	100.0%	☆
P4-22	AI2 filter time	0.00–10.00s	0.10s	☆
P4-23	AI curve 3 minimum input	0.00 V to P4-25	0.00 V	☆
P4-24	Corresponding setting of AI curve 3 minimum input	-100.00%–100.0%	0.0%	☆
P4-25	AI curve 3 maximum input	P4-23 to 10.00 V	10.00 V	☆
P4-26	Corresponding setting of AI curve 3 maximum input	-100.00%–100.0%	100.0%	☆
P4-27	AI3 filter time	0.00–10.00s	0.10s	☆
P4-28	Pulse minimum input	0.00 kHz to P4-30	0.00 kHz	☆
P4-29	Corresponding setting of pulse minimum input	-100.00%–100.0%	0.0%	☆
P4-30	Pulse maximum input	P4-28 to 50.00 kHz	50.00 kHz	☆
P4-31	Corresponding setting of pulse maximum input	-100.00%–100.0%	100.0%	☆
P4-32	Pulse filter time	0.00–10.00s	0.10s	☆

Function Code	Parameter Name	Setting Range	Default	Property
P4-33	AI curve selection	Unit's digit (AI1 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 A6-00 to A6-07) Curve 5 (4 points, see A6-08 to A6- 15) Ten's digit (AI2 curve selection) Curve 1 to curve 5 (same as AI1) Hundred's digit (AI3 curve selection) Curve 1 to curve 5 (same as AI1)	321	☆
P4-34	Setting for AI less than minimum input	Unit's digit (Setting for AI1 less than minimum input) 0: Minimum value 1: 0.0% Ten's digit (Setting for AI2 less than minimum input) 0, 1 (same as AI1) Hundred's digit (Setting for AI3 less than minimum input) 0, 1 (same as AI1)	000	☆
P4-35	DI valid mode selection 1	0: High level active 1: Low level active 1bit: DI1 2bit: DI2 3bit: DI3 4bit: DI4 5bit: DI5	00000	
P4-37	AI input selection	1bit: AI1 2bit: AI2 0: Voltage 1: Electric	10	★
P4-38	DI1 conduction delay time	0.0–3600.0 s	0.0s	★
P4-39	DI2 conduction delay time	0.0–3600.0 s	0.0s	★
P4-40	DI3 conduction delay time	0.0–3600.0 s	0.0s	★
P4-41	DI4 conduction delay time	0.0–3600.0 s	0.0s	★
P4-42	DI5 conduction delay time	0.0–3600.0 s	0.0s	★

Function Code	Parameter Name	Setting Range	Default	Property
P4-48	DI1 disconnection delay time	0.0–3600.0 s	0.0s	★
P4-49	DI2 disconnection delay time	0.0–3600.0 s	0.0s	★
P4-50	DI3 disconnection delay time	0.0–3600.0 s	0.0s	★
P4-51	DI4 disconnection delay time	0.0–3600.0 s	0.0s	★
P4-52	DI5 disconnection delay time	0.0–3600.0 s	0.0s	★
Group P5: Output Terminals				
P5-00	FM terminal output mode	0: Pulse output (FMP) 1: Switch signal output (FMR)	0	☆
P5-01	FMR function (open-collector output terminal)	0: No output 1: AC drive running 2: Fault output (stop) 3: Frequency-level detection PdT1 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 13: Frequency limited 14: Torque limited 15: Ready for RUN 16: AI1 larger than AI2 17: Frequency upper limit reached 18: Frequency lower limit reached (no output at stop) 19: Undervoltage 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 PdT2 output	2	☆
P5-02	Relay function (T/A-T/B-T/C)		2	☆

Function Code	Parameter Name	Setting Range	Default	Property
P5-03	Extension card relay function (P/A-P/B-P/C)	26: Frequency 1 reached 27: Frequency 2 reached 28: Current 1 reached 29: Current 2 reached 30: Timing reached 31: AI1 input limit exceeded 32: Load becoming 0 33: Reverse running 34: Zero current state 35: Module temperature reached 36: Software current limit exceeded 37: Frequency lower limit reached (having output at stop) 38: Alarm output 39: Motor overheat warning 40: Current running time reached 41: Fault output (There is no output if it is the coast to stop fault and undervoltage occurs.) 42: Frequency1,<= Operating frequency<= Frequency2 43: Frequency1,>= Operating frequency>= Frequency2 44: Frequency1,<= Set frequency<= Frequency2 45: Frequency1,>= Set frequency>= Frequency2 46: Linkage DI1 output 47: Linkage DI2 output 48: Linkage DI3 output 49: Linkage DI4 output 50: Auxiliary water pump1 51: Auxiliary water pump2 52: Auxiliary water pump3 53: Auxiliary water pump4	0	☆
P5-04	O1 function selection (open-collector output terminal)			
P5-04	DO1 function selection (open- collector output terminal)		1	☆
P5-05	Extension card DO2 function		4	☆

Function Code	Parameter Name	Setting Range	Default	Property
P5-06	FMP function selection	0: Running frequency 1: Set frequency 2: Output current 3: Output torque (absolute value) 4: Output power 5: Output voltage 6: Pulse input 7: AI1 8: AI2 9: AI3 10: Length 11: Count value 12: Communication setting 13: Motor rotational speed 14: Output current 15: Output voltage 16: Output torque (actual value) 17: Converter torque output	0	☆
P5-07	AO1 function selection		0	☆
P5-08	AO2 function selection		1	☆
P5-09	Maximum FMP output frequency	0.01–50 .00 kHz	50.00 kHz	☆
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	0.0–6553.5s	0.0s	☆
P5-18	Relay 1 output delay time	0.0–6553.5s	0.0s	☆
P5-19	Relay 2 output delay time	0.0–6553.5s	0.0s	☆
P5-20	DO1 output delay time	0.0–6553.5s	0.0s	☆
P5-21	Retain			

Function Code	Parameter Name	Setting Range	Default	Property
P5-22	DO valid mode selection	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 mode) 0, 1 (same as FMR) Ten thousand's digit (DO2 valid mode) 0, 1 (same as FMR)	00000	☆
P5-23	AO1 Current output selection	0: 0-20 mA 1: 4-20mA	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 mode	0: From frequency at stop 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	★
P6-05	Startup DC braking current/ Pre-excited current	0%– 100%	0%	★
P6-06	Startup DC braking time/ Pre-excited time	0.0– 100.0s	0.0s	★
P6-07	Acceleration/ Deceleration mode	0: Linear acceleration/ deceleration 1: S-curve acceleration/ deceleration A 2: S-curve acceleration/ deceleration B	0	★

Function Code	Parameter Name	Setting Range	Default	Property
P6-08	Time proportion of S-curve start segment	0.0% to (100.0% – P6-09)	30.0%	★
P6-09	Time proportion of S-curve end segment	0.0% to (100.0% – P6-08)	30.0%	★
P6-10	Stop mode	0: Decelerate to stop 1: Coast to stop	0	☆
P6-11	Initial frequency of stop DC braking	0.00 Hz to maximum frequency	0.00 Hz	☆
P6-12	Waiting time of stop DC braking	0.0–36.0s	0.0s	☆
P6-13	Stop DC braking current	0%– 100%	0%	☆
P6-14	Stop DC braking time	0.0–36.0s	0.0s	☆
P6-15	Brake use ratio	0%– 100%	100%	☆
Group P7: Operation Panel and Display				
P7-01	MF.K Key function selection	0: MF.K key disabled 1: Switchover between operation panel control and remote command control (terminal or communication) 2: Switchover between forward rotation and reverse rotation 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	1	☆
P7-03	LED display running parameters 1	0000– FFFF Bit00: Running frequency 1 (Hz) Bit01: Set frequency (Hz) Bit02: Bus voltage (V) Bit03: Output voltage (V) Bit04: Output current (A) Bit05: Output power (kW) Bit06: Output torque (%) Bit07: DI input status	1F	☆

Function Code	Parameter Name	Setting Range	Default	Property
P7-03	LED display running parameters 1	Bit08: DO output status Bit09: AI1 voltage (V) Bit10: AI2 voltage (V) Bit11: AI3 voltage (V) Bit12: Count value Bit13: Length value Bit14: Load speed display Bit15: PID setting	1F	☆
P7-04	LED display running parameters 2	0000– FFFF Bit00: PID feedback Bit01: PLC stage Bit02: Pulse setting frequency (kHz) Bit03: Running frequency 2 (Hz) Bit04: Remaining running time Bit05: AI1 voltage before correction (V) Bit06: AI2 voltage before correction (V) Bit07: AI3 voltage before correction (V) Bit08: Linear speed Bit09: Current power-on time (Hour) Bit10: Current running time (Min) 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)	0	☆

Function Code	Parameter Name	Setting Range	Default	Property
P7-05	LED display stop parameters	0000– FFFF Bit00: Set frequency (Hz) Bit01: Bus voltage (V) Bit02: DI input status Bit03: DO output status Bit04: AI1 voltage (V) Bit05: AI2 voltage (V) Bit06: AI3 voltage (V) Bit07: Count value Bit08: Length value Bit09: PLC stage Bit10: Load speed Bit11: PID setting Bit12: Pulse setting frequency (kHz) Bit13: PID feedback	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	●
P7-14	Accumulative power consumption	0–65535 kWh	-	●
Group P8: Auxiliary Functions				
P8-00	JOG running frequency	0.00 Hz to maximum frequency	2.00 Hz	☆
P8-01	JOG acceleration time	0.0–6500.0 s	20.0 s	☆
P8-02	JOG deceleration time	0.0–6500.0 s	20.0 s	☆
P8-03	Acceleration time 2	0.0–6500.0 s	Model dependent	☆
P8-04	Deceleration time 2	0.0–6500.0 s	Model dependent	☆

Function Code	Parameter Name	Setting Range	Default	Property
P8-05	Acceleration time 3	0.0–6500.0 s	Model dependent	☆
P8-06	Deceleration time 3	0.0–6500.0 s	Model dependent	☆
P8-07	Acceleration time 4	0.0–500.0 s	Model dependent	☆
P8-08	Deceleration time 4	0.0–6500.0 s	Model dependent	☆
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 Hz	☆
P8-11	Frequency jump amplitude	0.00 Hz to maximum frequency	0.00 Hz	☆
P8-12	Forward/ Reverse rotation dead-zone time	0.0–3000.0 s	0.0s	☆
P8-13	Reverse control	0: Enabled 1: Disabled	0	☆
P8-14	Running mode when set frequency lower than frequency lower limit	0: Run at frequency lower limit 1: Stop 2: Run at zero speed	0	☆
P8-15	Droop control	0.00– 10.00 Hz	0.00 Hz	☆
P8-16	Accumulative power-on time threshold	0–65000 h	0 h	☆
P8-17	Accumulative running time threshold	0–65000 h	0 h	☆
P8-18	Startup protection	0: No 1: Yes	0	☆
P8-19	Frequency detection value (PdT1)	0.00 Hz to maximum frequency	50.00 Hz	☆
P8-20	Frequency detection hysteresis (PdT hysteresis 1)	0.0%– 100.0% (PdT1 level)	5.0%	☆
P8-21	Detection range of frequency reached	0.00– 100% (maximum frequency)	0.0%	☆
P8-22	Jump frequency during acceleration/ deceleration	0: Disabled1: Enabled	0	☆
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	☆

Function Code	Parameter Name	Setting Range	Default	Property
P8-28	Frequency detection value (PdT2)	0.00 to maximum frequency	50.00 Hz	☆
P8-29	Frequency detection hysteresis (PdT hysteresis 2)	0.0%– 100.0% (PdT2 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%	☆
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	0.00–600.00 s	0. 10s	☆
P8-36	Output overcurrent threshold	0.0 % (no detection) 0. 1 %–300.0% (rated motor current)	200.0%	☆
P8-37	Output overcurrent detection delay time	0.00–600.00 s	0.00 s	☆
P8-38	Any current reaching 1	0.0% –300.0% (rated motor current)	100.0%	☆
P8-39	Any current reaching 1 amplitud e	0.0% –300.0% (rated motor current)	0.0%	☆
P8-40	Any current reaching 2	0.0% –300.0% (rated motor current)	100.0%	☆
P8-41	Any current reaching 2 amplitud e	0.0% –300.0% (rated motor current)	0.0%	☆
P8-42	Timing function	0: Disabled 1: Enabled	0	☆
P8-43	Timing duration source	0: P8-44 1: AI1 2: AI2 3: AI3 (100% of analog input correspond s to the value of P8-44)	0	☆
P8-44	Timing duration	0.0–6500.0 min	0.0 min	☆
P8-45	AI1 input voltage lower limit	0.00 V to P8-46	3. 10 V	☆
P8-46	AI1 input voltage upper limit	P8-45 to 10.00 V	6.80 V	☆

Function Code	Parameter Name	Setting Range	Default	Property
P8-47	Module temperature threshold	0– 100°C	75°C	☆
P8-48	Cooling fan control	0: Fan working during running 1: Fan working continuously	0	☆
P8-49	Wakeup frequency	Dormant frequency (P8-51) to maximum frequency (P0- 10)	0.00 Hz	☆
P8-50	Wakeup delay time	0.0–6500.0 s	0.0s	☆
P8-51	Dormant frequency	0.00 Hz to wakeup frequency (P8-49)	0.00 Hz	☆
P8-52	Dormant delay time	0.0–6500.0 s	0.0s	☆
P8-53	Current running time reached	0.0–6500.0 min	0.0 min	☆
P8-54	Output power correction coefficient	0.00%–200 .0%	100.0%	☆
Group P9: Fault and Protection				
P9-00	Motor overload protection selection	0: Disabled 1: Enabled	1	☆
P9-01	Motor overload protection gain	0.20– 10.00	1.00	☆
P9-02	Motor overload warning coefficient	50%– 100%	80%	☆
P9-03	Overvoltage stall gain	0 (no stall overvoltage)– 100	0	☆
P9-04	Overvoltage stall protective voltage	120%– 150%	130%	☆
P9-05	Overcurrent stall gain	0– 100	20	☆
P9-06	Overcurrent stall protective current	100%–200%	150%	☆
P9-07	Short- circuit to ground upon power- on	0: Disabled 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/ contactor energizing protection selection	Unit's digit: Input phase loss protection Ten's digit: Contactor energizing protection 0: Disabled 1: Enabled	11	☆

Function Code	Parameter Name	Setting Range	Default	Property
P9-13	Output phase loss protection selection	0: Disabled 1: Enabled	1	☆
P9-14	1st fault type	0: No fault	-	●
P9-15	2nd fault type	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 18: Current detection fault 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 time reached 30: Load becoming 0 31: PID feedback lost during running	-	●

Function Code	Parameter Name	Setting Range	Default	Property
P9-16	3rd (latest) fault type	40: With-wave current limit fault 41: Motor switchover fault during running 42: Too large speed deviation 43: Motor over-speed 45: Motor overheat 51: Initial position fault	-	●
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	-	-	●
P9-21	Output terminal status upon 3rd fault	-	-	●
P9-22	AC drive status upon 3rd fault	-	-	●
P9-23	Power-on time upon 3rd fault	-	-	●
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	-	-	●
P9-31	Output terminal status upon 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	-	-	●
P9-38	Output terminal status upon 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	-	-	●
P9-43	Output terminal status upon 1st fault	-	-	●
P9-44	Frequency upon 1st fault	-	-	●

Function Code	Parameter Name	Setting Range	Default	Property
P9-47	Fault protection action selection 1	Unit's digit (Motor overload, Err11) 0: Coast to stop 1: Stop according to the stop mode 2: Continue to run Ten's digit (Power input phase loss, Err12) Same as unit's digit Hundred's digit (Power output phase loss, Err13) Same as unit's digit Thousand's digit (External equipment fault, Err15) Same as unit's digit Ten thousand's digit (Communication fault, Err16) Same as unit's digit	00000	☆
P9-48	Fault protection action selection 2	Unit's digit (Encoder fault, Err20) 0: Coast to stop 1: Switch over to V/F control, stop according to the stop mode 2: Switch over to V/F control, continue to run Ten's digit (EEPROM read-write fault, Err21) 0: Coast to stop 1: Stop according to the stop mode	00000	☆
P9-48	Fault protection action selection 2	Hundred's digit: reserved Thousand's digit (Motor overheat, Err25) Same as unit's digit in P9-47 Ten thousand's digit (Accumulative running time reached) Same as unit's digit in P9-47	00000	☆

Function Code	Parameter Name	Setting Range	Default	Property
P9-49	Fault protection action selection 3	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 Thousand's digit (Load becoming 0, Err30) 0: Coast to stop 1: Stop according to the stop mode 2: Continue to run at 7% of rated motor frequency and resume to the set frequency if the load recovers Ten thousand's digit (PID feedback lost during running, Err31) Same as unit's digit in P9-47	00000	☆
P9-50	Fault protection action selection 4	Unit's digit (Too large speed deviation, Err42) Same as unit's digit in P9-47 Ten's digit (Motor over-speed, Err43) Same as unit's digit in P9-47 Hundred's digit (Initial position fault, 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	00000	☆
P9-54	Frequency selection for continuing to run upon fault	0: Current running frequency 1: Set frequency 2: Frequency upper limit 3: Frequency lower limit 4: Backup frequency upon abnormality	0	☆

Function Code	Parameter Name	Setting Range	Default	Property
P9-55	Backup frequency upon abnormality	0.0%– 100.0% (maximum frequency)	100.0%	☆
P9-56	Type of motor temperature sensor	0: No temperature sensor 1: PT100 2: PT1000	1	☆
P9-57	Motor overheat protection threshold	0–200°C	110°C	☆
P9-58	Motor overheat warning threshold	0–200°C	90°C	☆
P9-59	Action selection at instantaneous power failure	0: Invalid 1: Decelerate 2: Decelerate to stop	0	☆
P9-60	Action pause judging voltage at instantaneous power failure	80.0%– 100.0%	90.0%	☆
P9-61	Voltage rally judging time at instantaneous power failure	0.00– 100.00s	0.50s	☆
P9-62	Action judging voltage at instantaneous power failure	60.0%– 100.0% (standard bus voltage)	80.0%	☆
P9-63	Protection upon load becoming 0	0: Disabled 1: Enabled	0	☆
P9-64	Detection level of load becoming 0	0.0%– 100.0% (rated motor current)	10.0%	☆
P9-65	Detection time of load becoming 0	0.0–60.0s	1.0s	☆
P9-67	Over-speed detection value	0.0%–50.0% (maximum frequency)	20.0%	☆
P9-68	Over-speed detection time	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 PID Function				
PA-00	PID setting source	0: PA-01 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Communication setting 6: Multi-reference 7: b0-01 setting	0	☆
PA-01	PID digital setting	0.0%– 100.0%	50.0%	☆

Function Code	Parameter Name	Setting Range	Default	Property
PA-02	PID feedback source	0: AI1 1: AI2 2: AI3 3: AI1 – AI2 4: Pulse setting (DI5) 5: Communication setting 6: AI1 + AI2 7: MAX (|AI1|, |AI2|) 8: MIN (|AI1|, |AI2|)	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 Kp 1	0.0– 100.0	20.0	☆
PA-06	Integral time Ti 1	0.01– 10.00s	2.00s	☆
PA-07	Differential time Td1	0.00– 10.000	0.000s	☆
PA-08	Cut-off frequency of PID reverse rotation	0.00 to maximum frequency	2.00 Hz	☆
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	0.00–650.00 s	0.00s	☆
PA-12	PID feedback filter time	0.00–60.00 s	0.00s	☆
PA-13	PID output filter time	0.00–60.00 s	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	☆
PA-18	PID parameter switchover condition	0: No switchover 1: Switchover via DI 2: Automatic switchover based on deviation	0	☆
PA-19	PID parameter switchover deviation 1	0.0% to PA-20	20.0%	☆
PA-20	PID parameter switchover deviation 2	PA-19 to 100.0%	80.0%	☆
PA-21	PID initial value	0.0%– 100.0%	0.0%	☆
PA-22	PID initial value holding time	0.00–650.00 s	0.00s	☆
PA-23	Maximum deviation between two PID outputs in forward direction	0.00%– 100.00%	1.00%	☆

Function Code	Parameter Name	Setting Range	Default	Property
PA-24	Maximum deviation between two PID outputs in reverse direction	0.00%– 100.00%	1.00%	☆
PA-25	PID integral property	Unit's digit (Integral separated) 0: Invalid 1: Valid Ten's digit (Whether to stop integral operation when the output reaches the limit) 0: Continue integral operation 1: Stop integral operation	00	☆
PA-26	Detection value of PID feedback loss	0.0%: Not judging feedback loss 0. 1%– 100.0%	0.0%	☆
PA-27	Detection time of PID feedback loss	0.0–20.0 s	0.0s	☆
PA-28	PID operation at stop	0: No PID operation at stop 1: PID operation at stop	0	☆
Group Pb: Swing Frequency, Fixed Length and Count				
Pb-00	Swing frequency setting mode	0: Relative to the central frequency 1: Relative to the maximum frequency	0	☆
Pb-01	Swing frequency amplitude	0.0%– 100.0%	0.0%	☆
Pb-02	Jump frequency amplitude	0.0%–50.0%	0.0%	☆
Pb-03	Swing frequency cycle	0.0–3000.0 s	10.0s	☆
Pb-04	Triangular wave rising time coefficient	0.0%– 100.0%	50.0%	☆
Pb-05	Set length	0–65535 m	1000 m	☆
Pb-06	Actual length	0–65535 m	0 m	☆
Pb-07	Number of pulses per meter	0. 1–6553.5	100.0	☆
Pb-08	Set count value	1–65535	1000	☆
Pb-09	Designated count value	1–65535	1000	☆
Group PC: Multi-Reference and Simple PLC Function				
PC-00	Reference 0	- 100.0%– 100.0%	0.0%	☆
PC-01	Reference 1	- 100.0%– 100.0%	0.0%	☆
PC-02	Reference 2	- 100.0%– 100.0%	0.0%	☆
PC-03	Reference 3	- 100.0%– 100.0%	0.0%	☆
PC-04	Reference 4	- 100.0%– 100.0%	0.0%	☆

Function Code	Parameter Name	Setting Range	Default	Property
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%	☆
PC-16	Simple PLC running mode	0: Stop after the AC drive runs one cycle 1: Keep final values after the AC drive runs one cycle 2: Repeat after the AC drive runs one cycle	0	☆
PC-17	Simple PLC retentive selection	Unit's digit (Retentive upon power failure) 0: No 1: Yes Ten's digit (Retentive upon stop) 0: No 1: Yes	00	☆
PC-18	Running time of simple PLC reference 0	0.0–6553.5 s (h)	0.0 s (h)	☆
PC-19	Acceleration/ deceleration time of simple PLC reference 0	0–3	0	☆
PC-20	Running time of simple PLC reference 1	0.0–6553.5 s (h)	0.0 s (h)	☆
PC-21	Acceleration/ deceleration time of simple PLC reference 1	0–3	0	☆
PC-22	Running time of simple PLC reference 2	0.0–6553.5 s (h)	0.0 s (h)	☆
PC-23	Acceleration/ deceleration time of simple PLC reference 2	0–3	0	☆
PC-24	Running time of simple PLC reference 3	0.0–6553.5 s (h)	0.0 s (h)	☆
PC-25	Acceleration/ deceleration time of simple PLC reference 3	0–3	0	☆

Function Code	Parameter Name	Setting Range	Default	Property
PC-26	Running time of simple PLC reference 4	0.0–6553.5 s (h)	0.0s (h)	☆
PC-27	Acceleration/ deceleration time of simple PLC reference 4	0–3	0	☆
PC-28	Running time of simple PLC reference 5	0.0–6553.5 s (h)	0.0s (h)	☆
PC-29	Acceleration/ deceleration time of simple PLC reference 5	0–3	0	☆
PC-30	Running time of simple PLC reference 6	0.0–6553.5 s (h)	0.0s (h)	☆
PC-31	Acceleration/ deceleration time of simple PLC reference 6	0–3	0	☆
PC-32	Running time of simple PLC reference 7	0.0–6553.5 s (h)	0.0s (h)	☆
PC-33	Acceleration/ deceleration time of simple PLC reference 7	0–3	0	☆
PC-34	Running time of simple PLC reference 8	0.0–6553.5 s (h)	0.0s (h)	☆
PC-35	Acceleration/ deceleration time of simple PLC reference 8	0–3	0	☆
PC-36	Running time of simple PLC reference 9	0.0–6553.5 s (h)	0.0s (h)	☆
PC-37	Acceleration/ deceleration time of simple PLC reference 9	0–3	0	☆
PC-38	Running time of simple PLC reference 10	0.0–6553.5 s (h)	0.0s (h)	☆
PC-39	Acceleration/ deceleration time of simple PLC reference 10	0–3	0	☆
PC-40	Running time of simple PLC reference 11	0.0–6553.5 s (h)	0.0s (h)	☆
PC-41	Acceleration/ deceleration time of simple PLC reference 1 1	0–3	0	☆
PC-42	Running time of simple PLC reference 12	0.0–6553.5 s (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	0.0–6553.5 s (h)	0.0s (h)	☆
PC-45	Acceleration/ deceleration time of simple PLC reference 13	0–3	0	☆
PC-46	Running time of simple PLC reference 14	0.0–6553.5 s (h)	0.0s (h)	☆

Function Code	Parameter Name	Setting Range	Default	Property
PC-47	Acceleration/ deceleration time of simple PLC reference 14	0–3	0	☆
PC-48	Running time of simple PLC reference 15	0.0–6553.5 s (h)	0.0 s (h)	☆
PC-49	Acceleration/ deceleration time of simple PLC reference 15	0–3	0	☆
PC-50	Time unit of simple PLC running	0: s (second) 1: h (hour)	0	☆
PC-51	Reference 0 source	0: Set by PC-00 1: AI1 2: AI2 3: AI3 4: Pulse setting 5: PID 6: Set by preset frequency (P0-08), modified via terminal UP/DOWN	0	☆

Function Code	Parameter Name	Setting Range	Default	Property
Group Pd: Communication Parameters				
Pd-00	Baud rate	0: 300 BPs 1: 600 BPs 2: 1200 BPs 3: 2400 BPs 4: 4800 BPs 5: 9600 BPs 6: 19200 BPs 7: 38400 BPs 8: 57600 BPs		
Pd-01	Data format	0: No check, data format <8, N,2> 1: Even parity check, data format <8,E, 1> 2: Odd Parity check, data format <8,O, 1> 3: No check, data format <8, N, 1> Valid for Modbus	3	☆
Pd-02	Local address	0: Broadcast address 1–247 Valid for Modbus, PROFIBUS-DP and CANlink	1	☆

Function Code	Parameter Name	Setting Range	Default	Property
Pd-03	Response delay	0–20 ms Valid for Modbus	2 ms	☆
Pd-04	Communication timeout	0.0s (invalid) 0. 1–60.0s Valid for Modbus, PROFIBUS-DP and CANopen	0.0s	☆
Pd-05	Modbus protocol selection and PROFIBUS-DP data format	Unit's digit: Modbus protocol 0: Non-standard Modbus protocol 1: Standard Modbus protocol Ten's digit: PROFIBUS-DP data format 0: PPO1 format 1: PPO2 format 2: PPO3 format 3: PPO5 format	31	☆
Pd-06	Communication reading current resolution	0: 0.01A 1: 0. 1A	0	☆
Pd-08	CANlink communication timeout time	0.0 s: Invalid 0. 1–60.0s	0	☆
Group PE: User-defined Parameters				
PE-00	User-defined function code 0	P0-00 to PP-xx A0-00 to Ax-xx U0-xx to U0-xx	P0-10	☆
PE-01	User-defined function code 1		P0-02	☆
PE-02	User-defined function code 2		P0-03	☆
PE-03	User-defined function code 3		P0-07	☆
PE-04	User-defined function code 4		P0-08	☆
PE-05	User-defined function code 5		P0-17	☆
PE-06	User-defined function code 6		P0-18	☆
PE-07	User-defined function code 7		P3-00	☆
PE-08	User-defined function code 8		P3-01	☆
PE-09	User-defined function code 9		P4-00	☆
PE-10	User-defined function code 10		P4-01	☆
PE-11	User-defined function code 11		P4-02	☆
PE-12	User-defined function code 12		P5-04	☆
PE-13	User-defined function code 13		P5-07	☆
PE-14	User-defined function code 14		P6-00	☆

Function Code	Parameter Name	Setting Range	Default	Property
PE-15	User-defined function code 15	P0-00 to PP-xx A0-00 to Ax-xx U0-xx to U0-xx	P6-10	☆
PE-16	User-defined function code 16		P0-00	☆
PE-17	User-defined function code 17		P0-00	☆
PE-18	User-defined function code 18		P0-00	☆
PE-19	User-defined function code 19		P0-00	☆
PE-20	User-defined function code 20		P0-00	☆
PE-21	User-defined function code 21		P0-00	☆
PE-22	User-defined function code 22		P0-00	☆
PE-23	User-defined function code 23		P0-00	☆
PE-24	User-defined function code 24		P0-00	☆
PE-25	User-defined function code 25		P0-00	☆
PE-26	User-defined function code 26		P0-00	☆
PE-27	User-defined function code 27		P0-00	☆
PE-28	User-defined function code 28		P0-00	☆
PE-29	User-defined function code 29		P0-00	☆
Group PP: 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 501: Back up current user parameters	0	★
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	★

Function Code	Parameter Name	Setting Range	Default	Property
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	Parameter modification property	0: Modifiable 1: Not modifiable	0	☆
Group A0: Torque Control and Restricting Parameters				
A0-00	Speed/ Torque control selection	0: Speed control 1: Torque control	0	★
A0-01	Torque setting source in torque control	0: Digital setting (A0-03) 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Communication setting 6: MIN (AI1, AI2) 7: MAX (AI1, AI2) Full range of values 1–7 corresponds to the digital setting of A0-03.	0	★
A0-03	Torque digital setting in torque control	-200.0% –200.0 %	150.0%	☆
A0-05	Forward maximum frequency in torque control	0.00 Hz to maximum frequency (P0- 10)	50.00 Hz	☆
A0-06	Reverse maximum frequency in torque control	0.00 Hz to maximum frequency (P0- 10)	50.00 Hz	☆
A0-07	Acceleration time in torque control	0.00 –65000s	0.00s	☆
A0-08	Deceleration time in torque control	0.00 –65000s	0.00s	☆
Group A1: Virtual DI (VDI)/ Virtual DO (VDO)				
A1-00	VDI1 function selection	0–59	0	★
A1-01	VDI2 function selection	0–59	0	★
A1-02	VDI3 function selection	0–59	0	★
A1-03	VDI4 function selection	0–59	0	★

Function Code	Parameter Name	Setting Range	Default	Property
A1-04	VDI5 function selection	0–59	0	★
A1-05	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) 0, 1 (same as VDI1)	00000	★
A1-06	VDI state selection	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) 0, 1 (same as VDI1) Ten thousand's digit (VDI5) 0, 1 (same as VDI1)	00000	★
A1-07	Function selection for AI1 used as DI	0–59	0	★
A1-08	Function selection for AI2 used as DI	0–59	0	★
A1-09	Function selection for AI3 used as DI	0–59	0	★
A1-10	State selection for AI used as DI	Unit's digit (AI1) 0: High level valid 1: Low level valid Ten's digit (AI2) 0, 1 (same as unit's digit) Hundred's digit (AI3) 0, 1 (same as unit's digit)	000	★

Function Code	Parameter Name	Setting Range	Default	Property
A1-11	VDO1 function selection	0: Short with physical DIx internally 1–40: Refer to function selection of physical DO in group P5 .	0	☆
A1-12	VDO2 function selection	0: Short with physical DIx internally 1–40: Refer to function selection of physical DO in group P5 .	0	☆
A1-13	VDO3 function selection	0: Short with physical Dix internally 1–40: Refer to function selection of physical DO in group P5 .	0	☆
A1-14	VDO4 function selection	0: Short with physical Dix internally 1–40: Refer to function selection of physical DO in group P5 .	0	☆
A1-15	VDO5 function selection	0: Short with physical Dix internally 1–40: Refer to function selection of physical DO in group P5 .	0	☆
A1-16	VDO1 output delay	0.0–3600.0 s	0.0s	☆
A1-17	VDO2 output delay	0.0–3600.0 s	0.0s	☆
A1-18	VDO3 output delay	0.0–3600.0 s	0.0s	☆
A1-19	VDO4 output delay	0.0–3600.0 s	0.0s	☆
A1-20	VDO5 output delay	0.0–3600.0 s	0.0s	☆
A1-21	VDO state selection	Unit's digit (VDO1) 0: Positive logic 1: Reverse logic Ten's digit (VDO2) 0, 1 (same as unit's digit) Hundred's digit (VDO3) 0, 1 (same as unit's digit) Thousand's digit (VDO4) 0, 1 (same as unit's digit) Ten thousand's digit (VDO5) 0, 1 (same as unit's digit)	00000	☆

Function Code	Parameter Name	Setting Range	Default	Property
Group A2: Motor 2 Parameters				
A2-00	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor 2: Permanent magnetic synchronous motor	0	★
A2-01	Rated motor power	0.1–1000.0 kW	Model dependent	★
A2-02	Rated motor voltage	1–2000 V	Model dependent	★
A2-03	Rated motor current	0.01–655.35 A (AC drive power ≤ 55 kW) 0.1–6553.5 A (AC drive power > 55 kW)	Model dependent	★
A2-04	Rated motor frequency	0.01 Hz to maximum frequency	Model dependent	★
A2-05	Rated motor rotational speed	1–65535 RPM	Model dependent	★
A2-06	Stator resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A2-07	Rotor resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A2-08	Leakage inductive reactance (asynchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A2-09	Mutual inductive reactance (asynchronous motor)	0.1–6553.5 mH (AC drive power ≤ 55 kW) 0.01–655.35 mH (AC drive power > 55 kW)	Model dependent	★
A2-10	No-load current (asynchronous motor)	0.01 A to A2-03 (AC drive power ≤ 55 kW) 0.1 A to A2-03 (AC drive power > 55 kW)	Model dependent	★
A2-16	Stator resistance (synchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★

Function Code	Parameter Name	Setting Range	Default	Property
A2-17	Shaft D inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A2-18	Shaft Q inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A2-20	Back EMF (synchronous motor)	0. 1–6553.5 V	Model dependent	★
A2-27	Encoder pulses per revolution	1–65535	1024	★
A2-28	Encoder type	0: ABZ incremental encoder 1: UVW incremental encoder 2: Resolver 3: SIN/COS encoder 4: Wire-saving UVW encoder	0	★
A2-30	A, B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	★
A2-31	Encoder installation angle	0.0°–359.9°	0.0°	★
A2-32	U, V, W phase sequence of UVW encoder	0: Forward 1: Reverse	0	★
A2-33	UVW encoder angle offset	0.0°–359.9°	0.0°	★
A2-34	Number of pole pairs of resolver	1–65535	1	★
A2-36	Encoder wire-break fault detection time	0.0 s: No action 0. 1– 10.0s	0.0s	★
A2-37	Auto-tuning selection	0: No auto-tuning 1: Asynchronous motor static auto-tuning 2: Asynchronous motor complete auto-tuning 11: Synchronous motor with-load auto-tuning 12: Synchronous motor no-load auto-tuning	0	★
A2-38	Speed loop proportional gain 1	0– 100	30	☆
A2-39	Speed loop integral time 1	0.01– 10.00s	0.50 s	☆
A2-40	Switchover frequency 1	0.00 to A2-43	5.00 Hz	☆
A2-41	Speed loop proportional gain 2	0– 100	15	☆

Function Code	Parameter Name	Setting Range	Default	Property
A2-42	Speed loop integral time 2	0.01– 10.00s	1.00s	☆
A2-43	Switchover frequency 2	A2-40 to maximum output frequency	10.00 Hz	☆
A2-44	Vector control slip gain	50%–200%	100%	☆
A2-45	Time constant of speed loop filter	0.000–0. 100s	0.000 s	☆
A2-46	Vector control over-excitation gain	0–200	64	☆
A2-47	Torque upper limit source in speed control mode	0: A2-48 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Via communication 6: MIN(AI1,AI2) 7: MIN(AI1,AI2)	0	☆
A2-48	Digital setting of torque upper limit in speed control mode	0.0% –200.0 %	150.0%	☆
A2-51	Excitation adjustment proportional gain	0–20000	2000	☆
A2-52	Excitation adjustment integral gain	0–20000	1300	☆
A2-53	Torque adjustment proportional gain	0–20000	2000	☆
A2-54	Torque adjustment integral gain	0–20000	1300	☆
A2-55	Speed loop integral property	Unit's digit: Integral separated 0: Disabled 1: Enabled	0	☆
A2-56	Field weakening mode of synchronous motor	0: No field weakening 1: Direct calculation 2: Adjustment	0	☆
A2-57	Field weakening degree of synchronous motor	50%–500%	100%	☆
A2-58	Maximum field weakening current	1%–300 %	50%	☆
A2-59	Field weakening automatic adjustment gain	10%–500%	100%	☆
A2-60	Field weakening integral multiple	2– 10	2	☆

Function Code	Parameter Name	Setting Range	Default	Property
A2-61	Motor 2 control mode	0: Sensorless flux vector control (SFVC) 1: Closed-loop vector control (CLVC) 2: Voltage/Frequency (V/F) control	0	☆
A2-62	Motor 2 acceleration/ deceleration time	0: Same as motor 1 1: Acceleration/ Deceleration time 1 2: Acceleration/ Deceleration time 2 3: Acceleration/ Deceleration time 3 4: Acceleration/ Deceleration time 4	0	☆
A2-63	Motor 2 torque boost	0.0%: Automatic torque boost 0. 1%–30.0%	Model dependent	☆
A2-65	Motor 2 oscillation suppression gain	0– 100	Model dependent	☆
Group A3: Motor 3 Parameters				
A3-00	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor 2: Permanent magnetic synchronous motor	0	★
A3-01	Rated motor power	0. 1– 1000.0 kW	Model dependent	★
A3-02	Rated motor voltage	1–2000 V	Model dependent	★
A3-03	Rated motor current	0.01–655.35 A (AC drive power ≤ 55 kW) 0. 1–6553.5 A (AC drive power > 55 kW)	Model dependent	★
A3-04	Rated motor frequency	0.01 Hz to maximum frequency	Model dependent	★
A3-05	Rated motor rotational speed	1–65535 RPM	Model dependent	★
A3-06	Stator resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A3-07	Rotor resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★

Function Code	Parameter Name	Setting Range	Default	Property
A3-08	Leakage inductive reactance (asynchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A3-09	Mutual inductive reactance (asynchronous motor)	0. 1–6553.5 mH (AC drive power ≤ 55 kW) 0.01–655.35 mH (AC drive power > 55 kW)	Model dependent	★
A3- 10	No- load current (asynchronous motor)	0.01 A to A2-03 (AC drive power ≤ 55 kW) 0. 1 A to A2-03 (AC drive power > 55 kW)	Model dependent	★
A3- 16	Stator resistance (synchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A3- 17	Shaft D inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A3- 18	Shaft Q inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A3-20	Back EMF (synchronous motor)	0. 1–6553.5 V	Model dependent	★
A3-27	Encoder pulses per revolution	1–65535	1024	★
A3-28	Encoder type	0: ABZ incremental encoder 1: UVW incremental encoder 2: Resolver 3: SIN/COS encoder 4: Wire-saving UVW encoder	0	★
A3-30	A, B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	★
A3-31	Encoder installation angle	0.0°–359.9°	0.0。	★
A3-32	U, V, W phase sequence of UVW encoder	0: Forward 1: Reverse	0	★
A3-33	UVW encoder angle offset	0.0°–359.9°	0.0°	★

Function Code	Parameter Name	Setting Range	Default	Property
A3-34	Number of pole pairs of resolver	1–65535	1	★
A3-36	Encoder wire-break fault detection time	0.0s: No action 0.1–10.0s	0.0s	★
A3-37	Auto-tuning selection	0: No auto-tuning 1: Asynchronous motor static auto-tuning 2: Asynchronous motor complete auto-tuning 11: Synchronous motor with-load auto-tuning 12: Synchronous motor no-load auto-tuning	0	★
A3-38	Speed loop proportional gain 1	0–100	30	☆
A3-39	Speed loop integral time 1	0.01–10.00s	0.50s	☆
A3-40	Switchover frequency 1	0.00 to A2-43	5.00 Hz	☆
A3-41	Speed loop proportional gain 2	0–100	15	☆
A3-42	Speed loop integral time 2	0.01–10.00s	1.00s	☆
A3-43	Switchover frequency 2	A2-40 to maximum output frequency	10.00 Hz	☆
A3-44	Vector control slip gain	50%–200%	100%	☆
A3-45	Time constant of speed loop filter	0.000–0.100s	0.000s	☆
A3-46	Vector control over-excitation gain	0–200	64	☆
A3-47	Torque upper limit source in speed control mode	0: A2-48 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Via communication 6: MIN (AI1, AI2) 7: MAX (AI1, AI2)	0	☆
A3-48	Digital setting of torque upper limit in speed control mode	0.0%–200.0%	150.0%	☆
A3-51	Excitation adjustment proportional gain	0–20000	2000	☆
A3-52	Excitation adjustment integral gain	0–20000	1300	☆

Function Code	Parameter Name	Setting Range	Default	Property
A3-53	Torque adjustment proportional gain	0–20000	2000	☆
A3-54	Torque adjustment integral gain	0–20000	1300	☆
A3-55	Speed loop integral property	Unit's digit: Integral separated 0: Disabled 1: Enabled	0	☆
A3-56	Field weakening mode of synchronous motor	0: No field weakening 1: Direct calculation 2: Adjustment	0	☆
A3-57	Field weakening degree of synchronous motor	50%–500%	100%	☆
A3-58	Maximum field weakening current	1%–300%	50%	☆
A3-59	Field weakening automatic adjustment gain	10%–500%	100%	☆
A3-60	Field weakening integral multiple	2–10	2	☆
A3-61	Motor 2 control mode	0: Sensorless flux vector control (SFVC) 1: Closed-loop vector control (CLVC) 2: Voltage/Frequency (V/F) control	0	☆
A3-62	Motor 2 acceleration/ deceleration time	0: Same as motor 1 1: Acceleration/ Deceleration time 1 2: Acceleration/ Deceleration time 2 3: Acceleration/ Deceleration time 3 4: Acceleration/ Deceleration time 4	0	☆
A3-63	Motor 2 torque boost	0.0%: Automatic torque boost 0.1%–30.0%	Model dependent	☆
A3-65	Motor 2 oscillation suppression gain	0–100	Model dependent	☆
Group A4: Motor 4 Parameters				
A4-00	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor 2: Permanent magnetic synchronous motor	0	★
A4-01	Rated motor power	0.1–1000.0 kW	Model dependent	★

Function Code	Parameter Name	Setting Range	Default	Property
A4-02	Rated motor voltage	1–2000 V	Model dependent	★
A4-03	Rated motor current	0.01–655.35 A (AC drive power ≤ 55 kW) 0. 1–6553.5 A (AC drive power > 55 kW)	Model dependent	★
A4-04	Rated motor frequency	0.01 Hz to maximum frequency	Model dependent	★
A4-05	Rated motor rotational speed	1–65535 RPM	Model dependent	★
A4-06	Stator resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A4-07	Rotor resistance (asynchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A4-08	Leakage inductive reactance (asynchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A4-09	Mutual inductive reactance (asynchronous motor)	0. 1–6553.5 mH (AC drive power ≤ 55 kW) 0.01–655.35 mH (AC drive power > 55 kW)	Model dependent	★
A4- 10	No- load current (asynchronous motor)	0.01 A to A2-03 (AC drive power ≤ 55 kW) 0. 1 A to A2-03 (AC drive power > 55 kW)	Model dependent	★
A4- 16	Stator resistance (synchronous motor)	0.001–65.535 Ω (AC drive power ≤ 55 kW) 0.0001–6.5535 Ω (AC drive power > 55 kW)	Model dependent	★
A4- 17	Shaft D inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★
A4- 18	Shaft Q inductance (synchronous motor)	0.01–655.35 mH (AC drive power ≤ 55 kW) 0.001–65.535 mH (AC drive power > 55 kW)	Model dependent	★

Function Code	Parameter Name	Setting Range	Default	Property
A4-20	Back EMF (synchronous motor)	0. 1–6553.5 V	Model dependent	★
A4-27	Encoder pulses per revolution	1–65535	1024	★
A4-28	Encoder type	0: ABZ incremental encoder 1: UVW incremental encoder 2: Resolver 3: SIN/COS encoder 4: Wire-saving UVW encoder	0	★
A4-30	A, B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	★
A4-31	Encoder installation angle	0.0°–359.9°	0.0°	★
A4-32	U, V, W phase sequence of UVW encoder	0: Forward 1: Reverse	0	★
A4-33	UVW encoder angle offset	0.0°–359.9°	0.0°	★
A4-34	Number of pole pairs of resolver	1–65535	1	★
A4-36	Encoder wire-break fault detection time	0.0 s: No action 0. 1– 10.0s	0.0s	★
A4-37	Auto-tuning selection	0: No auto-tuning 1: Asynchronous motor static auto-tuning 2: Asynchronous motor complete auto-tuning 11: Synchronous motor with-load auto-tuning 12: Synchronous motor no-load auto-tuning	0	★
A4-38	Speed loop proportional gain 1	0– 100	30	☆
A4-39	Speed loop integral time 1	0.01– 10.00s	0.50s	☆
A4-40	Switchover frequency 1	0.00 to A2-43	5.00 Hz	☆
A4-41	Speed loop proportional gain 2	0– 100	15	☆
A4-42	Speed loop integral time 2	0.01– 10.00s	1.00s	☆
A4-43	Switchover frequency 2	A2-40 to maximum output frequency	10.00 Hz	☆
A4-44	Vector control slip gain	50%–200%	100%	☆
A4-45	Time constant of speed loop filter	0.000–0. 100s	0.000s	☆

Function Code	Parameter Name	Setting Range	Default	Property
A4-46	Vector control over-excitation gain	0–200	64	☆
A4-47	Torque upper limit source in speed control mode	0: A2-48 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Via communication 6: MIN(AI1, AI2) 7: MIN(AI1, AI2)	0	☆
A4-48	Digital setting of torque upper limit in speed control mode	0.0%–200.0%	150.0%	☆
A4-51	Excitation adjustment proportional gain	0–20000	2000	☆
A4-52	Excitation adjustment integral gain	0–20000	1300	☆
A4-53	Torque adjustment proportional gain	0–20000	2000	☆
A4-54	Torque adjustment integral gain	0–20000	1300	☆
A4-55	Speed loop integral property	Unit's digit: Integral separated 0: Disabled 1: Enabled	0	☆
A4-56	Field weakening mode of synchronous motor	0: No field weakening 1: Direct calculation 2: Adjustment	0	☆
A4-57	Field weakening degree of synchronous motor	50%–500%	100%	☆
A4-58	Maximum field weakening current	1%–300%	50%	☆
A4-59	Field weakening automatic adjustment gain	10%–500%	100%	☆
A4-60	Field weakening integral multiple	2–10	2	☆
A4-61	Motor 2 control mode	0: Sensorless flux vector control (SFVC) 1: Closed-loop vector control (CLVC) 2: Voltage/Frequency (V/F) control	0	☆

Function Code	Parameter Name	Setting Range	Default	Property
A4-62	Motor 2 acceleration/ deceleration time	0: Same as motor 1 1: Acceleration/ Deceleration time 1 2: Acceleration/ Deceleration time 2 3: Acceleration/ Deceleration time 3 4: Acceleration/ Deceleration time 4	0	☆
A4-63	Motor 2 torque boost	0.0%: Automatic torque boost 0. 1%–30.0%	Model dependent	☆
A4-65	Motor 2 oscillation suppression gain	0– 100	Model dependent	☆
Group A5: Control Optimization Parameters				
A5-00	DPWM switchover frequency upper limit	0.00– 15.00 Hz	12.00 Hz	☆
A5-01	PWM modulation mode	0: Asynchronous modulation 1: Synchronous modulation	0	☆
A5-02	Dead zone compensation mode selection	0: No compensation 1: Compensation mode 1 2: Compensation mode 2	1	☆
A5-03	Random PWM depth	0: Random PWM invalid 1– 10	0	☆
A5-04	Rapid current limit	0: Disabled1: Enabled	1	☆
A5-05	Current detection compensation	0– 100	5	☆
A5-06	Undervoltage threshold	100.0 - 2000.0	Model dependent	☆
A5-07	SFVC optimization mode selection	0: No optimization 1: Optimization mode 1 2: Optimization mode 2	1	☆
A5-08	Dead- zone time adjustment	100%–200%	150%	☆
A5-09	Overvoltage threshold	200.0–2500.0 V	2000.0 V	☆
Group A6: AI Curve Setting				
A6-00	AI curve 4 minimum input	- 10.00 V to A6-02	0.00 V	☆
A6-01	Corresponding setting of AI curve 4 minimum input	- 100.0%– 100.0%	0.0%	☆
A6-02	AI curve 4 inflexion 1 input	A6-00 to A6-04	3.00 V	☆
A6-03	Corresponding setting of AI curve 4 inflexion 1 input	- 100.0%– 100.0%	30.0%	☆
A6-04	AI curve 4 inflexion 1 input	A6-02 to A6-06	6.00 V	☆
A6-05	Corresponding setting of AI curve 4 inflexion 1 input	- 100.0%– 100.0%	60.0%	☆
A6-06	AI curve 4 maximum input	A6-06 to 10.00 V	10.00 V	☆

Function Code	Parameter Name	Setting Range	Default	Property
A6-07	Corresponding setting of AI curve 4 maximum input	- 100.0%– 100.0%	100.0%	☆
A6-08	AI curve 5 minimum input	- 10.00 V to A6- 10	0.00 V	☆
A6-09	Corresponding setting of AI curve 5 minimum input	- 100.0%– 100.0%	0.0%	☆
A6- 10	AI curve 5 inflexion 1 input	A6-08 to A6- 12	3.00 V	☆
A6- 1 1	Corresponding setting of AI curve 5 inflexion 1 input	- 100.0%– 100.0%	30.0 %	☆
A6- 12	AI curve 5 inflexion 1 input	A6- 10 to A6- 14	6.00 V	☆
A6- 13	Corresponding setting of AI curve 5 inflexion 1 input	- 100.0%– 100.0%	60.0%	☆
A6- 14	AI curve 5 maximum input	A6- 14 to 10.00 V	10.00 V	☆
A6- 15	Corresponding setting of AI curve 5 maximum input	- 100.0%– 100.0%	100.0%	☆
A6- 16	Jump point of AI1 input corresponding setting	- 100.0%– 100.0%	0.0%	☆
A6- 17	Jump amplitude of AI1 input corresponding setting	0.0%– 100.0%	0.5%	☆
A6- 18	Jump point of AI2 input corresponding setting	- 100.0%– 100.0%	0.0%	☆
A6- 19	Jump amplitude of AI2 input corresponding setting	0.0%– 100.0%	0.5%	☆
A6-20	Jump point of AI3 input corresponding setting	- 100.0%– 100.0%	0.0%	☆
A6-21	Jump amplitude of AI3 input corresponding setting	0.0%– 100.0%	0.5%	☆
Group A7: User Programmable Function				
A7-00	User programmable function selection	0: Disabled 1: Enabled	0	★

Function Code	Parameter Name	Setting Range	Default	Property
A7-01	Selection of control mode of the output terminals on the control board	Unit's digit: FMR (FM used as digital output) 0: Controlled by the AC drive 1: Controlled by the user programmable card Ten's digit: relay (T/A-T/B-T/C) Same as unit's digit Hundred's digit: DO1 Same as unit's digit Thousand's digit FMR (FM used as pulse output) Same as unit's digit Ten thousand's digit: AO1 Same as unit's digit	0	★
A7-02	AI/AO function selection of the user programmable card	0: AI3 (voltage input), AO2 (voltage output) 1: AI3 (voltage input), AO2 (current output) 2: AI3 (current input), AO2 (voltage output) 3: AI3 (current input), AO2 (current output) 4: AI3 (PTC input), AO2 (voltage output) 5: AI3 (PTC input), AO2 (current output) 6: AI3 (PTC100 input), AO2 (voltage output) 7: AI3 (PTC100 input), AO2 (current output)	0	★
A7-03	FMP output	0.0%– 100.0%	0.0%	☆
A7-04	AO1 output	0.0%– 100.0%	0.0%	☆
A7-05	Digital output	Binary setting Unit's digit: FMR Ten's digit: Relay1 Hundred's digit: DO	1	☆
A7-06	Frequency setting through the user programmable card	- 100.00% to 100.00%	0.0%	☆
A7-07	Torque setting through the user programmable card	-200.00% to 200.00%	0.0%	☆

Function Code	Parameter Name	Setting Range	Default	Property
A7-08	Command given by the user programmable card	1: Forward RUN 2: Reverse RUN 3: Forward JOG 4: Reverse JOG 5: Coast to stop 6: Decelerate to stop 7: Fault reset	0	☆
A7-09	Faults given by the user programmable card	0: No fault 80–89: Fault codes	0	☆
Group A8: Point-point Communication				
A8-00	Point-point communication selection	0: Disabled 1: Enabled	0	☆
A8-01	Master and slave selection	0: Master 1: Slave	0	☆
A8-02	Slave following master command selection	0: Slave not following running commands of the master 1: Slave following running commands of the master	0	☆
A8-03	Usage of data received by slave	0: Torque setting1: Frequency setting	0	☆
A8-04	Zero offset of received data (torque)	-100.00%–100.00%	0.00%	★
A8-05	Gain of received data (torque)	-10.00–10.00	1.00	★
A8-06	Point-point communication interruption detection time	0.0–10.0s	1.0s	☆
A8-07	Master data sending cycle	0.001–10.000s	0.001s	☆
A8-08	Zero offset of received data zero offset (frequency)	-100.00%–100.00%	0.00%	★
A8-09	Gain of received data gain (frequency)	-10.00–10.00	1.00	★
A8-10	Runaway prevention coefficient	0.00%–100.00%	10.00%	★
Group AC: AI/AO Correction				
AC-00	AI1 measured voltage 1	0.500–4.000 V	Factory corrected	☆
AC-01	AI1 displayed voltage 1	0.500–4.000 V	Factory corrected	☆
AC-02	AI1 measured voltage 2	6.000–9.999 V	Factory corrected	☆

Function Code	Parameter Name	Setting Range	Default	Property
AC-03	AI1 displayed voltage 2	6.000–9.999 V	Factory corrected	☆
AC-04	AI2 measured voltage 1	0.500–4.000 V	Factory corrected	☆
AC-05	AI2 displayed voltage 1	0.500–4.000 V	Factory corrected	☆
AC-06	AI2 measured voltage 2	6.000–9.999 V	Factory corrected	☆
AC-07	AI2 displayed voltage 2	9.999– 10.000 V	Factory corrected	☆
AC-08	AI3 measured voltage 1	9.999– 10.000 V	Factory corrected	☆
AC-09	AI3 displayed voltage 1	9.999– 10.000 V	Factory corrected	☆
AC-10	AI3 measured voltage 2	9.999– 10.000 V	Factory corrected	☆
AC-11	AI3 displayed voltage 2	9.999– 10.000 V	Factory corrected	☆
AC-12	AO1 target voltage 1	0.500–4.000 V	Factory corrected	☆
AC-13	AO1 measured voltage 1	0.500–4.000 V	Factory corrected	☆
AC-14	AO1 target voltage 2	6.000–9.999 V	Factory corrected	☆
AC-15	AO1 measured voltage 2	6.000–9.999 V	Factory corrected	☆
AC-16	AO2 target voltage 1	0.500–4.000 V	Factory corrected	☆
AC-17	AO2 measured voltage 1	0.500–4.000 V	Factory corrected	☆
AC-18	AO2 target voltage 2	6.000–9.999 V	Factory corrected	☆
AC-19	AO2 measured voltage 2	6.000–9.999 V	Factory corrected	☆
AC-20	AI2 measured current 1	0.000–20.000 mA	Factory corrected	☆
AC-21	AI2 sampling current 1	0.000–20.000 mA	Factory corrected	☆
AC-22	AI2 measured current 2	0.000–20.000 mA	Factory corrected	☆
AC-23	AI2 sampling current 2	0.000–20.000 mA	Factory corrected	☆

Function Code	Parameter Name	Setting Range	Default	Property
AC-24	AO1 ideal current 1	0.000–20.000 mA	Factory corrected	☆
AC-25	AO1 sampling current 1	0.000–20.000 mA	Factory corrected	☆
AC-26	AO1 ideal current 2	0.000–20.000 mA	Factory corrected	☆
AC-27	AO1 sampling current 2	0.000–20.000 mA	Factory corrected	☆
Group b0: Intelligent water supply parameters				
b0-00	Range of pressure sensor	0-99.99 Bar	10.0	☆
b0-01	Setting pressure	0-99.99 Bar	5.0	☆
b0-02	Dormancy pressure	0- 100%(linkage b0-01)	100	☆
b0-03	Wake up pressure	0- 100%(linkage b0-01)	95	☆
b0-04	Pressure stability deviation	0- 100%(linkage b0-01)	2	☆
b0-05	Dormancy delay	0-6553.5 s	20.0	☆
b0-06	Wake up delay	0-6553.5 s	0	☆
b0-07	Pressure upper limit protection value	0- 100%(linkage b0-01)	10.0	☆
b0-08	Pressure upper limit protection shutdown delay	0-6553.5 s	0.3	☆
b0-09	Lower limit frequency protection delay	0-6553.5 s	3	☆
b0-10	Number of auxiliary water pumps	0-4	0	☆
b0-11	Add auxiliary water pump tolerance	0- 100%(linkage b0-01)	5.0	☆
b0-12	Add auxiliary water pump delay	0-6553.5 s	30.0	☆
b0-13	Minus auxiliary water pump tolerance	0- 100%(linkage b0-01)	5.0	☆
b0-14	Minus auxiliary water pump delay	0-6553.5 s	30.0	☆
b0-15	Upper pressure limit emergency water reducing pump delay	0-6553.5 s	3.0	☆

Function Code	Parameter Name	Min. Unit	Communication Address
Group U0: Standard Monitoring Parameters			
U0-00	Running frequency (Hz)	0.01 Hz	7000H
U0-01	Set frequency (Hz)	0.01 Hz	7001H
U0-02	Bus voltage	0.1 V	7002H
U0-03	Output voltage	1 V	7003H
U0-04	Output current	0.01 A	7004H
U0-05	Output power	0.1 kW	7005H
U0-06	Output torque	0.1%	7006H
U0-07	DI state	1	7007H
U0-08	DO state	1	7008H
U0-09	AI1 voltage (V)	0.01 V	7009H
U0-10	AI2 voltage (V)/ current (mA)	0.01 V/0.01 mA	700AH
U0-11	AI3 voltage (V)	0.01 V	7007BH
U0-12	Count value	1	700CH
U0-13	Length value	1	700DH
U0-14	Load speed	1	700EH
U0-15	PID setting	1	700FH
U0-16	PID feedback	1	7010H
U0-17	PLC stage	1	7011H
U0-18	Input pulse frequency (Hz)	0.01 kHz	7012H
U0-19	Feedback speed	0.01 Hz	7013H
U0-20	Remaining running time	0.1 Min	7014H
U0-21	AI1 voltage before correction	0.001 V	7015H
U0-22	AI2 voltage (V)/ current (mA) before correction	0.01 V/0.01 mA	7016H

Function Code	Parameter Name	Min. Unit	Communication Address
Group U0: Standard Monitoring Parameters			
U0-23	AI3 voltage before correction	0.001 V	7017H
U0-24	Linear speed	1 m/Min	7018H
U0-25	Accumulative power-on time	1 Min	7019
U0-26	Accumulative running time	0.1 Min	701AH
U0-27	Pulse input frequency	1 Hz	701BH
U0-28	Communication setting value	0.01%	701CH
U0-29	Encoder feedback speed	0.01 Hz	701DH
U0-30	Main frequency X	0.01 Hz	701EH
U0-31	Auxiliary frequency Y	0.01 Hz	701FH
U0-32	Viewing any register address value	1	7020H
U0-33	Synchronous motor rotor position	0.1°	7021H
U0-34	Motor temperature	1°C	7022H
U0-35	Target torque	0.1%	7023H
U0-36	Resolver position	1	7024H
U0-37	Power factor angle	0.1°	7025H
U0-38	ABZ position	1	7026H
U0-39	Target voltage upon V/F separation	1 V	7027H
U0-40	Output voltage upon V/F separation	1V	7028H
U0-41	DI state visual display	1	7029H
U0-42	DO state visual display	1	702AH
U0-43	DI function state visual display 1	1	702BH
U0-44	DI function state visual display 2	1	702CH
U0-45	Fault information	1	702DH
U0-58	Phase Z counting	1	703AH
U0-59	Current set frequency	0.01%	703BH
U0-60	Current running frequency	0.01%	703CH
U0-61	AC drive running state	1	703DH
U0-62	Current fault code	1	703EH
U0-63	Sent value of point-point communication	0.01%	703FH
U0-64	Received value of point-point communication	0.01%	7040H
U0-65	Torque upper limit	0.1%	7041H

Chapter 4 Selection and Dimensions

4.1 Electrical Specifications of theYW260

Model	Power Capacity (kVA)	Input Current (A)	Output Current (A)	Adaptable Moto r (kW , HP)		Thermal Power Consumptio n (kW)
Single-phase 220 V, 50/60 Hz						
HL750 S0.4GB	1	5.4	2.3	0.4	0.5	0.016
HL750 S0.7GB	1.5	8.2	4	0.75	1	0.030
HL750 S1.5GB	3	14	7	1.5	2	0.055
HL750 S2.2GB	4	23	9.6	2.2	3	0.072
Three-phase 220 V, 50/60 Hz						
HL750-2T0.4 GB	1.5	3.4	2.1	0.4	0.5	0.016
HL750-2T0.7 5GB	3	5	3.8	0.75	1	0.030
HL750-2T1.5 GB	4	5.8	5.1	1.5	2	0.055
HL750-2T2.2 GB	5.9	10.5	9	2.2	3	0.072
HL750-2T3.7 GB	8.9	14.6	13	3.7	5	0. 132
HL750-2T5.5 GB	17	26	25	5.5	7.5	0.214
HL750-2T7.5 GB	21	35	32	7.5	10	0.288
HL750-2T11 G	30	46.5	45	11	15	0.489
HL750-2T15G	40	62	60	15	20	0.608
HL750-2T18.5 G	57	76	75	18.5	25	0.716
HL750-2T22G	69	92	91	22	30	0.887
HL750-2T30G	85	113	112	30	40	1. 11
HL750-2T37G	114	157	150	37	50	1.32
HL750-2T45G	134	180	176	45	60	1.66
HL750-2T55G	160	214	210	55	75	1.98
HL750-2T75G	231	307	304	75	100	2.02

Model	Power Capacity (kVA)	Input Current (A)	Output Current (A)	Adaptable Motor (kW, HP)		Thermal Power Consumption (kW)
Three-phase 380 V, 50/60 Hz						
HL750-4T0.7GB	1.5	3.4	2.1	0.75	1	0.027
HL750-4T1.5GB	3	5	3.8	1.5	2	0.050
HL750-4T2.2GB	4	5.8	5.1	2.2	3	0.066
HL750-4T3.7GB	5.9	10.5	9	3.7	5	0. 120
HL750-4T5.5GB	8.9	14.6	13	5.5	7.5	0. 195
HL750-4T7.5GB	11	20.5	17	7.5	10	0.262
HL750-4T11GB	17	26	25	11	15	0.445
HL750-4T15GB	21	35	32	15	20	0.553
HL750-4T18.5G	24	38.5	37	18.5	25	0.651
HL750-4T22G	30	46.5	45	22	30	0.807
HL750-4T30G	40	62	60	30	40	1.01
HL750-4T37G	57	76	75	37	50	1.20
HL750-4T45G	69	92	91	45	60	1.51
HL750-4T55G	85	113	112	55	75	1.80
HL750-4T75G	114	157	150	75	100	1.84
HL750-4T90G	134	180	176	90	125	2.08
HL750-4T110G	160	214	210	110	150	2.55
HL750-4T132G	192	256	253	132	200	3.06
HL750-4T160G	231	307	304	160	250	3.61
HL750-4T200G	250	385	377	200	300	4.42
HL750-4T220G	280	430	426	220	300	4.87
HL750-4T250G	355	468	465	250	400	5.51
HL750-4T280G	396	525	520	280	370	6.21
HL750-4T315G	445	590	585	315	500	7.03
HL750-4T355G	500	665	650	355	420	7.81
HL750-4T400G	565	785	725	400	530	8.51
HL750-4T550G	700	960	900	500	660	10.26
HL750-4T630G	882	1130	1100	630	840	12.5

Chapter 5 Maintenance and Troubleshooting

Before contacting Hailing 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 Hailing.

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

Solutions to the faults of theYW260

Fault Name	Display	Possible Causes	Solutions
Inverter unit protection	Err01	1: The output circuit is grounded or short circuited. 2: The connecting cable of the motor is too long. 3: The module overheats. 4: The internal connections become loose. 5: The main control board is faulty. 6: The drive board is faulty. 7: The inverter module is faulty.	1: Eliminate external faults . 2: Install a reactor or an output filter. 3: Check the air filter and the cooling fan. 4: Connect all cables properly. 5: Contact the agent or Hailing.
Overcurren t during acceleratio n	Err02	1: The output circuit is grounded or short circuited. 2: Motor auto-tuning is not performed. 3: The acceleration time is too short. 4: Manual torque boost or V/F curve is not appropriate. 5: The voltage is too low. 6: The startup operation is performed on the rotating motor. 7: A sudden load is added during acceleration. 8: The AC drive model is of too small power class .	1: Eliminate external faults . 2: Perform the motor auto-tuning. 3: Increase the acceleration time. 4: Adjust the manual torque boost or V/F curve. 5: Adjust the voltage to normal range. 6: Select rotational speed tracking restart or start the motor after it stops. 7: Remove the added load. 8: Select an AC drive of higher power class .
Overcurren t during deceleratio n	Err03	1: The output circuit is grounded or short circuited. 2: Motor auto-tuning is not performed. 3: The deceleration time is too short. 4: The voltage is too low. 5: A sudden load is added during deceleration. 6: The braking unit and braking resistor are not installed.	1: Eliminate external faults . 2: Perform the motor auto-tuning. 3: Increase the deceleration time. 4: Adjust the voltage to normal range. 5: Remove the added load. 6: Install the braking unit and braking resistor.

Fault Name	Display	Possible Causes	Solutions
Overcurrent at constant speed	Err04	1: The output circuit is grounded or short circuited. 2: Motor auto-tuning is not performed. 3: The voltage is too low. 4: A sudden load is added during operation. 5: The AC drive model is of too small power class.	1: Eliminate external faults. 2: Perform the motor auto-tuning. 3: Adjust the voltage to normal range. 4: Remove the added load. 5: Select an AC drive of higher power class.
Overvoltage during acceleratio n	Err05	1: The input voltage is too high. 2: An external force drives the motor during acceleration. 3: The acceleration time is too short. 4: The braking unit and braking resistor are not installed.	1: Adjust the voltage to normal range. 2: Cancel the external force or install a braking resistor. 3: Increase the acceleration time. 4: Install the braking unit and braking resistor.
Overvoltage during deceleratio n	Err06	1: The input voltage is too high. 2: An external force drives the motor during deceleration. 3: The deceleration time is too short. 4: The braking unit and braking resistor are not installed.	1: Adjust the voltage to normal range. 2: Cancel the external force or install the braking resistor. 3: Increase the deceleration time. 4: 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.	1: Adjust the voltage to normal range. 2: 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.
Undervoltag e	Err09	1: Instantaneous power failure occurs on the input power supply. 2: The AC drive's input voltage is not within the allowable range. 3: The bus voltage is abnormal. 4: The rectifier bridge and buffer resistor are faulty. 5: The drive board is faulty. 6: The main control board is faulty.	1: Reset the fault. 2: Adjust the voltage to normal range. 3: Contact the agent or Hailing.
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.

Fault Name	Display	Possible Causes	Solutions
Motor overload	Err1 1	1: P9-01 is set improperly. 2: The load is too heavy or locked-rotor occurs on the motor. 3: The AC drive model is of too small power class .	1: Set P9-01 correctly. 2: Reduce the load and check the motor and the mechanical condition. 3: Select an AC drive of higher power class .
Power input phase loss	Err12	1: The three-phase power input is abnormal. 2: The drive board is faulty. 3: The lightening board is faulty. 4: The main control board is faulty.	1: Eliminate external faults . 2: Contact the agent or Hailing.
Power output phase loss	Err13	1: The cable connecting the AC drive and the motor is faulty. 2: The AC drive's three-phase outputs are unbalanced when the motor is running. 3: The drive board is faulty. 4: The module is faulty.	1: Eliminate external faults . 2: Check whether the motor three-phase winding is normal. 3: Contact the agent or Hailing.
Module overheat	Err14	1: The ambient temperature is too high. 2: The air filter is blocked. 3: The fan is damaged. 4: The thermally sensitive resistor of the module is damaged. 5: The inverter module is damaged.	1: Lower the ambient temperature. 2: Clean the air filter. 3: Replace the damaged fan. 4: Replace the damaged thermally sensitive resistor. 5: Replace the inverter module.
External equipment fault	Err15	1: External fault signal is input via DI. 2: External fault signal is input via virtual I/O.	Reset the operation.
Communication fault	Err16	1: The host computer is in abnormal state. 2: The communication cable is faulty. 3: P0-28 is set improperly. 4: The communication parameters in group Pd are set improperly.	1: Check the cabling of host computer. 2: Check the communication cabling. 3: Set P0-28 correctly. 4: Set the communication parameters properly.
Contactor fault	Err17	1: The drive board and power supply are faulty. 2: The contactor is faulty.	1: Replace the faulty drive board or power supply board. 2: Replace the faulty contactor.

Fault Name	Display	Possible Causes	Solutions
Current detection fault	Err18	1: The HALL device is faulty. 2: The drive board is faulty.	1: Replace the faulty HALL device. 2: Replace the faulty drive board.
Motor auto-tuning fault	Err19	1: The motor parameters are not set according to the nameplate. 2: The motor auto-tuning times out.	1: Set the motor parameters according to the nameplate properly. 2: Check the cable connecting the AC drive and the motor.
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 encoder. 4: Replace the faulty PG card.
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 reached	Err26	The accumulative running time reaches the setting value.	Clear the record through the parameter initialization function.
User-defined fault 1	Err27	1: The user-defined fault 1 signal is input via DI. 2: User-defined fault 1 signal is input via virtual I/O.	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 lost during running	Err31	The PID feedback is lower than the setting of PA-26.	Check the PID feedback signal or set PA-26 to a proper value.

Fault Name	Display	Possible Causes	Solutions
Pulse-by-pulse current limit fault	Err40	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 switchover fault during running	Err41	Change the selection of the motor via terminal during running of the AC drive.	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. 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 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	1: The cabling of the temperature sensor becomes loose. 2: 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.

Troubleshooting to common faults of the AC drive

SN	Fault	Possible Causes	Solutions
1	There is no display at power-on.	1: There is no power supply to the AC drive or the power input to the AC drive is too low. 2: The power supply of the switch on the drive board of the AC drive is faulty. 3: The rectifier bridge is damaged. 4: The control board or the operation panel is faulty. 5: The cable connecting the control board and the drive board and the operation panel breaks.	1: Check the power supply. 2: Check the bus voltage. 3: Re-connect the 8-core and 28-core cables. 4: Contact the agent or Hailing for technical support.
2	"HC" is displayed at power-on.	1: The cable between the drive board and the control board is in poor contact. 2: Related components on the control board are damaged. 3: The motor or the motor cable is short circuited to the ground. 4: The HALL device is faulty. 5: The power input to the AC drive is too low.	1: Re-connect the 8-core and 28-core cables. 2: Contact the agent or Hailing for technical support.
3	"Err23" is displayed at power-on.	1: The motor or the motor output cable is short-circuited to the ground. 2: The AC drive is damaged.	1: Measure the insulation of the motor and the output cable with a megger. 2: Contact the agent or Hailing for technical support.
4	The AC drive display is normal upon power-on. But "HC" is displayed after running and stops immediately.	1: The cooling fan is damaged or locked-rotor occurs. 2: The external control terminal cable is short circuited.	1: Replace the damaged fan. 2: Eliminate external fault.
5	Err14 (module overheat) fault is reported frequently.	1: The setting of carrier frequency is too high. 2: The cooling fan is damaged, or the air filter is blocked. 3: Components inside the AC drive are damaged (thermal coupler or others).	1: Reduce the carrier frequency (P0-15). 2: Replace the fan and clean the air filter. 3: Contact the agent or Hailing for technical support.

SN	Fault	Possible Causes	Solutions
6	The motor does not rotate after the AC drive runs.	1: Check the motor and the motor cables. 2: The AC drive parameters are set improperly (motor parameters). 3: The cable between the drive board and the control board is in poor contact. 4: The drive board is faulty.	1: Ensure the cable between the AC drive and the motor is normal. 2: Replace the motor or clear mechanical faults. 3: Check and re-set motor parameters.
7	The DI terminals are disabled.	1: The parameters are set incorrectly. 2: The external signal is incorrect. 3: The jumper bar across OP and +24 V becomes loose. 4: The control board is faulty.	1: Check and reset the parameters in group P4. 2: Re-connect the external signal cables. 3: Re-confirm the jumper bar across OP and +24 V. 4: Contact the agent or Hailing for technical support.
8	The motor speed is always low in CLVC mode.	1: The encoder is faulty. 2: The encoder cable is connected incorrectly or in poor contact. 3: The PG card is faulty. 4: The drive board is faulty.	1: Replace the encoder and ensure the cabling is proper. 2: Replace the PG card. 3: Contact the agent or Hailing for technical support.
9	The AC drive reports overcurrent and overvoltage frequently.	1: The motor parameters are set improperly. 2: The acceleration/deceleration time is improper. 3: The load fluctuates.	1: Re-set motor parameters or re-perform the motor auto-tuning. 2: Set proper acceleration/deceleration time. 3: Contact the agent or Hailing for technical support.
10	Err17 is reported upon power-on or running.	The soft startup contactor is not picked up.	1: Check whether the contactor cable is loose. 2: Check whether the contactor is faulty. 3: Check whether 24 V power supply of the contactor is faulty. 4: Contact the agent or Hailing for technical support.
11	is displayed upon power-on.	Related component on the control board is damaged.	Replace the control board.

Define communication data

This series of frequency converters support four communication protocols: Modbus RTU, CANopen, canlink and PROFIBUS DP, user programmable card and point-to-point communication are derived from canlink protocol. Through these communication protocols, the upper computer can control and monitor the frequency converter and modify and view the functional parameters.
Communication data can be divided into function code data and non function code data. The latter includes operation command, operation status, operation parameters, alarm information, etc.

1 Function code data

The function code data is an important setting parameter of the frequency converter. The functional parameters of group F and group A are as follows:

Function code data	Group P (read/ write)	P0、P1、P2、P3、P4、P5、P6、P7、P8、P9、PA 、PB、PC 、PD 、PE、PF
	Group A (read/ write)	A0、A1、A2、A3、A4、A5、A6、A7、A8、A9、AA、AB、AC、AD、AE、AF

The function code data communication address is defined as follows:

1. When reading function code data for communication

For P0 ~ PF and A0 ~ AF group function code data, the upper sixteen digits of the communication address are directly the function group number, and the lower sixteen digits are directly the serial number of the function code in the function group, for example:

P0-16 function parameters, and its communication address is P010H, where P0H represents P0 group function parameters and 10H represents function code active hexadecimal data format of serial number 16 in the group

AC-08 function parameter, its communication address is AC08, where ACH represents AC group function parameter and 08 H represents function code active hexadecimal data in sequence number group 8

2. When writing function code data for communication

For P0 ~ PF group function code data, its communication address is 16 digits high, which is divided into 00 ~ 0F according to whether it is written to EEPROM or P0 ~ PF, the lower 16 digits are the serial number of the function code in the function group, for example:

Parameter writing function P16-P0

When EEPROM does not need to be written, its communication address is 0010H

When EEPROM needs to be written, its communication address is P010H

For A0 ~ AF group function code data, its communication address is 16 digits high.

According to whether it is necessary to write EEPROM, it is divided into 40 ~ 4F or A0 ~ AF,

the lower 16 digits are the serial number of the function code in the function group, for example:

Write function parameter AC-08

When EEPROM does not need to be written, its communication address is 4C08H

When EEPROM needs to be written, its communication address is AC08H

2 Non function code data

Non function code data	Status data (read only)	Monitoring parameters of group U, fault description of frequency converter and operation status of frequency converter.
	Control parameters (write only)	Control command, communication setting value, digital output terminal control, analog output AO1 control, analog output AO2 control, high speed pulse (FMP) output control, parameter initialization.

1. Status data

The status data is divided into u-group monitoring parameters, inverter fault description and inverter operation status

Group u parameter monitoring parameters

For the description of group u monitoring data, see relevant descriptions in Chapter 5 and Chapter 6, and its address is defined as follows:

For U0 ~ UF, the upper sixteen digits of its communication address are 70 ~ 7F, and the lower sixteen digits are the serial number of the monitoring parameters in the group, for example:

U0-11, its communication address is 700bh

Fault description of frequency converter

When the communication reads the fault description of the frequency converter, the communication address is fixed at 8000 h, and the upper computer can obtain the current frequency converter fault code by reading the address data. See the definition of f9-1 4 function code in Chapter V for the description of the fault code

Operation status of frequency converter

When the communication reads the operation status of the frequency converter, the

Define communication data

communication address is fixed at 3000 h. The upper computer can obtain the current operation status information of the frequency converter by reading the address data, which is defined as follows:

Operation status and communication address of frequency converte r	Read status number definition
3000H	1: Forward running
	2: Reverse operation
	3: Shut down

2. Control parameters

The control parameters are divided into control command, digital output terminal control, analog output AO1 control, analog output AO2 control and high speed pulse (FMP) output control

control command

When P0-02 (command source) is selected as 2: communication control, the upper computer can control the start and stop of the frequency converter and other related commands through the communication address. The control commands are defined as follows:

Control command communication address	Command function
2000H	1: Forward running
	2: Reverse operation
	3: Forward inching
	4: Reverse jog
	5: Free shutdown
	6: Deceleration shutdown
	7: Fault reset

Communication settings

Set value of torque source, PID feedback source, upper limit of intermediate frequency source

The source, etc. is selected as the given data at the given time of communication. The communication address is 1000h. When the upper computer sets the communication address value, the data range is - 10000 ~ 10000, corresponding to the relative given value

Define communication data

of - 100.00% ~ 100.00%

Digital output terminal control

When the function of the digital output terminal is 20: communication control, the upper computer can control the digital output terminal of the frequency converter through the communication address, which is defined as follows:

Digital output terminal control communication address	Command content
2001H	Bit0 : DO1 output control Bit1 : DO2 output control Bit2 : RELAY1 output control Bit3: RELAY2 output control Bit4 : FMR output control BIT5：VDO1 BIT6：VDO2 BIT7：VDO3 BIT8：VDO4 BIT9：VDO5

Analog output AO1 and AO2, high-speed pulse output FMP control

When the analog output AO1 and AO2, high-speed pulse output and FMP output function are selected as 12: communication setting, the upper computer can control the analog output and high-speed pulse output of the frequency converter through the communication address, which is defined as follows:

Output control communication address		Command content
AO1	2002H	0~7FFF Means 0%~100%
AO2	2003H	
FMP	2004H	

Parameter initialization

This function is required when it is necessary to initialize the parameters of the frequency converter through the upper computer.

If PP-00 (user password) is not 0, first verify the password through communication. After the verification is passed, the upper computer will initialize the parameters within 30 seconds.

The communication address for user password verification is 1F00H. Write the correct user password directly to this address to complete password verification

The address for parameter initialization of communication is 1F01H, and its data content is defined as follows:

Define communication data

Parameter initialization communication address	Command function
1F01H	1: Restore factory parameters
	2: Clearly record information
	4: Restore user backup parameters
	501: back up current user parameters

3.Some mailing addresses

Parameter address	Parameter description	Parameter address	Parameter description
1000H	communication setting (decimal) -10000~10000	1010H	PID setting
1001H	operating frequenc y	1011H	PID feedback
1002H	bus voltage	1012H	PLC steps
1003H	output voltage	1013H	Pulse input pulse frequency, unit:0.01 khz
1004H	output current	1014H	feedbac k speed, unit: 0 1Hz
1005H	output power	1015H	remainin g operation time
1006H	output torque	1016H	AI1 voltage before correctio n
1007H	operating speed	1017H	AI2 voltage before correctio n
1008H	DI input flag	1018H	AI3 voltage before correctio n
1009H	DO output flag	1019H	linear speed
100AH	AI1 voltage	101AH	current power on time
100BH	AI2 voltage	101BH	current running time

Define communication data

Parameter address	Parameter description	Parameter address	Parameter description
100CH	AI3 voltage	101CH	pulse input pulse frequency, unit: 1Hz
100DH	count value input	101DH	communication set value
100EH	length value input	101EH	actual feedback speed
100FH	load speed	101FH	main frequency X display
		1020H	secondary frequency Y display

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