MOKWEIR

MK800 Series Vector Frequency Converter
Simplified Manual

Mokweir Transmission Technology (Suzhou) Co., Ltd.

preface

Brief Introduction of Materials

This product is a universal high-performance current vector frequency converter, mainly used for controlling and regulating the speed and torque of three-phase permanent magnet synchronous motors. It can be used for the drive of textile, papermaking, wire drawing, machine tools, packaging, food, fans, water pumps and various automated production equipment.

This manual introduces information such as the system composition, components, dimensions, technical data of the product, as well as mechanical installation, electrical installation, commissioning and trial operation, fault handling, daily maintenance and servicing, specifications and selection of optional accessories, function codes, fault codes, etc.

Note

The operation keyboard does not support the display of capital letters PB and PD; the Pb and Pd displayed on the operation keyboard respectively correspond to the PB and PD group parameters in the manual.

Warranty Statement

Under normal usage, if the product malfunctions or is damaged, our company provides warranty service during the warranty period (please refer to the order form for the product's warranty period in detail). Beyond the warranty period, maintenance fees will be charged.

During the warranty period, repair charges will be collected for product damage caused by the following situations.

- Damage to the product due to non-compliance with the instructions in the manual.
- Damage caused by fire, flooding, or abnormal voltage.
- Damage caused by using the product for abnormal functions.
- Damage caused by using the product beyond the specified usage range.
- Secondary damage to the product caused by force majeure (natural disasters, earthquakes, lightning strikes).

Service fees are calculated according to the manufacturer's standard rates. In the case of a contract, the contract terms take precedence. For detailed warranty information, please refer to the "Product Warranty Card."

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Safety Precautions

Safety Statement

- This chapter explains the safety precautions that need to be observed for the correct use of this product. Before using this product, please read the product manual and understand the relevant information regarding safety precautions. Failure to comply with the safety precautions may result in death, serious injury, or equipment damage.
- The "Danger," "Warning," and "Caution" notes in the manual are not exhaustive of all safety precautions but are supplementary to all safety measures.
- This product should be used in an environment that meets the design specifications; otherwise, it may lead to malfunctions. Faults or damage caused by non-compliance with relevant regulations are not covered under the product quality assurance.
- The company will not bear any legal liability for personal safety accidents, property losses, etc., caused by failure to comply with the contents of this manual or illegal operation of the product.

Safety Statement

⚠**Danger:** Non-compliance with procedures may lead to death or serious bodily harm.

⚠**Warning:** Indicates that failure to follow procedures could result in death or serious bodily harm.

⚠**Caution:** Indicates that failure to comply with procedures may cause minor bodily injury or equipment damage.

Safety Precautions

- The illustrations of the product in this manual sometimes show the product without its cover or safety shield for detail demonstration. When using this product, ensure to properly install the cover or shield and operate according to the manual's instructions.
- The product illustrations in this manual are examples and may slightly differ from the product you ordered; please refer to the actual product you receive.
- Operators must take mechanical protective measures for personal safety. Please wear and use necessary protective gear, such as anti-smash shoes, safety clothing, safety goggles, protective gloves, and sleeves.

Unboxing and Acceptance
⚠**Warning** ● If the product or its accessories are found damaged, rusted, used, etc., during unboxing, do not install! ● If water intrusion, missing parts, or damaged components are discovered inside the product upon unboxing, do not install! ● Carefully compare the packing list with the product name. If they do not match, do not install!
⚠**Caution** ● Before unboxing, check whether the external packaging of the equipment is intact, without any damage, soaking, dampness, or deformation. ● Open the packaging in the order of layers and avoid knocking it hard! Check the equipment and accessories for damage, rust, or dents during unboxing. ● After unboxing, carefully compare with the packing list to verify the quantity and completeness of equipment and accessories.

Storage and Transportation

⚠Warning

- Use professional lifting equipment handled by qualified personnel for transporting large or heavyweight products. Failure to do so poses a risk of injury or product damage.
- Before lifting the product vertically, ensure that components like the front cover and terminal block are securely fastened with screws to prevent the risk of falling components causing injury or product damage.
- Do not stand or stay under the product when it is lifted by lifting equipment.
- When lifting the product with a steel rope, lift it steadily and evenly. Avoid vibrating or impacting the product, flipping it over, or keeping it suspended for long periods, as this could cause injury or product damage.

⚠Caution

- Handle the product with care during transportation, being mindful of objects underfoot to prevent tripping or falling, which could cause injury or product damage.
- When carrying the product by hand, securely hold the casing to prevent parts from falling, which could cause injury.
- Store and transport the product strictly according to the required conditions to avoid product damage. Avoid storing or transporting in places with water splashes, direct sunlight, strong electric fields, magnetic fields, or intense vibrations.
- Avoid storing the product for more than three months. If stored for extended periods, take extra protective measures and conduct necessary inspections.
- Securely package the product before transporting it by vehicle. For long-distance transportation, use an enclosed container.
- Do not transport this product with equipment or items that could potentially affect or damage it.

Installation

⚠Danger

- Only trained professionals with electrical equipment knowledge should operate the device. Operation by non-professionals is strictly prohibited.

⚠Warning

- Before installation, please read the product manual and safety precautions carefully!
- Do not install the product in areas with strong electric fields or electromagnetic interference!
- Before installing, ensure the mechanical strength of the installation site is sufficient to support the weight of the equipment, as failure to do so may lead to mechanical hazards. ·
- When installing, do not wear loose clothing or jewelry, as they may pose an electrocution risk!
- When installing the product in a closed environment (such as inside a cabinet or case), use cooling devices (like cooling fans or air conditioning) to adequately cool the environment to meet installation requirements, as failure to do so may cause overheating or fire.
- Do not modify this product!
- Do not twist the fixed bolts of product components and elements, especially bolts marked in red!
- When the product is installed in a cabinet or terminal device, the cabinet or terminal device must provide appropriate protective devices, such as fireproof, electrical, and mechanical protective shells, meeting the relevant IEC standards and local laws and regulations.
- When installing devices like transformers that cause strong electromagnetic interference, install shielding protection devices to avoid malfunctions in this product!
- Install the product on non-flammable materials like metal, and ensure no flammable materials come into contact with or adhere to the product, as this poses a fire hazard.

⚠Caution

- During installation, cover the top of the product with cloth or paper to prevent metal filings, oil, water, and other foreign objects from entering the product and causing faults. After the operation, remove the cover to avoid blocking ventilation holes, which can lead to abnormal heating.
- When converting a machine from constant speed to variable speed operation, resonance may occur. Installing anti-vibration rubber under the motor frame or using vibration suppression functions can effectively reduce resonance.

When Wiring

⚠Danger

- Non-professionals must not perform equipment installation, wiring, maintenance, inspection, or part replacement!
- Before wiring, cut off all power supplies. After power is cut off, wait for the time specified on the product's warning label before proceeding, as capacitors inside the equipment may retain voltage. Measure the main circuit DC voltage to ensure it is below the safety threshold, as failure to do so poses an electrocution risk.
- Perform wiring, remove the product cover, or touch the circuit board only after cutting off the power to avoid electrocution risk. ·
- Ensure proper grounding of equipment and product to prevent electric shock.

⚠Warning

- Do not connect the input power to the output terminals of the device or product, as it can cause damage to the equipment and even lead to a fire.
- When connecting the drive equipment to the motor, ensure the product and motor terminals are correctly sequenced to prevent the motor from rotating in reverse.
- The cables used for wiring must meet the appropriate gauge and shielding requirements, with the shielding layer of shielded cables needing reliable grounding at one end!
- Tighten terminal screws according to the specified torque in the manual. Insufficient or excessive torque may lead to overheating or damage at the connection, posing a fire hazard.
- After wiring, ensure all cables are correctly connected, and there are no loose screws, washers, or exposed wires inside the product, as they may pose an electrocution risk or damage the product.

⚠Caution

- Follow electrostatic discharge (ESD) precautions and wear an anti-static wristband during wiring to avoid damaging the device or internal circuits.
- When wiring the control circuit, use twisted-pair shielded cables and connect the shield layer to the product's grounding terminal to prevent abnormal operation.

When Powering On

⚠Danger

- Before powering on, ensure the product is properly installed, wired securely, and the motor device is ready to restart.
- Before powering on, confirm that the power supply meets the product's requirements to avoid product damage or fire hazards!
- Do not open the product cabinet door or protective cover, touch any wiring terminals, or disassemble any device or parts while the product is powered on, as it poses an electrocution risk.

⚠Warning

- After wiring and parameter setting, conduct a test run to ensure the machine operates safely, as failure to do so may result in injury or equipment damage.
- Before powering on, ensure the product's rated voltage matches the power supply voltage. Incorrect voltage can cause a fire hazard.
- Before powering on, ensure no one is around the product, motor, or machinery, as it may lead to injury or death.

During Operation

⚠Danger

- Operation of the product by non-professionals is strictly prohibited, as it may lead to injury or death.
- It is forbidden to touch any wiring terminals of the equipment or disassemble any devices or components while the equipment is in operation, as this poses a risk of electric shock.

Warning

- Do not touch the exterior of the equipment, fans, or resistors to gauge temperature, as this may cause burns.
- During operation, avoid allowing foreign objects or metal items to fall into the equipment, as this may cause a fire or damage the product.

During Maintenance

Danger

- Non-professionals are prohibited from installing, wiring, maintaining, inspecting, or replacing parts of the equipment.
- Do not perform maintenance on the equipment while it is powered, as this poses a risk of electric shock.
- After cutting off power to all equipment, wait for the duration specified on the product's warning label before performing any maintenance.
- When using PM motors, even if the product's power is off, induced voltage can be generated at the motor terminals during rotation. Do not touch the motor terminals, as this may lead to electric shock.

Warning

- Conduct routine and periodic inspections and maintenance of the equipment and product as per maintenance requirements, and keep maintenance records.

During Repair

Danger

Non-professionals are prohibited from installing, wiring, maintaining, inspecting, or replacing parts of the equipment.

- Do not perform repairs on the equipment while it is powered, as this poses a risk of electric shock.
- After cutting off power to all equipment, wait for the duration specified on the product's warning label before conducting any inspection or repair.

Warning

- Follow the product warranty agreement for equipment repair.
- When a fuse blows, a circuit breaker trips, or an Earth Leakage Circuit Breaker (ELCB) trips, wait for the duration specified on the product's warning label before reconnecting power or operating the machine, as failing to do so may lead to injury or equipment damage.
- If the equipment malfunctions or is damaged, have it repaired by professionals following repair guidelines, and keep repair records.
- Follow guidelines for replacing wear parts.
- Do not continue to use a damaged machine, as it may cause injury or further damage to the product. · After replacing equipment, ensure to recheck the wiring and reset the parameters.

During Disposal

Warning

- Dispose of the equipment and products according to national regulations and standards to avoid property loss or personal injury.
- Handle and recycle discarded equipment and products as industrial waste to prevent environmental pollution.

Safety Labels

For safe operation, strictly adhere to the safety labels affixed to the equipment. Do not damage or remove the safety labels. The safety label explanations are as follows:

Safety Labels	Content Explanation
	● Before using the product, read the safety-related manuals and instructions carefully, as failure to do so may lead to injury or product damage. ● Do not touch terminal parts or remove covers within 10 minutes after the equipment is powered and after power is cut off, as this poses a risk of electric shock.

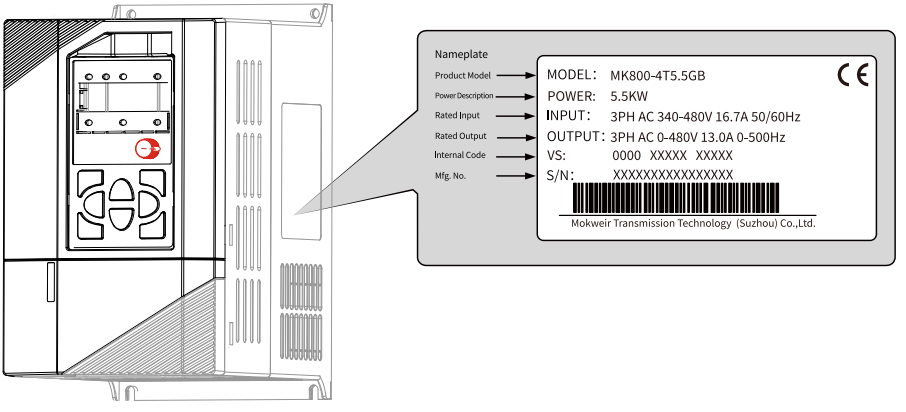
1 Product Information

1.1 Product Positioning and Features

This product is a general-purpose high-performance current vector frequency converter, primarily used for controlling and adjusting the speed and torque of three-phase AC asynchronous motors. It employs high-performance vector control technology, offering low-speed, high-torque output, excellent dynamic characteristics, and strong overload capacity. It features programmable functions for users, backend software monitoring, communication bus functions, and supports various types of encoders. Its combination of functions is rich and powerful, ensuring stable performance. It can be used for driving textile, paper-making, wire drawing, machine tools, packaging, food processing, fans, pumps, and various types of automated production equipment.

Figure 1-1 Product Appearance

1.2 Nameplate and Model



MK800-4T5.5GB

Identifier	Product Name
MK800	Frequency Converter Series

Identifier	Voltage Level
4T	Three-phase 340V~480V
2T	Three-phase 200V~240V
2S	Single-phase 200V~240V

Identifier	Power Level (k)
0.4	0.4
…	…
630	630

Identifier	Adapted Motor Type
G	Constant Torque Type

Identifier	definition
Blank	general-purpose machine
xx	Code of Special-purpose Machinet

Identifier	Brake Unit
Blank	See the explanations below
B	Including braking unit

Figure 1-2 Nameplate Identification and Product Naming

1.3 System Connection Diagram

When this series of frequency converters controls synchronous motors to form a control system, various electrical components must be installed on the input and output sides of the converter to ensure the system's safety and stability. The product system composition is as shown in the diagram below.

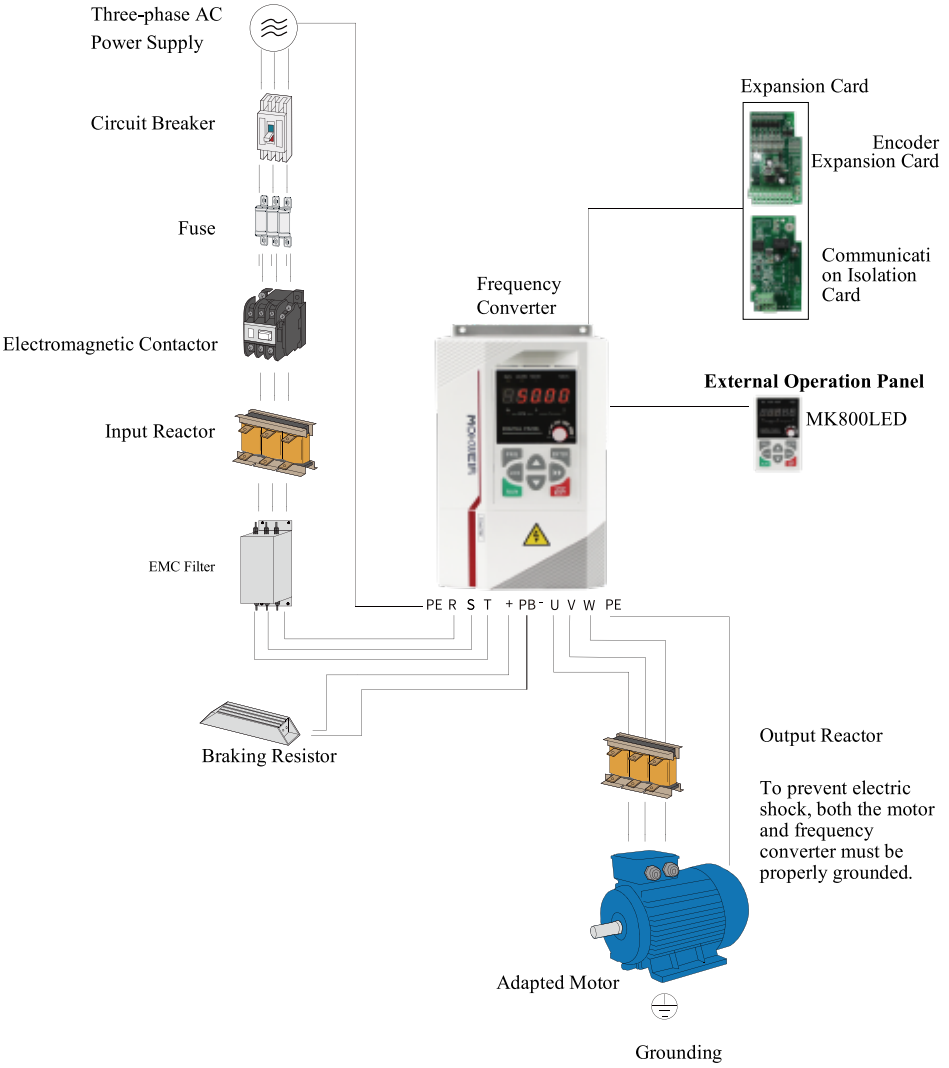


Figure 1-3 System Composition Diagram

Table 1-1 Usage Instructions for Peripheral Electrical Components of the System

Name	Description
Circuit Breaker	Installed between the power supply and the input side of the frequency converter. Short-circuit breaker: Cuts off the power supply in the event of overcurrent in downstream equipment to prevent accidents. Earth Leakage Circuit Breaker: The frequency converter may produce high-frequency leakage current during operation. To prevent electric shock and potential electric fires, install an appropriate earth leakage circuit breaker according to the site conditions.
Fuse	Prevents accidents due to short circuits, protecting downstream semiconductor devices.
(Electromagnetic) Contactor	For switching the frequency converter on and off. Avoid frequent power cycling (intervals should not be less than one hour) or direct starting operations through the contactor.
AC Input Reactor	Improves the power factor on the input side. Effectively eliminates high-order harmonics on the input side, preventing damage to other equipment due to voltage waveform distortion. Eliminates input current imbalance caused by power phase imbalance.
EMC Filter	Reduces conducted and radiated interference from the frequency converter. Lowers the conducted interference flowing from the power source to the frequency converter, enhancing its interference resistance.
Simple Filter	Reduces conducted and radiated interference from the frequency converter.
Braking Resistor	For models with a B in the name, use a braking resistor; the motor dissipates regenerative energy through the braking resistor during deceleration.
Brake Unit	For models without a B in the name, use a braking unit and the recommended braking resistor; the motor dissipates regenerative energy through the braking resistor during deceleration.
AFE Unit (Active Front End)	Mokweir frequency converters can optionally be equipped with an AFE (Active Front End) unit. The AFE unit can feed the energy generated during motor braking back into the grid, eliminating the need for a braking unit and resistor, and reducing heat pollution to the surrounding environment. The AFE unit features energy saving, low noise, low harmonic pollution, and high power factor.
DC Reactor	Improves the power factor on the input side. Improves the overall efficiency and thermal stability of the frequency converter; Effectively eliminates the impact of high-order harmonics on the input side of the frequency converter, reducing conducted and radiated interference.
Output Reactor	The output side of the frequency converter generally contains many high-order harmonics. When the distance between the motor and the frequency converter is significant, large distributed capacitance in the line can occur. In this scenario, certain harmonics might resonate in the circuit, causing two types of impacts: 1. Damaging the insulation properties of the motor, which can lead to long-term motor damage. 2. Generating significant leakage current, triggering frequent protection in the frequency converter. Installing an output reactor can protect motor insulation and reduce bearing currents.
Ferrite Cores and Snap-On Ferrites	Installing ferrite cores on the input side can suppress noise in the drive's input power system. Installing ferrite cores on the output side primarily reduces drive interference with external devices, while also lowering bearing currents.
Motor	Please choose an adapted motor as recommended.
External Keypad	External LED keypads MK800LED

2 Overall Dimensions

2.1 MK800 Overall Dimensions

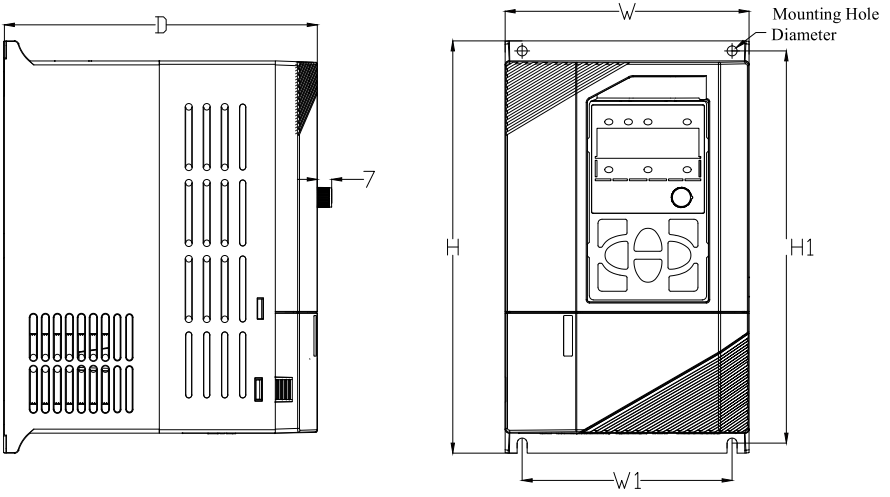


Figure 2-1 1 MK800 External Dimensions and Installation Diagram

MK800 External and Mounting Hole Dimensions

Driver Model	Structural Parameter									
	External Dimensions mm			Installation Dimensions mm			Packaging Dimensions cm			Total Weight KG
	H	W	D	H1	W1	Mounting Hole Diameter	H2	W2	D2	KG
Single-phase 220V										
MK800-2S0.4GB	206	122	164	196	105	φ4	24	17	21	2.3
MK800-2S0.75GB										2.3
MK800-2S1.5GB										2.3
MK800-2S2.2GB										2.4
MK800-2S4.0GB										2.5
MK800-2S5.5GB	278	142	181	267	120	φ5	31	20	24	3.6
MK800-2S7.5PB										3.7
MK800-2S7.5GB	348	208	205	336	186	φ6	39	27	27	6.2
MK800-2S11GB										6.6
MK800-2S15GB										7.1
Three-phase 220V										
MK800-2T0.4GB	206	122	164	196	105	φ4.7	24	17	21	2.3
MK800-2T1.5GB										2.3
MK800-2T2.2GB										2.4
MK800-2T4.0GB										2.5

Drive Model	Structural Parameter									
	External Dimensions mm			Installation Dimensions mm			Packaging Dimensions cm			Total Weight KG
	H	w	D	H1	W1	Mounting Hole Diameter	H2	W2	D2	KG
Three-phase 220V										
MK800-2T5.5GB	278	142	181	267	120	φ6	31	20	24	3.6
MK800-2T7.5PB										3.7
MK800-2T7.5GB	348	208	205	336	186	φ5.8	39	27	27	6.2
MK800-2T11GB										6.6
MK800-2T15GB										7.1
MK800-2T18.5G	430	283	247	418	200	φ6.5	51	36	32	17
MK800-2T22G										18
MK800-2T30G	510	340	280	495	270	φ8	64	45	39	30
MK800-2T37G										31
MK800-2T45G	602	474	315	576	413	φ8	69.5	55	52	54
MK800-2T55G										55
MK800-2T75G										57
MK800-2T90G	870	400	355	840	300	φ12	104	53	56	88
MK800-2T110G										90
MK800-2T132G	966	569	390	932	500	φ12	112	67	60	123
Three-phase380V										
MK800-4T0.75GB	206	122	164	196	105	φ4.7	24	17	21	2.3
MK800-4T1.5GB										2.3
MK800-4T2.2GB										2.3
MK800-4T4.0GB										2.4
MK800-4T5.5GB-S										2.5
MK800-4T5.5GB	278	142	181	267	120	φ6	31	20	24	3.6
MK800-4T7.5GB										3.7
MK800-4T11GB										4
MK800-4T15GB-S										4.5
MK800-4T15GB	348	208	205	336	186	φ5.8	39	27	27	6.4
MK800-4T18.5GB										6.5
MK800-4T22GB										6.8
MK800-4T30GB-S										7.3
MK800-4T30G	430	283	247	418	200	φ6.5	51	36	32	16
MK800-4T37G										17
MK800-4T45G-S										18
MK800-4T45G	510	340	280	495	270	φ8	64	45	39	29
MK800-4T55G										30
MK800-4T75G										31
MK800-4T90G	602	474	315	576	413	φ8	69.5	55	52	54
MK800-4T110G										55
MK800-4T132G										57
MK800-4T160G-S										59
MK800-4T160G	870	400	355	840	300	φ12	104	53	56	85
MK800-4T185G										88
MK800-4T200G										88
MK800-4T220G-S										90
MK800-4T220G	966	569	390	932	500	φ12	112	67	60	123
MK800-4T250G										123
MK800-4T280G										125
MK800-4T315G-S										130
MK800-4T315G	1160	720	380	1130	600	φ12	128	83	58	165
MK800-4T355G										167
MK800-4T400G										175
MK800-4T450G	1620	720	380	vertical			174	83	58	245
MK800-4T500G										250

3 Technical Data

3.1 Electrical Parameters

Description

The rated power of the frequency converter under the following conditions:

- For three-phase 380V~480V, the rated power of the frequency converter is measured at an input of 440VAC.
- For three-phase 200V~240V, the rated power of the frequency converter is measured at an input of 220VAC.
- For single-phase 200V~240V, the rated power of the frequency converter is measured at an input of 220VAC.

Frequency Converter Power	Electrical Parameters				
	Power Supply Capacity	Input Current	Output Current	Adapted Motor	
	KVA	A	A	KW	HP
Overload: G-type 150% for 1 minute, 180% for 2 seconds; P-type 120% for 1 minute, 150% for 2 seconds					
Single-phase Input: Rated 220V (allowable fluctuation range 208~240), 50/60HZ (±5%)					
MK800-2S0.4GB	1.0	5.1	**2.5**	0.4	0.5
MK800-2S0.75GB	1.5	8.2	**4**	0.75	1
MK800-2S1.5GB	3.0	14	**7.5**	1.5	2
MK800-2S2.2GB	4.0	23	**10**	2.2	3
MK800-2S4.0GB	7.5	38	**17**	4.0	5.0
MK800-2S5.5GB	11	55	**25**	5.5	7.5
MK800-2S7.5GB-S	13	61	**30**	7.5	10
MK800-2S7.5GB	15	64	**32**	7.5	10
MK800-2S11GB	25	80	**45**	11	15
MK800-2S15GB	30	105	**55**	15	20
Three-phase input: Rated 220V (allowable fluctuation range 208 - 240V), 50/60Hz (±5%)					
MK800-2T0.4GB	1.1	2.4	**2.1**	0.4	0.5
MK800-2T0.75GB	2.1	4.6	**3.8**	0.75	1
MK800-2T1.5GB	4.2	9.0	**7.5**	1.5	2
MK800-2T2.2GB	5.3	11.4	**10.0**	2.2	3
MK800-2T4.0GB	8.9	21.2	**17**	4.0	5.0
MK800-2T5.5GB	14.8	32.2	**25**	5.5	7.5
MK800-2T7.5PB	18.9	41.3	**32**	7.5	10
MK800-2T7.5GB	18.9	41.3	**32**	7.5	10
MK800-2T11GB	27.0	46.5	**45**	11	15
MK800-2T15GB	29.3	57.0	**57**	15	20
MK800-2T18.5G	31.6	69.0	**75**	18.5	25
MK800-2T22G	41.3	89.0	**90**	22	30
MK800-2T30G	48.5	106.0	**110**	30	40
MK800-2T37G	63.6	141.0	**152**	37	50
MK800-2T45G	75.0	164.0	**176**	45	60
MK800-2T55G	89.7	196.0	**210**	55	70
MK800-2T75G	110	240.0	**253**	75	100
MK800-2T90G	150	326	**350**	90	125
MK800-2T110G	188	410	**426**	110	150
MK800-2T132G	204	446	**470**	132	175

Frequency Converter Power	Electrical Parameters				
	Power Supply Capacity	Input Current	Output Current	Adapted Motor	
	KVA	A	A	KW	HP
Three-phase input: Rated 220V (allowable fluctuation range 208 - 240V), 50/60Hz (±5%)					
MK800-4T0.75GB	2.8	2.4	**2.1**	0.75	1
MK800-4T1.5GB	5	4.6	**3.8**	1.5	2
MK800-4T2.2GB	6.7	6.3	**5.1**	2.2	3
MK800-4T4.0GB	12	11.5	**9**	4	5
MK800-4T5.5GB-S	17.5	16.7	**13**	5.5	7.5
MK800-4T5.5GB	17.5	16.7	**13**	5.5	7.5
MK800-4T7.5GB	22.8	21.5	**17**	7.5	10
MK800-4T11GB	33.4	32.2	**25**	11	15
MK800-4T15GB-S	42.8	41.3	**32**	15	20
MK800-4T15GB	42.8	41.3	**32**	15	20
MK800-4T18.5GB	45	49.5	**37**	18.5	25
MK800-4T22GB	54	59	**45**	22	30
MK800-4T30GB-S	57	56	**57**	30	40
MK800-4T30G	61	57	**63**	30	40
MK800-4T37G	65	69	**75**	37	50
MK800-4T45G-S	81	88	**90**	45	60
MK800-4T45G	81	88	**90**	45	60
MK800-4T55G	97	105	**110**	55	70
MK800-4T75G	128	141	**152**	75	100
MK800-4T90G	150	164	**178**	90	125
MK800-4T110G	179	196	**210**	110	150
MK800-4T132G	220	240	**253**	132	175
MK800-4T160G-S	263	287	**304**	160	210
MK800-4T160G	263	287	**304**	160	210
MK800-4T185G	303	331	**350**	185	250
MK800-4T200G	337	368	**380**	200	260
MK800-4T220G-S	375	410	**426**	220	300
MK800-4T220G	375	410	**426**	220	300
MK800-4T250G	408	446	**470**	250	350
MK800-4T280G	453	495	**520**	280	370
MK800-4T315G-S	521	570	**590**	315	400
MK800-4T315G	521	570	**590**	315	400
MK800-4T355G	565	617	**650**	355	420
MK800-4T400G	629	687	**725**	400	530
MK800-4T450G	716	782	**820**	450	600
MK800-4T500G	760	830	**860**	500	660

3.2 Technical Specifications

Table 4-81 Frequency Converter Technical Specifications

Item		Technical Specifications
Basic Functions	Input Frequency Resolution	Digital setting: 0.01Hz Analog setting: Maximum frequency × 0.025%
	Control Methods	Open-loop vector control (SVC), closed-loop vector control (FVC), V/F control
	Starting Torque	0.25Hz/150%(SVC),0Hz/180%(FVC)
	Speed Regulation Range	1:200(SVC),1:1000(FVC)
	Speed Stability Accuracy	±0.5%(SVC) ±0.02%(FVC)
	Torque Control Accuracy	FVC:±3% S VC:5Hz 以上±5%
	Torque Boost	Automatic torque boost; manual torque boost 0.19%~30.0%.
	V/F Curve	Four types: linear, multi-point, complete V/F separation, incomplete V/F separation.
	Acceleration/Deceleration Curve	Linear or S-curve acceleration/deceleration; Four acceleration/deceleration time periods, range 0.0s~6500.0s.
	DC Braking	DC braking start frequency: 0.00Hz~maximum frequency; Braking time: 0.0s~36.0s; Braking action current value: 0.0%~100.0%.
	Jog Control	Jog frequency range: 0.00Hz~50.00Hz; Jog acceleration/deceleration time 0.0s~6500.0s.
	Simple PLC, Multi-Speed Operation	Achieve up to 16-speed operation through built-in PLC or control terminals.
	Built-in PID	Facilitates implementation of process control closed-loop control systems.
	Automatic Voltage Regulation (AVR)	Maintains constant output voltage in response to grid voltage fluctuations.
	Overvoltage/Overcurrent Stall Control	Automatically limits current and voltage during operation to prevent frequent overcurrent and overvoltage tripping.
	Rapid Current Limit	Minimizes overcurrent faults to protect the normal operation of the frequency converter.
	Torque Limit and Control	Excavator characteristics, automatically limits torque during operation to prevent frequent overcurrent tripping; vector control mode enables torque control.
Custom Functions	Momentary Stop Non-Stop	Compensates for voltage drop during momentary power outages using load feedback energy, maintaining operation of the frequency converter for a short time.
	Rapid Current Limit	Avoids frequent overcurrent faults in the frequency converter.
	Virtual I0	Five groups of virtual DIDO, enabling simple logic control.
	Timer Control	Timer control function: Set time range 0.0Min~6500.0Min.
	Multi-Motor Switching	Two sets of motor parameters, allowing control switching between two motors.
	Multi-Thread Bus Support	Supports Modbus-RTU.
	Multi-Encoder Support	Supports differential, open-collector
	Powerful Backend Software	Supports frequency converter parameter operations and virtual oscilloscope functions; The virtual oscilloscope enables monitoring of the internal state of the frequency converter.

Item		Technical Specifications
Operation	Operation Command	Operation Panel Setting, Control Terminal Setting, Serial Communication Port Setting. Can switch between multiple modes
	Frequency Command	10 types of frequency commands: Digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. Can switch between multiple modes
	Auxiliary Frequency Command	10 types of auxiliary frequency commands. Flexible implementation of auxiliary frequency fine-tuning, frequency synthesis
	Input Terminals	Standard: 6 X terminals, one of which supports high-speed pulse input up to 100kHz 2 AI terminals, one supports only 0V~10V voltage input, and the other supports 0V~10V voltage input or 0mA~20mA current input
	Output Terminals	Standard 1 high-speed pulse output terminal (optional open-collector type) Supports square wave signal output from 0kHz~100kHz 1 Y terminal 2 relay output terminals 2 AO terminals, supporting 0mA~20mA current output or 0V~10V voltage output
Display and Keyboard Operation	LED Display	Displays parameters
	LCD Display	Optional, with Chinese/English prompts for operation content
	Parameter Copying	Parameters can be quickly copied via the optional LCD operation panel
	Key Lock and Function Selection	Enables partial or complete locking of keys, defines the scope of certain keys to prevent accidental operation
Protection Functions	Phase Loss Protection	Input phase loss protection, output phase loss protection
	Instantaneous Overcurrent Protection	Stops operation at over 250% of the rated output current
	Overvoltage Protection	The main circuit DC voltage above 820V triggers shutdown.
	Undervoltage Protection	The main circuit DC voltage below 350V triggers shutdown.
	Overheat Protection	Protection is triggered when the inverter bridge overheats.
	Overload Protection	Shutdown occurs after operating at 150% of the rated current for 60 seconds.
	Overcurrent Protection	Shutdown protection when exceeding 2.5 times the rated current of the frequency converter.
	Braking Protection	Overload protection for the braking unit, short circuit protection for the braking resistor.
	Short Circuit Protection	Inter-phase short circuit protection for the output, ground short circuit protection for the output.
Environment	Operating Conditions	Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, steam, dripping water, or salt.
	Altitude	For use below 1000m without derating; above 1000m, derate by 1% for every additional 100m of elevation, with a maximum operating altitude of 3000m. Contact the manufacturer for use above 3000m. (Note: For frequency converters from 0.4kW to 3kW, the maximum operating altitude is 2000m. Contact the manufacturer for use above 2000m.)
	Ambient Temperature	-10°C~+50°C, with derating required between 40°C and 50°C, derating by 1.5% for each 1°C increase in temperature.
	Humidity	Less than 95% RH, no condensation.
	Vibration	Less than 5.9m/s2 (0.6g)
	Storage Temperature	-20°C~+60°C

4 Installation and Wiring

4.1 Mechanical Installation

4.1.1 Installation Site Inspection

4.1.1.1 Installation Environment

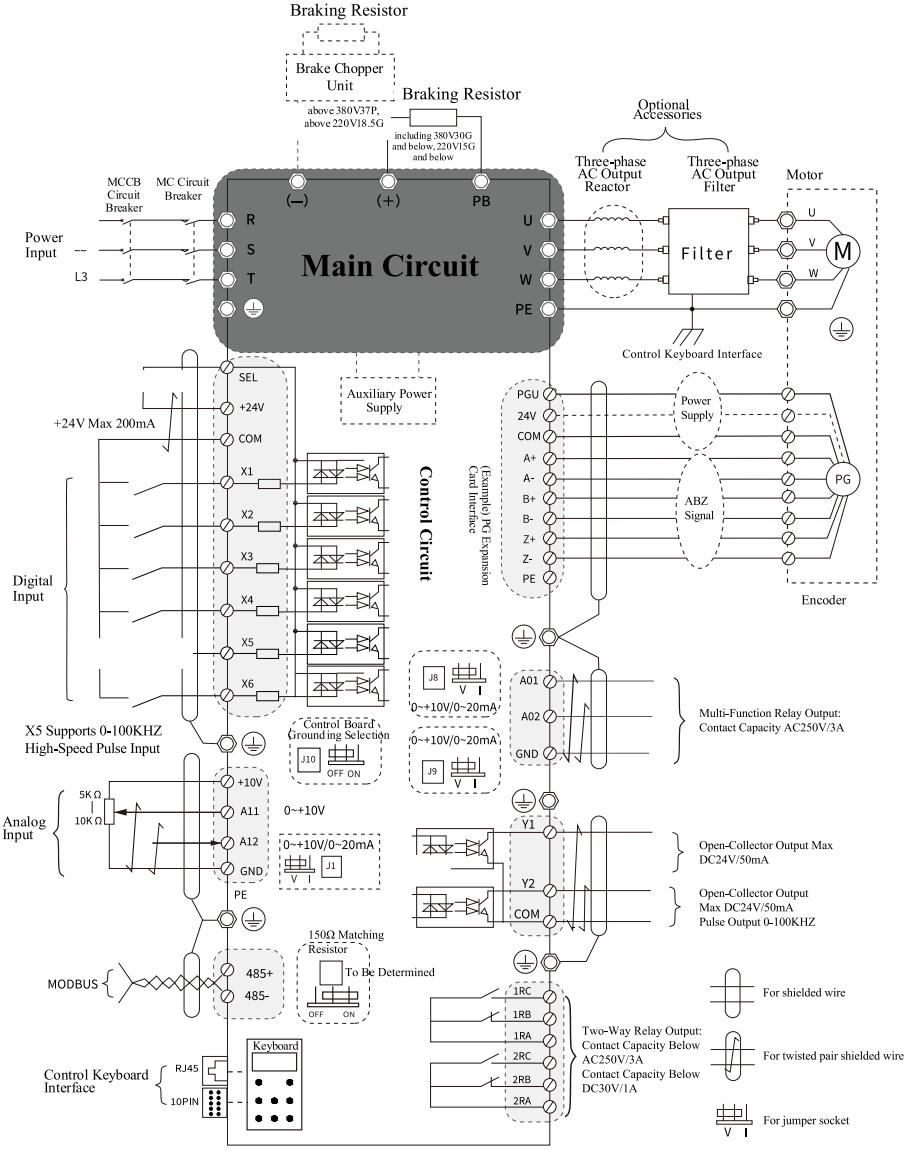
To fully utilize this product's performance and ensure long-term use, install the product in the following environment.

Table 4-1 Environmental Requirements

Environment	Conditions
Installation Site	Indoors
Grid Overvoltage	Overvoltage Level III (OVCIII)
Temperature	● Installation/Operating Temperature: -10°C~+50°C (-10°°C~+40°C without derating, derate when temperature exceeds 40°C, derating by 1.5% for each 1°C increase). Storage/Transportation Temperature: -20°C~+60°C. ● For improved equipment reliability, use the product where temperature changes are not abrupt. ● When used in enclosed spaces like control cabinets, use cooling fans or air conditioning for cooling to keep the inlet temperature of the device below 50°C. Otherwise, it may lead to overheating or fire. ● Install the product on the surface of a flame-retardant object, ensuring sufficient space around it for heat dissipation. ● Avoid freezing the product.
Humidity	Below 95% RH, no condensation.
Environment	Pollution Degree 2 or lower. Please install the product in the following locations: ● Places not exposed to direct sunlight, free from dust, corrosive gases, flammable or explosive gases, oil mist, steam, dripping water, or salt. ● Install in places with minimal vibration (especially away from equipment like punch presses), ● Prevent metal powder, oil, water, or other foreign substances from entering the product's interior. ● Locations free from radioactive substances, flammables, harmful gases and liquids, and minimal salt corrosion. ● Do not install the product on inflammable materials like wood.
Altitude	● No derating required for use below 1000m. ● Derate by 1% for every 100m increase above 1000m. The maximum altitude for 0.4kW~3kW is 2000m, contact the manufacturer for altitudes above 2000m; for over 3kW, the maximum altitude is 3000m, contact the manufacturer for altitudes above 3000m.
Vibration Resistance	● During transportation in packaging: Complies with EN60721-3-2 standard, class 2M3. ● When unpackaged and in the installed state: Complies with ISTA1H standard.

4.2 Electrical Installation

4.2.1 MK800 Electrical Wiring Diagram



4.2.2 Main Circuit Terminal Description

MK800-2S0.4GB ~ MK800-2S7.5PB; MK800-2T0.4GB ~ MK800-2T7.5PB;
MK800-4T0.75GB ~ MK800-4T15GB-S.
The meanings of each terminal are shown in the following figure:

PE	R/L	S	T/N	P+	PB	(—)	U	V	W

MK800-2S7.5GB~MK800-2S15GB;MK800-2T7.5GB~MK800-2T15GB;
MK800-4T15GB~MK800-4T30GB-S The meanings of each terminal are shown in the following figure:

PE	R/L	S	T/N	P+	PB	(—)	U	V	W

Terminal Marking	Terminal Name	Function Description
R/L、S、T/N	Three-Phase Power Input Terminals	AC input three-phase power connection points
(P+) 、 (-)	Positive and negative terminals of the DC bus	Common DC bus input point, Connection point for the external braking unit
(+) 、PB	Braking resistor connection terminals	Braking resistor connection points
U、V、W	Output terminals	Connect to three - phase motors
PE	Ground Terminal (PE)	Protective grounding

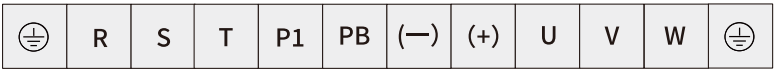
MK800-2T18.5G;
MK800-4T30G~MK800-4T37G The meanings of each terminal are shown in the following figure:

⏚	R	S	T	P1	(+)	PB	(—)	U	V	W	⏚

Terminal Marking	Terminal Name	Function Description
R 、S、T	Three-Phase Power Input Terminals	AC input three-phase power connection points
(+) 、 (-)	Positive and negative terminals of the DC bus	Common DC bus input point, Connection point for the external braking unit
P1、(+)	DC reactor connection terminals	Be short - circuited with copper sheets at the factory
(+) 、PB	Braking resistor connection terminals	Braking resistor connection points
U、V、W	Output terminals	Connect to three - phase electric motors
⏚	Grounding Terminal (PE)	Protective Earthing

MK800-2T22G;MK800-4T45G-S

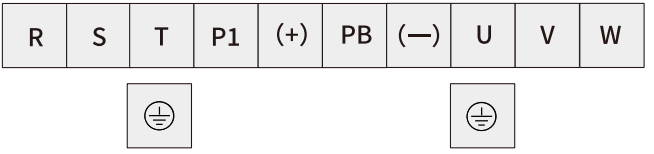
The meanings of each terminal are shown in the following figure:



Terminal Marking	Terminal Name	Function Description
R 、S、T	Three-Phase Power Input Terminals	AC input three-phase power connection points
(+) 、 (-)	Positive and negative terminals of the DC bus	Common DC bus input point, Connection point for the external braking unit
(+) 、PB	Braking resistor connection terminals	Braking resistor connection points
U, V, W	Output Terminals	Connection to three-phase motors
⏚	Grounding terminal (PE)	Protective grounding

MK800-2T30G~MK800-2T37G;MK800-4T45G~MK800-4T75G

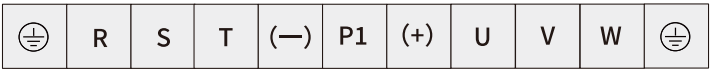
The meanings of each terminal are shown in the following figure:



Terminal Marking	Terminal Name	Function Description
R、S、T	Three - phase power input terminals	Connection points for three - phase AC input power supply
(+) 、 (-)	DC bus positive and negative terminals	ommon DC bus input point, Connection point for external braking unit
P1、(+)	DC reactor connection terminals	Be short-circuited with copper sheets at the factory
(+) 、PB	Braking resistor connection terminals	Braking resistor connection points
U、V、W	Output terminal	Connect a three - phase motor
⏚	Grounding terminal (PE)	Protective grounding

MK800-2T45G~MK800-2T75G;

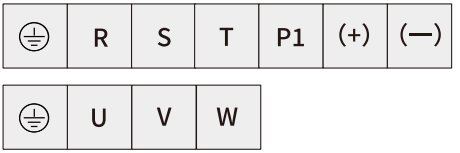
MK800-4T90G~MK800-4T160G-S The meanings of each terminal are shown in the following figure:



Terminal Marking	Terminal Name	Function Description
R、S、T	Three - phase power input terminals	Connection points for three - phase AC input power supply
(+) 、 (-)	DC bus positive and negative terminals	ommon DC bus input point, Connection point for external braking unit
P1、(+)	DC reactor connection terminals	Be short-circuited with copper sheets at the factory
U、V、W	Output terminal	Connect a three - phase motor
⏚	Grounding terminal (PE)	Protective grounding

MK800-2T90G~MK800-2T110G;MK800-4T160G~MK800-4T220G-S

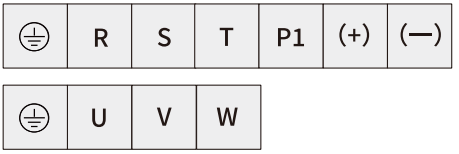
The meanings of each terminal are shown in the following figure:



Terminal Marking	Terminal Name	Function Description
R、S、T	Three - phase power input terminals	Connection points for three - phase AC input power supply
(+) 、 (-)	DC bus positive and negative terminals	ommon DC bus input point, Connection point for external braking unit
P1、(+)	DC reactor connection terminals	Be short-circuited with copper sheets at the factory
U、V、W	Output terminal	Connect a three - phase motor
⏚	Grounding terminal (PE)	Protective grounding

MK800-2T132G;MK800-4T220G~MK800-4T315G-S

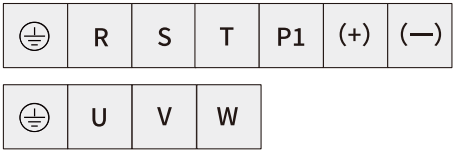
The meanings of each terminal are shown in the following figure:



Terminal Marking	Terminal Name	Function Description
R、S、T	Three - phase power input terminals	Connection points for three - phase AC input power supply
(+) 、 (-)	DC bus positive and negative terminals	ommon DC bus input point, Connection point for external braking unit
P1、(+)	DC reactor connection terminals	Be short-circuited with copper sheets at the factory
U、V、W	Output terminal	Connect a three - phase motor
⏚	Grounding terminal (PE)	Protective grounding

MK800-4T315G~MK800-4T500G

The meanings of each terminal are shown in the following figure:



Terminal Marking	Terminal Name	Function Description
R、S、T	Three - phase power input terminals	Connection points for three - phase AC input power supply
(+) 、 (-)	DC bus positive and negative terminals	ommon DC bus input point, Connection point for external braking unit
P1、(+)	DC reactor connection terminals	Be short-circuited with copper sheets at the factory
U、V、W	Output terminal	Connect a three - phase motor
⏚	Grounding terminal (PE)	Protective grounding

4.2.3 Instructions for Control Circuit Terminals

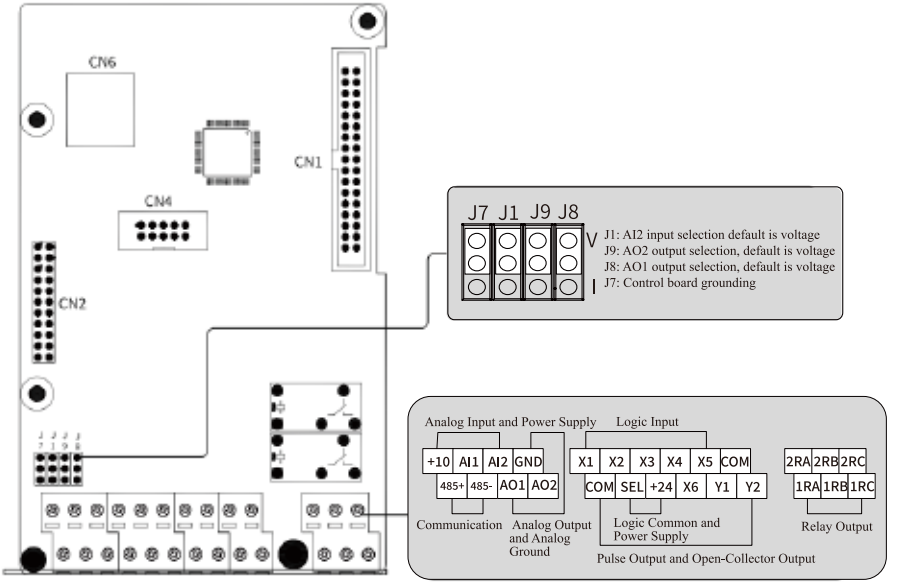


Figure 4 - 1 Distribution Diagram of Control Circuit Terminals

Table 4-2 Functional Description of Inverter Control Terminals

Category	Terminal Symbol	Terminal Name	Function Description
Power Supply	+10V-GND	External +10V Power Supply	Provides an external +10V power supply, maximum output current: 10mA. Generally used as a working power supply for external potentiometers, with potentiometer resistance range: 1kΩ~10kΩ
	+24V-COM	External +24V Power Supply	Provides an external +24V power supply, generally used as a working power supply for digital input/output terminals and external sensors. Maximum output current: 200mA【Note 1】
	SEL	External Power Input Terminal	Factory default connected to +24V. When driving X1~X6 with an external signal, SEL should be connected to an external power supply and disconnected from the +24V power terminal.
Analog Input	AI1-GND	Analog input terminal 1	Input voltage range: DC 0V - 10V Input impedance: 22kΩ
	AI2-GND	Analog input terminal 2	Input range: 0Vdc - 10Vdc / 0mA - 20mA, which is determined by the J1 jumper on the control board.
Digital Input	X1-SEL	Digital input 1	Optical coupler isolation. By default, it is unipolar NPN input at the factory. If bipolar input is required, it should be noted when placing an order. Input impedance: 1.39kΩ Voltage range for valid level input: 9V - 30V
	X2-SEL	Digital input 2	
	X3-SEL	Digital input 3	
	X4-SEL	Digital input 4	
	X5-SEL	Digital input 5	
	X6-SEL	High - speed Pulse Input Terminal	In addition to the characteristics of X1 - X5, it can also be used as a high - speed pulse input channel. Maximum input frequency: 100kHz Input impedance: 1.03kΩ
Analog output	AO1-GND	Analog output 1	The voltage or current output is determined by the J8 jumper on the control board. Output voltage range: 0V - 10V Output current range: 0mA - 20mA
	AO2-GND	Analog output 2	The voltage or current output is determined by the J9 jumper on the control board. Output voltage range: 0V - 10V Output current range: 0mA - 20mA
Digital output	Y1-COM	Digital output 1	Optical - coupler isolated, bipolar open - collector output. Output voltage range: 0V - 24V Output current range: 0mA - 50mA
	Y2-COM	High - speed pulse output	It is restricted by the parameter P5-00 "Y2 Terminal Output Mode Selection". When used as a high - speed pulse output, the maximum frequency can reach 100kHz. When used as an open - collector output, it has the same specifications as Y1.

Category	Terminal Symbol	Terminal Name	Function Description
Relay output	1RA-1RB	Normally - closed terminal	Contact driving capacity: 250Vac, 3A, COS Φ = 0.4 30Vdc, 1A
	2RA-2RB		
	1RA-1RC	Normally-open terminal	
	2RA-2RC		
Auxiliary interface	CN2	Functional expansion card interface	22 - pin terminal, serving as the interface for encoder expansion card and communication isolation card.
	CN6、CN4	External keyboard interface	External keyboard
Jumper	J8	AO1 Output Selection	Both voltage and current outputs are selectable, with voltage output being the default.
	J9	AO2 Output Selection	
	J1	AI2 input selection	Both voltage and current inputs are selectable, with voltage input being the default.
Communication	485+	RS485 differential signal positive terminal	Standard RS485 communication interface
	485-	RS485 differential signal negative terminal	

Instructions

- When the ambient temperature exceeds 23°C, derating is required. For every 1°C increase in ambient temperature, the output current decreases by 1.8mA. At an ambient temperature of 40°C, the maximum output current is 170mA. When the user short - circuits SEL to 24V, the current at the X terminal must also be taken into account.

5 Debugging and Trial Run

5.1 Instructions for the LED operation panel

5.1.1 Description of the operation panel

Component description

The LED operation panel can display the operating status, perform parameter settings, and show fault information, etc. The operation panel is shown as follows.

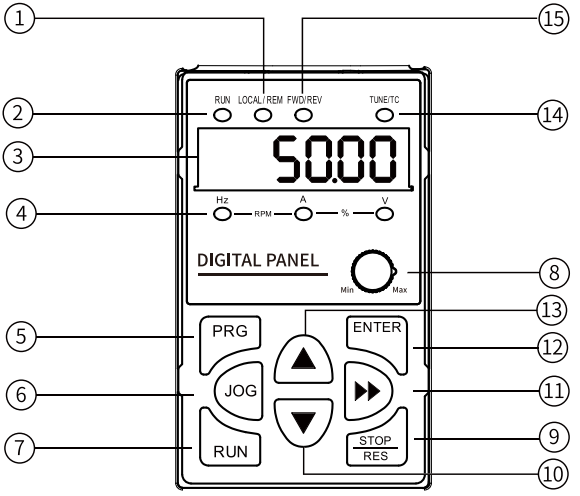


Figure 5 - 1 Schematic Diagram of Components

Table 5 - 1 Description of the Composition of the Operation Panel

Serial Number	Component Name	Serial Number	Component Name
1	Command Source Indicator Light	9	Stop/Reset key
2	Operation Indicator Light	10	Decrease Button
3	Data display area	11	Shift key
4	Unit indicator light	12	Confirm key
5	Programming key	13	Increment key
6	Multi - function selection key	14	Tuning/Torque Control/Fault Indicator Lamp
7	Run key	15	Forward/Reverse Indicator Light
8	Speed - regulating potentiometer	—	—

Button Information

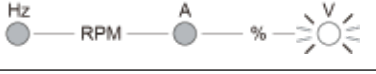
Table 5-2 Button Description

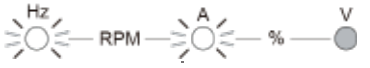
Button	Name	Function
	Programming Button	Return to the previous screen; Enter the primary menu.
	Confirm Button	Proceed to the next screen; Confirm modes, parameters, set values.
	Increase Button	Change (increase) parameter numbers and set values.
	Decrease Button	Change (decrease) parameter numbers and set values.
	Shift Button	Left shift to cycle through display parameters; When setting parameter numbers/values, the digit to be changed shifts left.
	Run Button	In "Operation Panel" start-stop control mode, used for running operations.
	Stop Command/Fault Reset	During running state, used for stop operation; in fault alarm state, used for reset operation.
	Multi-function Select Button	Switch between functions selected based on the value set in P7-01.

Status Indicator

In the table below,  indicates the light is on, indicates the light is off, and  indicates flashing.

Table 5-3 Panel Indicator Light Explanation

Indicator Light Status		Status Explanation
RUN Running Indicator		Light Off: Stopped
		Light On: Running
LOC/REM Command Source Indicator Light		Light Off: Panel Control
		Light On: Terminal Control
		Flashing: Communication Control
FWD/REV Forward/Reverse Indicator Light		Light Off: Forward Running
		Light On: Reverse Running
TUNE/TC Tuning/Torque Control/Fault Indicator Light		Light Off: Normal Operation
		Light On: Torque Control Mode
		Slow Flashing: Tuning State (1 time/second)
		Fast Flashing: Fault State (4 times/second)
		Frequency Unit Hz
		Current Unit A
		Voltage Unit V

Indicator Light Status	Status Explanation
	Speed Unit RPM
	Percentage %

Data Display

The operation panel has 5 LED data displays, which can show set frequency, output frequency, various monitoring data, and alarm codes, etc.

Table 5-4 LED Data Display and Actual Data Correspondence

LED Display	Actual Correspondence	LED Display	Actual Correspondence	LED Display	Actual Correspondence	LED Display	Actual Correspondence
0	0	6	6	C	C	N	N
1	1	7	7	c	c	P	P
2	2	8	8	d	D	r	R
3	3	9	9	E	E	T	T
4	4	A	A	F	F	u	u
5	5	b	B	L	L	U	U

5.1.2 Related Parameters

Table 5-5 Parameter Instructions for the Operation Panel

parameters	Parameter Name	Default Value	Setting Range	Parameter Description
P7-01	JOG Key Function Selection	0	0: JOG key is invalid 1: Switch between the operation panel command channel and the remote command channel (terminal command channel or communication command channel) 2: Forward/Reverse switching 3: Forward jogging 4: Reverse jogging	The JOG key on the operation panel is a multi - function key, and the function of the JOG key can be set through this parameter. 0: JOG is invalid This key has no function. 1: Switch between the operation panel command channel and the remote command channel (terminal command channel or communication command channel) When P0 - 02 is set to 0 (operation panel), pressing the JOG key has no effect. When P0 - 02 is set to 1 (terminal), the JOG key can be used to switch between the terminal and the operation panel. When P0 - 02 is set to 2 (communication), the JOG key can be used to switch between the communication and the operation panel. 2: Forward/Reverse switching The JOG key is used to switch the direction of the frequency command. This function is only valid when the running command of the command source is from the operation panel. 3: Forward jogging The JOG key is used to achieve forward jogging (FJOG). This function is only valid when the running command of the command source is from the operation panel. 4: Reverse jogging The JOG key is used to achieve reverse jogging (RJOG). This function is only valid when the running command of the command source is from the operation panel.
P7-02	Function of STOP/RESET Key	0	0: The stop function of the STOP/RESET key is only effective in the keyboard operation mode. 1: The stop function of the STOP/RESET key is effective in any operation mode.	The STOP/RESET key on the operation panel serves as a stop and reset key. The function of the STOP/RESET key can be set through this parameter. 0: The stop function of the STOP/RESET key is only effective in the keyboard operation mode. Only in the keyboard operation mode, the stop and reset function of the STOP/RESET key is effective. 1: The stop function of the STOP/RESET key is effective in any operation mode. In any operation mode, the stop and reset function of the STOP/RESET key is effective.
P7-03	LED Operating Display Parameter 1	0x1F	BIT00: Operating frequency (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 BIT08: DO output status BIT09: AI1 voltage (V) BIT10: AI2 voltage (V) BIT11: Reserved BIT12: Count value BIT13: Length value BIT14: Load speed display BIT15: PID setting	During operation, pressing the  on the LED operation panel allows you to view 16 status values of the frequency converter in real - time. If the value of the BIT bit is 1, it means the corresponding status is displayed; if the value of the BIT bit is 0, it means the corresponding status is not displayed. The numerical value obtained by converting the binary number to hexadecimal is used as the value of P7 - 03.

parameters	Parameter Name	Default Value	Setting Range	Parameter Description
P7-04	2LED Operating Display Parameter 2	0	BIT00: PID feedback BIT01: PLC stage BIT02: PULSE input pulse frequency (kHz) BIT03: Operating frequency 2 (Hz) BIT04: Remaining running time BIT05: Voltage of AI1 before calibration (V) BIT06: Voltage of AI2 before calibration (V) BIT07: Reserved BIT08: Linear velocity BIT09: Current power - on time (h) BIT10: Current running time (min) BIT11: PULSE input pulse frequency (Hz) BIT12: Communication set value BIT13: Encoder feedback speed (Hz) BIT14: Roll diameter (mm) BIT15: Tapered tension (N)	During the operating state, pressing the on the LED operation panel enables real - time viewing of 16 status values of the frequency converter. If the value of the BIT bit is 1, it indicates display; if the value of the BIT bit is 0, it indicates non - display. The value obtained by converting the binary number to hexadecimal is used as the value of P7 - 04.
P7-05	Shutdown Display Parameter	0x33	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: Reserved BIT07: Count value BIT08: Length value BIT09: PLC stage BIT10: Load speed display BIT11: PID setting BIT12: PULSE input pulse frequency (kHz) BIT13: Roll diameter (mm) BIT14: Tension (N)	When the equipment is stopped, if you need to display the following parameters, set the corresponding bit positions to 1. After converting this binary number to hexadecimal, set it in P7 - 05. When in the stopped state, pressing the on the LED operation panel allows you to view 13 status values of the frequency converter in real - time. If the value of the BIT bit is 1, it indicates display; if the value of the BIT bit is 0, it indicates non - display. The value obtained by converting the binary number to hexadecimal is used as the value of P7 - 05.

parameters	Parameter Name	Default Value	Setting Range	Parameter Description
PP-01	Parameter initialization	111	0: No operation 1: Restore factory parameters mode 1 2: Clear recorded information 3: Restore factory parameters mode 2	Set the corresponding actions when initializing the parameters of the frequency converter. 0: No operation The frequency converter does not perform any operation. 1: Restore factory parameters mode 1 Most of the functional parameters of the frequency converter are restored to the manufacturer's factory parameters, but the motor parameters, the decimal point of the frequency command (P0 - 22), the fault record information, the cumulative running time (P7 - 09), the cumulative power - on time (P7 - 13), the cumulative power consumption (P7 - 14), and the temperature of the inverter module heat sink (P7 - 07) are not restored. 2: Clear recorded information Clear the fault record information of the frequency converter, the cumulative running time (P7 - 09), the cumulative power - on time (P7 - 13), and the cumulative power consumption (P7 - 14). 3: Restore factory parameters mode 2 Except that the manufacturer's parameter groups PF, PP - 00, and PP - 01 are not restored, other functional parameters of the frequency converter are restored to the manufacturer's factory parameters.
PP-02	Function Parameter Group Display Selection	111	Units digit -: U group display selection 0: Hide 1: Display Tens digit -: A group display selection 0: Hide 1: Display	Set whether the U group, A group, and parameters are displayed on the operation panel.
PP-03	User Parameter Group Display Selection	11	Units digit -: Display selection for user - customized parameter group 0: Do not display 1: Display Tens digit -: Selection for user - changed parameter group 0: Do not display 1: Display	Set whether the user - customized parameter group and the user - changed parameter group are displayed on the operation panel through the units digit or the tens digit respectively.

5.1.3 Parameter Setting

he operation panel uses a three - level menu structure for operations such as parameter setting. After entering each level of the menu, when the display digit is flashing,

you can use the key key key to make settings. The three - level menu is as follows:

- First - level menu: Parameter group
- Second - level menu: Parameter
- Third - level menu: Parameter setting value

Example: Change the parameter P3 - 02 from 10.00Hz to 15.00Hz.

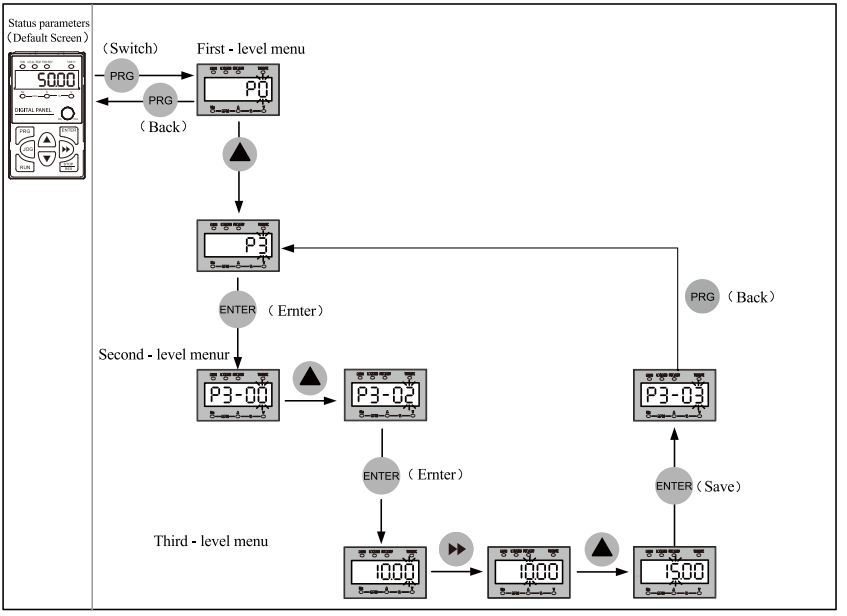


Figure 5-2 Schematic Diagram of Parameter Modification Operation

When operating in the third - level menu, you can press the PRG key or ENTER key to return to the second - level menu. The difference between the two is:

1. Press the ENTER to save the set parameters, return to the second - level menu, and automatically move to the next parameter.

2. Press the PRG to abandon the current parameter modification and directly return to the upper - level menu corresponding to the current parameter.

In the third - level menu state, if there is no flashing digit in the parameter setting value, it indicates that the parameter value cannot be set. The possible reasons are:

1. This parameter is an unchangeable parameter, such as product type, actual detection parameters, operation record parameters, etc.

2. This parameter cannot be changed during the operating state and can only be changed after the machine is stopped

5.1.4 Parameter Viewing

Set PP - 02 = 11 and PP - 03 = 11, then you can view all parameters through the keyboard. The operation process is shown in the following figure.

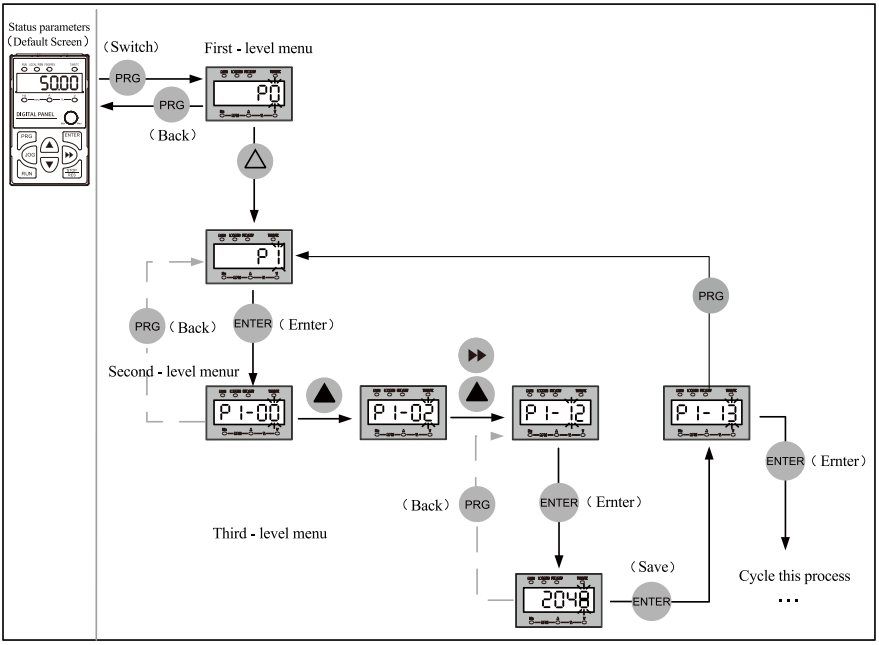


Figure 5 - 3 Schematic Diagram of Parameter Viewing Operation

5.1.5 Display of Status Parameters

In the operating state, press to view the status parameters. The default displayed status parameters include: operating frequency, set frequency, bus voltage, output voltage, and output current. If you want to view more status parameters, please refer to the relevant instructions for P7 - 03 and P7 - 04 in "Related Parameters".

In the stopped state, press to view the status parameters. The default status parameters displayed are: set frequency, bus voltage, AI1 voltage, and AI2 voltage. If you want to view more status parameters, please refer to the relevant description of P7 - 05 in "Related Parameters".

5.1.6 JOG Multifunctional Key Operation

The JOG key on the operation panel is a multifunctional key, and the function of the multifunctional key can be set through parameter P7 - 01. In the stopped or operating state, press this key to switch the command channel, perform forward and reverse rotation, and jogging.

Table 5 - 6 Parameter Description of the Multifunctional Key

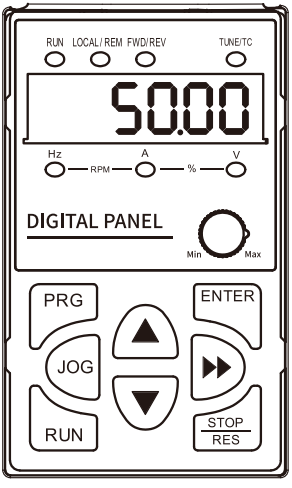
Parameter	Parameter Name	Default Value	Setting Range	Parameter Description
P7-01	JOG Key Function Selection	0	0: JOG key is invalid 1: Switch between the operation panel command channel and the remote command channel (terminal command channel or communication command channel) 2:Forward/Reverse rotation switch 3: Forward jogging 4: Reverse jogging	The JOG key on the operation panel is a multi - functional key, and the function of the JOG key is set through this parameter. 0: JOG is invalid This key has no function. 1: Switch between the operation panel command channel and the remote command channel (terminal command channel or communication command channel) When P0 - 02 is set to 0 (operation panel), pressing the JOG key has no effect; when P0 - 02 is set to 1 (terminal), the JOG key can be used to switch between the terminal and the operation panel; when P0 - 02 is set to 2 (communication), the JOG key can be used to switch between the communication and the operation panel. 2: Forward/Reverse rotation switch The JOG key is used to switch the direction of the frequency command. This function is only valid when the command source operation instruction is from the operation panel. 3: Forward jogging The JOG key is used to achieve forward jogging (FJOG). This function is only valid when the command source operation instruction is from the operation panel. 4: Reverse jogging The JOG key is used to achieve reverse jogging (RJOG). This function is only valid when the command source operation instruction is from the operation panel.

5.1.7 Demonstration of Driving the Motor via the Operation Panel

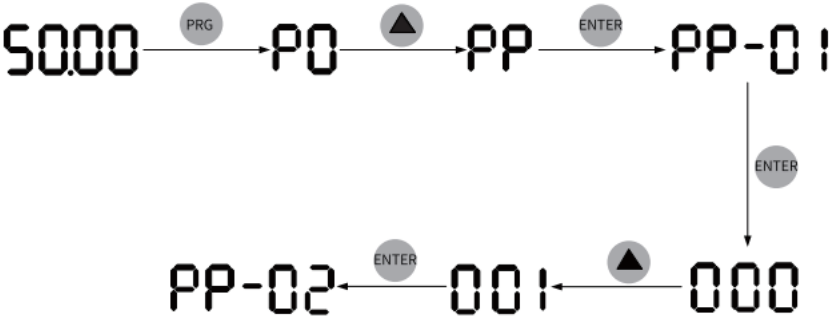
Press the JOG key on the operation panel to conduct forward jogging and reverse jogging operation control of the motor. Press the RUN , STOP RES key to perform start - stop operation control of the motor.

Operation steps

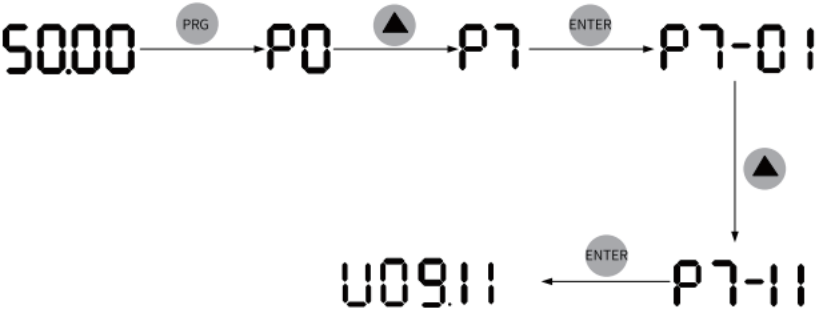
1. Check before power - on.
   Conduct installation and wiring inspections in accordance with the installation manual. For a detailed check, please refer to the introduction of the pre - power - on inspection in the "Installation Guide".
2. Press the power switch to turn on the power supply of the frequency converter.
3. Check the display on the operation panel. If it shows 50.00, it indicates that the power - on is successful.



4. Set PP - 01 = 001 to restore all parameters to their factory default values. An operation example is shown in the figure below.



5. Check the value of P7 - 11. The displayed value represents the software version number.



6. Set the motor parameters in Group P1 according to the data on the motor nameplate.

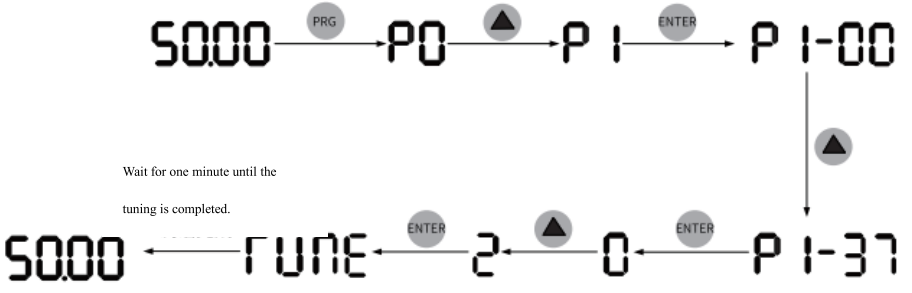
Table 5 - 7 Explanation of Motor Parameters

Parameter	Parameter Name	Default Value	Setting Range	Parameter Description	Set value
P1-00	Motor type selection	0	0: Normal asynchronous motor 1:Variable - frequency asynchronous motor 2:Synchronous motor	The characteristic of a variable - frequency motor is that it can adjust the frequency according to the load, thus changing the rotational speed. In areas with low voltage, a variable - frequency motor can reduce the frequency to start reliably. In areas with light load, the variable - frequency motor can lower the frequency, reducing the rotational speed and current, and saving electrical energy. Normal asynchronous motors are suitable for places with normal voltage but often under full - load conditions. Since they are designed for constant frequency and constant voltage, they cannot fully meet the requirements of variable - frequency speed regulation.	0
P1-01	Motor rated power	Determination of the machine model	0.1kW~ 1000.0kW	The rated power of the motor refers to the power output at the shaft end when the motor operates under rated conditions. When selecting the motor power, it should be chosen economically and rationally on the premise that the motor can meet the requirements of the mechanical load. Factors such as motor heating, overload capacity, and starting ability should be taken into account.	22.0

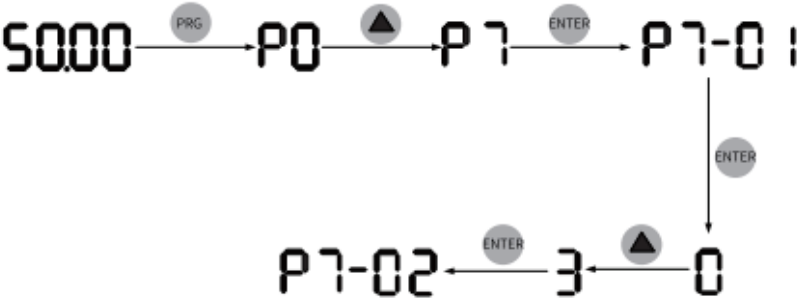
Parameter	Parameter Name	Default Value	Setting Range	Parameter Description	Set value
P1-02	Motor rated voltage	Determination of the machine model	1V~2000V	The rated voltage of the motor refers to the voltage at which the motor operates normally, generally referring to the line voltage.	0380
P1-03	Motor rated current	Determination of the machine model	0.1A~6553.5A	The rated current of the motor refers to the current when the motor is operating normally, usually referring to the line current.	45.0
P1-04	Motor rated frequency	Determination of the machine model	0.01Hz~600.00Hz	The rated frequency of the motor refers to the frequency of the power supply connected to the stator winding when the motor is in the rated operating state.	50.00
P1-05	Motor rated speed	Determination of the machine model	1rpm~65535rpm	The rated speed of the motor refers to the rotational speed of the rotor when the motor is in the rated operating state, with the unit of "revolutions per minute" (rpm).	1460

7. Set P1 - 37= 2, then press the ENTER key to confirm. When the keyboard shows 

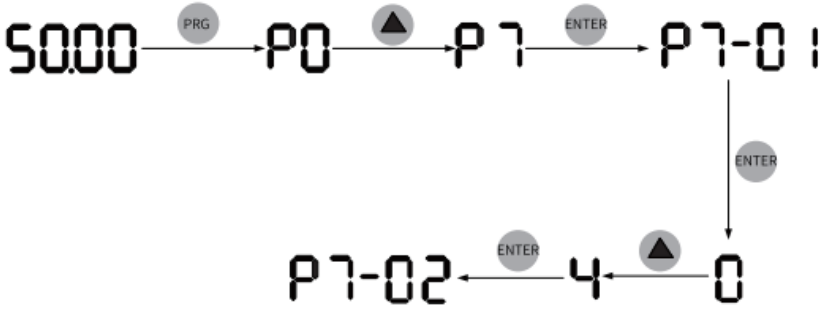
, press the RUN key on the operation panel for more than 3 seconds to start the motor tuning process. During this period, the RUN indicator light stays on constantly, while the TUNE/TC indicator light flashes. The frequency converter supplies power to the motor. After approximately one minute, if the panel displays 50.00, it indicates that the tuning has been completed.



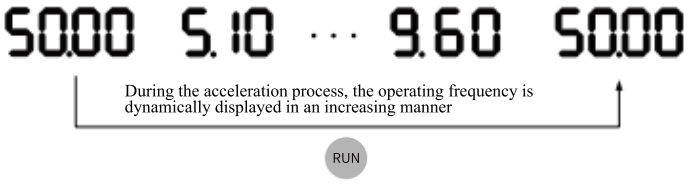
8. Set P7 - 01 = 3. After the setting is completed, press the JOG key, and the motor will jog in the forward direction.



9. Set P7 - 01 = 4. After the setting is completed, press the JOG key, The motor jogs in reverse.



10.Press the JOG key to start the motor. The motor shaft begins to accelerate and rotate. At the same time, the panel displays the current operating frequency, as shown in the figure below. After the acceleration is complete, the frequency value displayed is 50.00. Press ▶▶ to switch the displayed operating status parameters.



11.Press the STOP RES stop button, and the motor will decelerate and then stop.

5.2 Motor configuration

5.2.1 Motor tuning

Motor tuning is a process in which the frequency converter obtains the parameters of the controlled motor.

There are three methods for motor tuning. Refer to the table below (set through parameter P1 - 37).

Table 5 - 8 Parameter Description of P1 - 37 Tuning Selection (Default value is 0)

Setting range	Parameter description
0: No operation	No tuning
11: Synchronous machine static part tuning (without tuning the back electromotive force)	SVC: Only tune some motor parameters, such as stator resistance, DQ - axis inductance. The motor does not rotate during the identification process. FVC: Only tune some motor parameters, including stator resistance, DQ - axis inductance, and the encoder zero - point position angle. When a resolver or a 23 - bit encoder is selected, the motor does not rotate during the identification process. When an ABZ encoder is selected, the motor will rotate briefly during the identification process.
12: Synchronous machine no - load dynamic complete tuning	During the tuning process, the motor must be under no - load condition. SVC: Tune all motor parameters, including stator resistance, DQ - axis inductance, and back - electromotive force. The motor rotates during the identification process. FVC: Tune all motor parameters, such as stator resistance, DQ - axis inductance, back - electromotive force, encoder zero - point position angle, and encoder phase sequence. The motor rotates during the identification process.

Table 5 - 9 Motor Tuning Methods

Tuning method	Applicable situations	Tuning effect
Synchronous machine static part tuning	Situations where it is difficult to separate the motor from the load and dynamic tuning operation is not permitted. After the identification is completed, the back - electromotive force (for SVC) and the encoder phase sequence need to be set manually.	Relatively good
Synchronous machine no - load dynamic complete tuning	Occasions where the motor can be easily separated from the application system.	Optimal
Manually input parameters	Situations where it is difficult to disconnect the motor from the load and dynamic complete - tuning operation is not allowed.	Mediocre

Motor tuning can be carried out not only by giving operation commands through the operation panel, but also by communication commands. Select the operation command by setting P0 - 02.

Explanation

When the command source P0 - 02 = 2 (communication - given), after setting the motor parameters, there is no need to press the "RUN" key on the operation panel, and the frequency converter can perform tuning.

The PKW area of Modbus supports communication - based tuning, while the PZD area does not. The operation method for communication - based tuning is as follows: First, write the tuning parameters to P1 - 37/A2 - 37, and then write the operation command.

Examples of application

The following takes the parameters of Motor 1 (set P0 - 24 to 0, Motor Parameter Group 1) as an example to introduce the motor tuning method. If you want to tune Motor 2, first set P0 - 24 to 1 (Motor Parameter Group 2). The tuning method of Motor 2 is similar to that of Motor 1, and relevant parameters can refer to Group A2.

- **Method for no - load dynamic complete tuning of synchronous machine**

When using a motor with constant output characteristics or in applications with high - precision requirements, perform dynamic complete tuning with the load detached for the optimal tuning effect.

Table 5 - 10 Method for No - load Dynamic Complete Tuning of Synchronous Machine

Step	Process
Step 1	After power - on, select the operation panel as the operation command source of the frequency converter (set P0 - 02 to 0).
Step 2	Accurately input the nameplate parameters of the motor (P1 - 00 to P1 - 05).
Step 3	If P0 - 01 is set to 1 (FVC closed - loop vector control), input the encoder parameters (P1 - 27, P1 - 28).
Step 4	Set parameter P1 - 37 to 12 (no - load dynamic tuning for synchronous machine), press the ENTER key to confirm, and the keyboard will display: 
Step5	Press and hold the "RUN" key on the operation panel for more than 3 seconds to start the motor tuning. During this process, the "RUN" indicator light remains on, and the "TUNE/TC" indicator light flashes. The frequency converter energizes the motor. When the above - mentioned display information disappears and the display returns to the normal parameter display state, it indicates that the tuning is completed. After this tuning, the frequency converter will automatically calculate the values of P1 - 16, P1 - 17, P1 - 18, and P1 - 20.

●Method for no - load dynamic complete tuning of synchronous machine

Table 5 - 11 Tuning Method for the Stationary Part of Synchronous Machine

Step	Process
Step 1	After power - up, select the operation panel as the source of the frequency converter's operating command (set P0 - 02 to 0).
Step 2	Accurately input the nameplate parameters of the motor (from P1 - 00 to P1 - 05).
Step 3	Set parameter P1 - 37 to 11 (synchronous machine on - load tuning), press the ENTER key to confirm, and the keyboard will display: 
Step 4	Press the "RUN" key on the operation panel for more than 3 seconds to start the motor tuning. During this process, the "RUN" indicator light stays on constantly, and the "TUNE/TC" indicator light flashes. The frequency converter powers on the motor. When the above - mentioned display information disappears and the display returns to the normal parameter display state, it indicates that the tuning is completed. After this tuning, the frequency converter will automatically calculate the values of P1 - 16, P1 - 17, and P1 - 18. The value of P1 - 20 needs to be manually input according to the motor parameters.

Table 5 - 12 Related Motor Parameters

Motor selection	Parameters
Motor 1	P1 - 00: Motor type selection P1 - 01: Motor rated power P1 - 02: Motor rated voltage P1 - 03: Motor rated current P1 - 04: Motor rated frequency P1 - 05: Motor rated speed P1 - 16: Stator resistance of synchronous motor P1 - 17: D - axis inductance of synchronous motor P1 - 18: Q - axis inductance of synchronous motor P1 - 20: Back electromotive force of synchronous motor
Motor2	A2 - 00 to A2 - 05: Definitions are the same as those of P1 - 00 to P1 - 05. A2 - 16 to A2 - 20: Definitions are the same as those of P1 - 16 to P1 - 20.

6 Fault handling

6.1 Fault Alarms and Countermeasures

During the operation of the frequency converter, the following types of faults may occur. Please refer to the following methods for simple fault analysis:

Fault code	Fault description	Fault cause	Solution countermeasures
Err02	Over - current during acceleration	There is a grounding or short - circuit in the output circuit of the frequency converter.	Eliminate peripheral faults and check if the motor or the interrupt contactor has short - circuited.
		The control mode is FVC or SVC and parameter identification has not been carried out.	Set the motor parameters according to the information on the motor nameplate, and carry out motor parameter identification.
		In rapid acceleration conditions, the acceleration time is set too short.	Increase the acceleration time
		The setting of over - current stall suppression is inappropriate.	Confirm that the over - current stall suppression function (P3 - 19) is enabled. If the set value of the over - current stall operation current (P3 - 18) is too large, it is recommended to adjust it within the range of 120% to 150%. If the set value of the over - current stall suppression gain (P3 - 20) is too small, it is recommended to adjust it within the range of 20 to 40.
		Manual torque boost or V/F curve is inappropriate.	Adjust the manually boosted torque or the V/F curve
		Starting a rotating motor.	Select speed - tracking startup or wait until the motor stops and then start it.
		Subject to external interference.	Check the historical fault records. If the current value during the fault is far from reaching the over - current threshold, it is necessary to find the source of interference. If there are no other sources of interference, the problem may be related to the drive board or Hall device.
Err03	Over - current during deceleration	There is a ground fault or short - circuit in the output circuit of the frequency converter.	Eliminate external faults and check whether the motor has short - circuited or open - circuited.
		The control mode is FVC or SVC, and parameter identification has not been carried out.	Set the motor parameters according to the specifications on the motor nameplate and conduct motor parameter identification.
		In rapid deceleration conditions, the deceleration time is set too short.	Increase the deceleration time
		The setting of over - current stall suppression is inappropriate.	Confirm that the over - current stall suppression function (P3 - 19) is enabled. If the set value of the over - current stall operating current (P3 - 18) is too large, it is recommended to adjust it within the range of 120% - 150%. If the set value of the over - current stall suppression gain (P3 - 20) is too small, it is recommended to adjust it within the range of 20 - 40.
		No braking unit and braking resistor have been installed.	Install a braking unit and resistor.
		Subject to external interference	Check the historical fault records. If the current value at the time of the fault is far from reaching the over - current threshold value, it is necessary to find the interference source. If there are no other interference sources, the problem may lie in the drive board or Hall device.

Fault code	Fault description	Fault cause	Solution countermeasures
Err04	Over - current during constant speed	There is a grounding or short - circuit in the output circuit of the frequency converter.	Eliminate peripheral faults and check if the motor has short - circuited or open - circuited.
		The control mode is FVC or SVC, and parameter identification has not been carried out.	Set the motor parameters according to the motor nameplate and perform motor parameter identification.
		The setting of over - current stall suppression is not appropriate.	Confirm that the over - current stall suppression function (P3 - 19) is enabled. The set value of the over - current stall operating current (P3 - 18) is too large. It is recommended to adjust it within the range of 120% to 150%. The set value of the over - current stall suppression gain (P3 - 20) is too small. It is recommended to adjust it within the range of 20 to 40.
		The selected type of the frequency converter is too small.	Under stable operating conditions, if the operating current has exceeded the rated current of the motor or the rated output current value of the frequency converter, please select a frequency converter with a higher power rating.
		Subject to external interference	Check the historical fault records. If the current value during the fault is far from reaching the over - current threshold, it is necessary to search for the interference source. If there are no other interference sources, the problem may be related to the drive board or Hall device.
Err05	Acceleration overvoltage	The input voltage is on the high side.	Adjust the voltage to the normal range.
		There is an external force dragging the motor during the acceleration process.	Remove this external force or install a braking resistor.
		The overvoltage suppression setting is inappropriate.	Confirm that the over - voltage suppression function (P3 - 23) is enabled. The set value of the over - voltage suppression operating voltage (P3 - 22) is too large. It is recommended to adjust it within the range of 770V to 700V. The set value of the over - voltage suppression gain (P3 - 24) is too small. It is recommended to adjust it within the range of 30 to 50.
		No braking unit and braking resistor are installed.	Install a braking unit and resistor.
		The acceleration time is too short.	Increase the acceleration time.
Err06	Deceleration over - voltage	The setting of over - voltage suppression is inappropriate.	Confirm that the over - voltage suppression function (P3 - 23) is enabled. The set value of the over - voltage suppression operating voltage (P3 - 22) is too large. It is recommended to adjust it within the range of 770V to 700V. The set value of the over - voltage suppression gain (P3 - 24) is too small. It is recommended to adjust it within the range of 30 to 50.
		There is an external force dragging the motor during the deceleration process.	Remove this external force or install a braking resistor.
		The deceleration time is too short.	Increase the deceleration time
		No braking unit and braking resistor have been installed.	Install a braking unit and braking resistor

Fault code	Fault description	Fault cause	Solution countermeasures
Err07	Constant - speed overvoltage	The setting of over - voltage suppression is not appropriate.	Confirm that the over - voltage suppression function (P3 - 23) has been enabled. The set value of the over - voltage suppression operating voltage (P3 - 22) is too large. It is recommended to adjust it within the range of 770V to 700V. The set value of the over - voltage suppression frequency gain (P3 - 24) is too small. It is recommended to adjust it within the range of 30 to 50. The set value of the over - voltage suppression maximum rising frequency (P3 - 26) is too small. It is recommended to adjust it within the range of 5 to 20Hz.
		There is an external force dragging the motor during the operation.	Remove this external force or install a braking resistor.
Err08	Control power supply failure	The input voltage is not within the range specified by the standard	Adjust the voltage to the range required by the standard
Err09	Under - voltage fault.	Instantaneous power outage	Enable the "no - stop during momentary power failure" function (P9 - 59), which can prevent the under - voltage fault caused by momentary power failure.
		The voltage at the input terminal of the frequency converter is not within the range required by the specifications.	Adjust the voltage to the normal range.
		The bus voltage is abnormal.	Seek technical support
		The rectifier bridge, buffer resistor, drive board and control board are abnormal.	Seek technical support
Err10	The frequency converter is overloaded.	Is the load too heavy or has the motor stalled?	Reduce the load and check the motor and mechanical conditions.
		The selected model of the frequency converter is too small.	Select a frequency converter with a higher power rating.
Err11	Motor overload	Is the setting of the motor protection parameter F9 - 01 appropriate	Set this parameter correctly
		Is the load too heavy or has the motor stalled	Reduce the load and check the motor and mechanical conditions
Err12	Input phase loss	The three - phase input power supply is abnormal.	Check and eliminate problems existing in the peripheral circuits.
		The drive board, lightning protection board, main control board and rectifier bridge are abnormal.	Seek technical support
Err13	Output phase loss	Motor failure	Check if the motor is open - circuited.
		The leads from the frequency converter to the motor are abnormal	Eliminate peripheral faults.
		The three - phase output of the frequency converter is unbalanced during motor operation	Check whether the three - phase windings of the motor are normal and troubleshoot.
		The drive board and IGBT module are abnormal	Seek technical support.
Err14	Module overheating	The ambient temperature is too high.	Lower the ambient temperature.
		The air duct is blocked.	Clean the air duct.
		The fan is damaged.	Replace the fan.
		The module thermistor is damaged.	Replace the thermistor.
		The inverter module is damaged.	Replace the inverter module.
Err15	External equipment failure	Input the external fault signal through the multi - function terminal DI.	Troubleshoot peripheral faults, confirm that the machinery permits a restart (P8 - 18), and reset to run.
		Input the external fault signal through the virtual IO function.	Confirm that the parameter settings of the A1 group virtual IO group are correct, and then reset to operate.

Fault code	Fault description	Fault cause	Solution countermeasures
Err16	Communication failure	The host computer is not working properly.	Check the wiring of the host computer.
		The communication cable is not in normal condition.	Check the communication connection cable.
		The setting of the communication expansion card P0 - 28 is incorrect.	Set the type of communication expansion card correctly.
		The setting of the communication parameter PD group is incorrect.	Set the communication parameters correctly.
		After the above inspections, you can try to restore the factory settings.	
Err17	Contactor fault	The drive board and power supply are abnormal.	Replace the drive board or power supply board.
		The contactor is abnormal.	Replace the contactor.
Err18	Current detection fault	Check for abnormalities in the Hall device	Replace the Hall device
		The drive board is abnormal	Replace the drive board
Err19	Motor tuning fault	The motor parameters are not set according to the nameplate.	Set the motor parameters correctly according to the nameplate.
		The parameter identification process times out.	Check the leads from the frequency converter to the motor.
		The encoder is abnormal.	Check whether the encoder line count setting is correct (P1 - 27), and check whether the connection of the encoder signal lines is correct and secure.
Err20	Encoder fault	Encoder model mismatch	Set the encoder type correctly according to the actual situation.
		Incorrect encoder connection	Check the power supply and phase sequence of the PG card
		Encoder damage	Replace the encoder
		Abnormality of the PG card	Replace the PG card
Err21	EEPROM read - write fault	The EEPROM chip is damaged.	Replace the main control board.
Err23	Ground short - circuit fault	The motor is short - circuited to the ground	Replace the cable or the motor
Err26	Cumulative running timeReach fault	The cumulative running time has reached the set value	Use the parameter initialization function to clear the recorded information
Err27	User - defined fault 1	Input the signal of user - defined fault 1 through the multi - function terminal DI	Reset and run
		Input the signal of user - defined fault 1 through the virtual IO function.	Reset and run
Err28	User - defined fault 2	Input the signal of user - defined fault 2 through the multi - function terminal DI.	Reset and run
		Input the signal of user - defined fault 2 through the virtual IO function.	Reset and run

Fault code	Fault description	Fault cause	Solution countermeasures
Err29	Cumulative power - on time reaches the fault threshold	The cumulative power - on time has reached the set value	Use the parameter initialization function to clear the recorded information.
Err30	Load - loss fault	The operating current of the frequency converter is less than P9 - 64	Confirm whether the load is disconnected and whether the parameter settings of P9 - 64 and P9 - 65 are in line with the actual operating conditions
Err31	PID feedback loss fault during operation	The PID feedback is less than the set value of PA - 26	.Check the PID feedback signal or set PA - 26 to an appropriate value
Err40	Cycle - by - cycle current limiting fault	Whether the load is too large or the motor is blocked.	Reduce the load and check the motor and mechanical conditions.
		The selected type of the frequency converter is too small	Select a frequency converter with a higher power rating.
Err41	Motor fault during runtime switching	Change the current motor selection via the terminal during the operation of the frequency converter.	Carry out the motor switching operation after the frequency converter stops.
Err42	Excessive speed deviation fault	The encoder parameters are incorrectly set.	Set the encoder parameters correctly.
		Parameter identification has not been carried out.	Carry out motor parameter identification.
		The detection parameters P9 - 69 and P9 - 70 for excessive speed deviation are unreasonably set.	Set the detection parameters reasonably according to the actual situation.
Err43	Motor over - speed fault	The encoder parameters are set incorrectly.	Set the encoder parameters correctly.
		Parameter identification has not been carried out.	Conduct motor parameter identification.
		The motor overspeed detection parameters P9 - 67 and P9 - 68 are set unreasonably.	Set the detection parameters reasonably according to the actual situation.
Err45	Motor over - temperature fault	The wiring of the temperature sensor is loose.	Check the wiring of the temperature sensor and troubleshoot.
		The motor temperature is too high.	Increase the carrier frequency or adopt other heat - dissipation measures to cool the motor.
Err51	Initial position angle identification fault	The frequency converter has an output phase - loss.	Check the motor wires and troubleshoot.
		There is a current detection fault in the frequency converter or the Hall element is damaged.	Check the Hall element and trobleshoot.
		The inductance value of the motor is too large.	Use function code P9 - 75 to shield this fault.
Err61	Brake unit overload	The braking resistor value is too small	Replace it with a braking resistor with a larger resistance value
Err62	Brake circuit short - circuit.	The brake module is abnormal.	Seek technical support.
Err64	Back - EMF (Electromotive Force) identification abnormal warning	The back - EMF identification is abnormal during dynamic identification.	Check whether the motor is completely unloaded during dynamic identification, and whether the motor rotates to 40% of the rated speed of the motor during the identification process. If the motor fails to rotate to 40% of the rated speed due to being loaded during identification, it is necessary to disconnect the load and conduct the identification again
		The motor has a demagnetization phenomenon.	Check whether the motor is demagnetized.
		The back - EMF of the motor is indeed too large or too small.	If it is confirmed that the back - EMF of the motor is too large or too small, you can press the "STOP" button to reset this warning and continue the subsequent operation

6.2 Common Faults and Handling Methods

Serial Number	Fault Phenomenon	Possible Causes	Solutions
1	No display when powered on	The power grid voltage is absent or too low.	Check the input power supply
		The switching power supply on the inverter drive board malfunctions.	Check the bus voltage.
		The connection between the control board, the drive board and the keyboard is broken.	Re - insert the 8 - core and 34 - core ribbon cables.
		The buffer resistor of the inverter is damaged.	Seek service from the manufacturer.
		The control board or the keyboard malfunctions.	
		The rectifier bridge is damaged.	
2	It keeps displaying **"HF"** when powered on.	Poor contact in the connection between the drive board and the control board.	Seek service from the manufacturer.
		Damage to relevant components on the control board.	
		Ground short - circuit in the motor or motor wires.	
		Hall element failure.	
		Excessively low power grid voltage.	
3	When powered on, "Err23" is displayed with an alarm.	The motor or the output wire is short - circuited to the ground.	Measure the insulation of the motor and output wires with a megohmmeter.
		The frequency converter is damaged.	Seek service from the manufacturer.
4	When the frequency converter is powered on, it displays normally. However, after starting to run, it shows "HF" and stops immediately.	The fan is damaged or experiencing blocked rotation.	Replace the fan.
		There is a short - circuit in the wiring of the peripheral control terminals.	Eliminate the external short - circuit fault.

Serial Number	Fault Phenomenon	Possible Causes	Solutions
5	Frequently report the "Err14" (IGBT overheating) fault.	The carrier frequency setting is too high.	Lower the carrier frequency (P0 - 15).
		The fan is damaged or the air duct is blocked.	Replace the fan and clean the air duct.
		Components inside the frequency converter are damaged (such as thermocouples or others).	Seek service from the manufacturer
6	The motor does not rotate after the frequency converter starts running.	The parameter settings of the frequency converter are incorrect (motor parameters).	Restore factory parameters and re - set the parameter group for use. Check that the encoder parameter settings are correct and the motor rated parameter settings are correct, such as the motor rated frequency, rated speed, etc. Check that P0 - 01 (control mode) and P0 - 02 (operation mode) are set correctly. In the V/F mode, under heavy - load starting, adjust the P3 - 01 (torque boost) parameter.
		Poor contact in the connection between the drive board and the control board.	Re - insert the connection wires and confirm that the wiring is secure.
		The drive board malfunctions.	Seek service from the manufacturer.
7	The DI terminal fails.	Incorrect parameter settings.	Check and reset the relevant parameters in Group F4.
		-External signal errors.	Re - connect the external signal wires.
		-The SEL and +24V jumper is loose.	Re - confirm the SEL and +24V jumper and ensure it is tightened.
		Control board malfunctions.	Seek service from the manufacturer.
8	When in closed - loop vector control, the motor speed cannot be increased.	Encoder failure	Replace the code disc and re - confirm the wiring
		The encoder is wrongly wired or there is poor contact	Replace the PG card
		PG card failure.	Seek service from the manufacturer.
		Drive board failure.	

Serial Number	Fault Phenomenon	Possible Causes	Solutions
9	The frequency converter frequently reports over - current and over - voltage faults	Incorrect motor parameter settings	Reset the motor parameters or perform motor tuning.
		Inappropriate acceleration and deceleration times.	Set appropriate acceleration and deceleration times.
		Load fluctuations.	Seek service from the manufacturer
10	When powered on (or during operation), "Err17" is reported...	The soft - start contactor fails to engage.	Check if the contactor cable is loose. Check if the contactor is faulty. Check if the 24V power supply of the contactor is faulty. Seek service from the manufacturer.
11	When the motor is in the deceleration or deceleration - to - stop state, the motor braking torque is insufficient	The encoder is disconnected or the over - voltage stall protection is activated	In the vector control mode with a speed sensor (P0 - 01 = 1), please check the encoder wiring. If a braking resistor has been configured, the "over - voltage stall enable" should be selected as "disabled" (set P3 - 23 = 0) to turn off the over - voltage stall..

7 Daily operation and maintenance

7.1 Routine inspection items

7.1.1 Daily inspection items

Influenced by environmental factors such as temperature, humidity, dust and vibration, the components inside the equipment may age, potentially leading to malfunctions or reducing the equipment's service life. Therefore, it is necessary to conduct daily and regular maintenance of the equipment. In particular, in high - temperature environments, occasions with frequent starts and stops, environments with AC power and load fluctuations, environments with significant vibrations or impacts, and environments with dust/metal dust/hydrochloric - acid - like corrosive substances, the interval between regular inspections should be shortened.

To ensure the normal function of the equipment and protect the products from damage, please confirm the following items daily. Please make copies of this inspection confirmation form for use. After each confirmation, stamp the "Confirmed" seal in the confirmation column.

Inspection Items	Inspection Content	Countermeasures in Case of Faults	Confirmation Column
Motor	Whether there are abnormal noises and vibration in the motor.	Confirm whether the mechanical connection is abnormal. Confirm whether the motor has a phase - loss. Confirm whether the motor fixing screws are secure	
Fan cooling	Whether the cooling fans of the frequency converter and the motor operate abnormally.	Confirm whether the cooling fan on the equipment side is running. Confirm whether the cooling fan on the motor side is abnormal. Confirm whether the ventilation passage is blocked. Confirm whether the ambient temperature is within the allowable range.	
Installation environment	Whether there are abnormalities in the electrical cabinet and cable trough.	Confirm whether there is insulation damage to the incoming and outgoing cables. Confirm whether the installation and fixing brackets vibrate. Confirm whether the copper busbars and cable connection terminals are loose and corroded through.	
Load	Whether the operating current of the frequency converter exceeds the rated current of the frequency converter and the rated current of the motor.	Confirm whether the motor parameter settings are correct. Confirm whether the motor is overloaded. Confirm whether the mechanical vibration is excessive (normally < 0.6g).	
Input voltage	Whether the power supply voltage between the main circuit and the control circuit is abnormal.	Confirm whether the input voltage is within the allowable range. Confirm whether there is the start - up of large loads nearby.	

7.1.2 List of Regular Inspection Items

The following table shows the key items for regular inspection of this product. Under normal circumstances, it is recommended to conduct a regular maintenance check every 1 - 2 years. In actual maintenance, please determine the actual maintenance cycle based on the usage and working environment of the product. Regular maintenance helps prevent deterioration of product functions and product damage.

When conducting maintenance, please make copies of the regular maintenance item list. After each confirmation, stamp the "Confirmed" seal in the inspection column.

Caution

Caution: To prevent electric shock, do not conduct inspections or wiring operations while the power is on. Before performing wiring or repair work, make sure to cut off the power supply of all equipment. After cutting off the power, there may be residual voltage in the internal capacitors of the equipment. Please wait at least for the time specified on the warning label of the product before carrying out wiring, repair, or other operations. Measure the DC voltage of the main circuit to confirm that it is below the safe voltage; otherwise, there is a risk of electric shock.

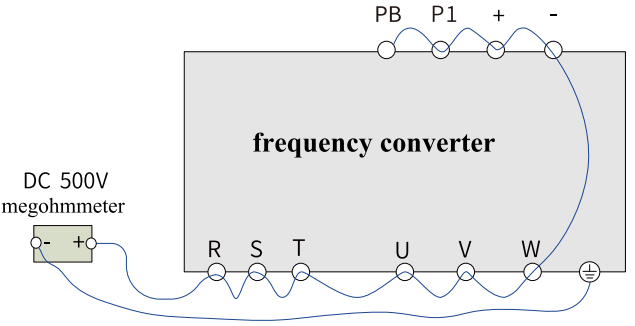
Inspection Items	Inspection Contents	Countermeasures in Case of Malfunctions	Inspection Column
The whole machine	Is there any accumulation of garbage, dirt or dust on the surface	Confirm whether the control cabinet is powered off. Use a vacuum cleaner to remove garbage or dust to avoid contact with components. When the dirt on the surface cannot be removed, you can wipe it with alcohol and wait until it is completely dry and the alcohol has evaporated.	
Cables	Check if the power cables and their connection points have changed color. Check if the insulation layer has aged or cracked	Replace the cables that have cracked. Replace the damaged connection terminals.	
Periphery of the electromagnetic contactor	- Whether it fails to engage firmly or makes abnormal noises during operation. - Whether there are peripheral devices that are short - circuited, contaminated by water, swollen or broken.	Replace components that have malfunctioned	
Air duct vents	Check if the air ducts and heat sinks are blocked. Check if the fan is damaged.	Clean the air ducts. Replace the fan.	
Control circuit	Check if there is poor contact in control components. Check if the terminal screws are loose. Check if the insulation of control cables is cracked.	Clean foreign substances from the surface of the control circuit and connection terminals. Replace the damaged and corroded control cables.	

7.2 Main circuit insulation test

Danger

High - voltage (>500V) testing is strictly prohibited (already completed during factory production).

Before testing, remove the varistor screws to disconnect the varistor connection.
When measuring the insulation resistance with a megohmmeter (please use a DC 500V megohmmeter), disconnect the main circuit wires from the frequency converter. Do not test the insulation of the control circuit with a megohmmeter. Please refer to the figure below.



The measured result is required to be greater than 5 MΩ.

7.3 Replacement of Vulnerable Parts

7.3.1 Service life of vulnerable parts

The vulnerable parts of this product mainly include cooling fans and electrolytic capacitors for filtering. Their service life is closely related to the operating environment and maintenance conditions. The general service life is shown in the following table.

Device Name	Service life [Note]
Fan	≥ 5 years
Electrolytic capacitor	≥ 5 years
Note: The service life refers to the time of use under the following conditions. Users can determine the replacement period based on the operating hours. Ambient temperature: 40°C Load rate: 80% Operation rate: 24 hours/day	

7.3.2 Replacement of Cooling Fan

Number of fans in use

- Possible causes of cooling fan damage: Bearing wear, blade aging.
- Criteria for judging fan damage: Check if there are cracks on the fan blades, etc., whether there is abnormal vibration noise when the machine is turned on, and if the fan blades operate abnormally.
- Method of fan replacement: Press the buckle of the fan plastic protective cover and then pull it outwards. After replacing the fan, ensure that the wind direction is upward. Pay attention to the wind direction.

7.3.3 Replacement of Filtering Electrolytic Capacitors

- Possible causes of damage: Poor input power quality, high ambient temperature, frequent load fluctuations, and electrolyte aging.
- Criteria for judgment: Check for liquid leakage, whether the safety valve has bulged, measure the electrostatic capacitance, and measure the insulation resistance.
- Replacement of filtering capacitors: Since the replacement of filtering capacitors involves internal components, users are prohibited from replacing them by themselves. Please contact Merkerwell Technical Support for replacement.

7.4 Storage and Warranty

Storage

After purchasing the product, users must pay attention to the following points for both temporary and long - term storage:

- When storing, try to pack the product in the company's packing box according to the original packaging.
- It is not allowed to place the whole machine in a humid, high - temperature environment or expose it to the sun outdoors for a long time.
- Long - term storage may cause the deterioration of electrolytic capacitors. It is necessary to power on the device at least once within six months. The power - on time should be at least 5 hours. The input voltage must be gradually increased to the rated value using a voltage regulator or consult the company's technical support.

Warranty

Under normal usage, if the product malfunctions or gets damaged, our company will provide warranty services within the warranty period (please refer to the order form for the specific product warranty period). After the warranty period expires, maintenance fees will be charged.
During the warranty period, repair costs will be charged for product damage caused by the following situations.

- Product damage caused by operating this product not in accordance with the regulations in the manual.
- Product damage caused by fire, flood, or abnormal voltage.
- Product damage caused by using this product for non - normal functions.
- Product damage caused by exceeding the specified usage range of the product.
- Secondary product damage caused by force majeure factors (natural disasters, earthquakes, lightning strikes).

The service fees shall be calculated according to the unified standards of the manufacturer. In case of a contract, the contract shall take precedence.For detailed warranty instructions, please refer to the "Product Warranty Card"

8 Optional accessories

8.1 Brake Assembly

Model

Table 8 - 1 Brake Assembly Selection Table

Model	Compatible Motor (KW)	Brake unit	125% braking torque (10% ED, maximum 10 seconds)		Remarks	Minimum brake resistor value (Ω)
			Recommended brake resistor specifications	Quantity of brake resistors		
Single - phase 220V						
MK800-2S0.4GB	0.4	Standard built - in configuration	90W300Ω	1	Add "B" after the frequency converter model	48
MK800-2S0.75GB	0.8		160W 170Ω	1		48
MK800-2S1.5GB	1.5		340W80Ω	1		32
MK800-2S2.2GB	2.2		500W55Ω	1		16
MK800-2S4.0GB	4.0		800W 33Ω	1		16
MK800-2S5.5GB	5.5		1300W22Ω	1		10
MK800-2S7.5PB	7.5		1700W16Ω	1		10
MK800-2S7.5GB	7.5		1700W16Ω	1		10
MK800-2S11GB	11.0		2300W12Ω	1		12
MK800-2S15GB	15.0		3000W9Ω	1		9
Three - phase 220V						
MK800-2T0.4GB	0.4	Standard built - in configuration	90W300Ω	1	Add "B" after the frequency converter model	48
MK800-210.75GB	0.8		160W 170Ω	1		48
MK800-2T1.5GB	1.5		340W80Ω	1		32
MK800-2T2.2GB	2.2		500W55Ω	1		16
MK800-2T4.0GB	4.0		800W33Ω	1		16
MK800-215.5GB	5.5		1300W 22Ω	1		10
MK800-2T7.5PB	7.5		1700W 16Ω	1		10
MK800-2T7.5GB	7.5		1700W16Ω	1		10
MK800-2T11GB	11.0		2300W 12Ω	1		12
MK800-2T15GB	15.0		3000W9Ω	1		9

Model	Compatible Motor (KW)	Brake unit	125% braking torque (10% ED, maximum 10 seconds)		Remarks	Minimum brake resistor value (Ω)
			Recommended brake resistor specifications	Quantity of brake resistors		
Three - phase220V						
MK800-2T18.5G	18.5	Built - in optional configuration	3900W 7Ω	1	Add "B" after the frequency converter model	7
MK800-2T22G	22.0		4600W 6Ω	1		6
MK800-2T30G	30.0		5500W5Ω	1		5
MK800-2137G	37.0		6800W4Ω	1		4
MK800-2T45G	45.0	External	5000W5.4Ω	2		4.9
MK800-2T55G	55.0		5000W4.4Ω	2		4.0
MK800-2T75G	75.0		7500W4.0Ω	2		3.7
MK800-2T90G	90.0		5000W4.0Ω	3		3.7
MK800-2T110G	110.0		7500W4.0Ω	3		3.7
MK800-2T132G	132.0		7000W4.0Ω	4		3.7
Three - phase 380V						
MK800-4T0.75GB	0.8	Standard built - in configuration	140W800Ω	1	Add "B" after the frequency converter model	96
MK800-4T1.5GB	1.5		300W 380Ω	1		96
MK800-412.2GB	2.2		440W260Ω	1		64
MK800-4T4.0GB	4.0		740W150Ω	1		32
MK800-4T5.5GB-S	5.5		1100W 100Ω	1		32
MK800-4T5.5GB	5.5		1100W100Ω	1		32
MK800-4T7.5GB	7.5		1500W 75Ω	1		32
MK800-4T11GB	11.0		2200W 50Ω	1		24
MK800-4T15GB-S	15.0		3000W 38Ω	1		24
MK800-4115GB	15.0		3000W38Ω	1		24
MK800-4T18.5GB	18.5		4000W32Ω	1		24
MK800-4T22GB	22.0		4500W 27Ω	1		24
MK800-4130GB-S	30.0		6000W 20Ω	1		19
MK800-4T30G	30.0	Built - in as an optional configuration	6000W20Ω	1	Add "B" after the frequency converter model	19
MK800-4T37G	37.0		7000W 16Ω	1		15
MK800-4T45G	45.0		9000W 13Ω	1		13
MK800-4T45G	45.0		9000W13Ω	1		13
MK800-4T55G	55.0		11000W 10.5Ω	1		10
MK800-4T75G	75.0		15000W 7.7Ω	1		7
MK800-4T90G	90.0	External	9000W10.2Ω	2		10.2*2
MK800-4T110G	110.0		11000W 8.0Ω	2		6.8*2
MK800-4T132G	132.0		13000W 6.8Ω	2		6.8*2
MK800-41160G-S	160.0		16000W 2.8Ω	2		2.5*2
MK800-4T160G	160.0		16000W 2.8Ω	2		2.5*2
MK800-4T185G	185.0		19000W 4.5Ω	2		2.5*2
MK800-4T200G	200.0		19000W4.5Ω	2		2.5*2

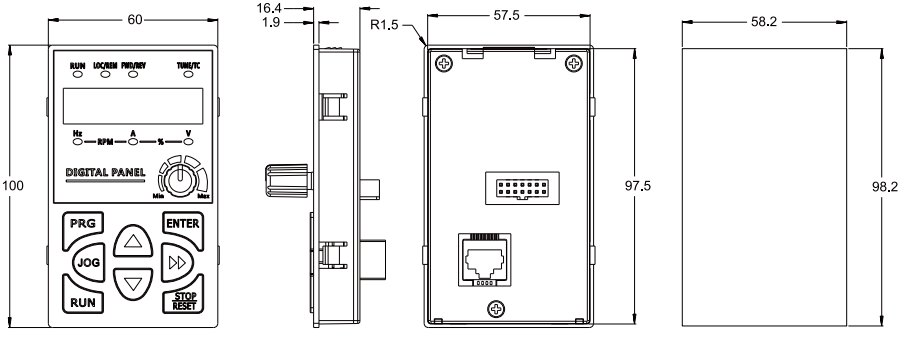
Model	Compatible Motor (KW)	Brake unit	125% braking torque (10% ED, maximum 10 seconds)		Remarks	Minimum brake resistor value (Ω)
			Recommended brake resistor specifications	Quantity of brake resistors		
Three - phase 380V						
MK800-41220G-5	220.0		21000W 4.1Ω	2		2.5*2
MK800-4T220G	220.0		21000W 4.1Ω	2		2.5*2
MK800-4T250G	250.0		24000W 3.6Ω	2		2.5*2
MK800-4T280G	280.0		27000W3.2Ω	2		2.5*2
MK800-4T315G-S	315.0		20000W 4.3Ω	3		2.5*3
MK800-4T315G	315.0		20000W4.3Ω	3		2.5*3
MK800-4T355G	355.0		23000W 3.8Ω	3		2.5*3
MK800-4T400G	400.0		26000W 3.4Ω	3		2.5*3
MK800-4T450G	450.0		29000W 3.0Ω	3		2.5*3
MK800-4T500G	500.0		21000W 4.1Ω	4		2.5*4

Instructions

- For models with a voltage range of 380 - 480V, the default starting braking voltage of the built - in braking unit is 690V. For models with a voltage range of 200 - 240V, the default starting braking voltage of the built - in braking unit is 360V.
- The data in the above table is for guidance only. Users can select different resistance values and powers according to the actual situation (however, the resistance value must not be less than the minimum braking resistance value in the table, and the power can be larger). The selection of the braking resistor needs to be determined based on the power generated by the motor in the actual application system, which is related to system inertia, deceleration time, the energy of potential load, etc. Users need to make the selection according to the actual situation.
- The larger the inertia of the system, the shorter the required deceleration time, and the more frequent the braking, the larger the power and the smaller the resistance value of the braking resistor that need to be selected.

8.2operation panel

Model	Description	Appearance
MK800LED	This is an externally - connected operation panel suitable for this product. It adopts LED display, and its operation method is exactly the same as that of the machine's own operation panel. Due to its externally - connected feature, it is convenient for customers to conduct debugging.	



The cut - out dimensions of the keyboard compartment are: height 123mm, width 66.6mm

Cutout dimension diagram

Figure 8 - Dimensions of the externally - connected operation panel of MK800LED (Unit: mm)

9 Appendix A: Parameter Table

"☆": It indicates that the set value of this parameter can be changed when the frequency converter is in either the stopped or running state.

"★": It indicates that the set value of this parameter cannot be changed when the frequency converter is in the running state.

"●": It indicates that the value of this parameter is an actual detected and recorded value and cannot be changed.

"*": It indicates that this parameter is a "manufacturer parameter", which is only set by the manufacturer, and user operation is prohibited.

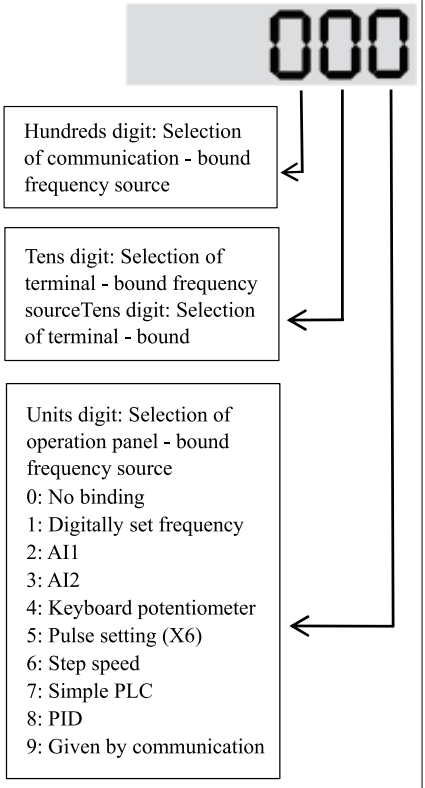
A.1 Brief Table of Basic Function Parameters

FunctionCode	Name	Setting Range		Factory Default	Change
Group P0: Basic Function Group					
P0-01	Control mode of the first motor	0: Sensorless vector control (SVC) 1: Sensor - based vector control (FVC)	2: V/F control	0	★
P0-02	Operating command selection	0: Operation panel 1: Terminals	2: Communication	0	☆
P0-03	Selection of main frequency command input	0: Digital setting (not power - off memorized) 1: Digital setting (power - off memorized) 2: AI1 3: AI2 4: Keyboard potentiometer	5: Pulse setting (X6) 6: Multi - segment command 7: Simple PLC 8: PID 9: Given by communication	0	★
P0-04	Selection of auxiliary frequency command input	The same as P0 - 03 (Selection of main frequency command input)		0	★

A.1 Brief Table of Basic Function Parameters

FunctionCode	Name	Setting Range		Factory Default	Change
P0-05	Selection of the range of the auxiliary frequency command during superposition	0: Relative to the maximum frequency	1: Relative to the main frequency command	0	☆
P0-06	Range of the auxiliary frequency command during superposition	0%~150%		100%	☆
P0-07	Selection of frequency command superposition	00 Tens place: Operational relationship between main and auxiliary frequency commands 0: Main + Auxiliary 1: Main - Auxiliary 2: Maximum of the two 3: Minimum of the two Units place: Frequency command selection 0: Main frequency command 1: Result of main - auxiliary operation (the operation relationship is determined by the digit in the tens place) 2: Switch between main frequency command and auxiliary frequency command 3: Switch between main frequency command and the result of main - auxiliary operation 4: Switch between auxiliary frequency command and the result of main - auxiliary operation		00	☆
P0-08	Preset frequency	0.00Hz ~ maximum frequency (P0 - 10)		50.00Hz	☆
P0-09	Running direction	0: Run in the default direction	1: Run in the direction opposite to the default direction	0	☆
P0-10	Maximum frequency	5.00Hz~500.00Hz		50.00Hz	★

FunctionCode	Name	Setting Range		Factory Default	Change
P0-11	Selection of upper limit frequency command	0: Set by P0 - 12 1: AII 2: AI2	3: Keyboard potentiometer 4: Pulse setting 5: Given by communication	0	★
P0-12	Upper limit frequency	Lower limit frequency: P0 - 14 ~ maximum frequency P0 - 10		50.00Hz	☆
P0-13	Upper limit frequency offset	0.00Hz ~ maximum frequency P0 - 10		0.00Hz	☆
P0-14	Lower limit frequency	0.00Hz ~ upper limit frequency P0 - 12		0.00Hz	☆
P0-15	Carrier frequency	2.0kHz ~ 8.0kHz		Determination of machine type	☆
P0-16	Carrier frequency adjustment with temperature	0: No	1: Yes	1	☆
P0-17	Acceleration time 1	0.00s~650.00s(P0-19=2) 0.0s~6500.0s(P0-19=1)	0s~65000s(P0-19=0)	Determination of machine type	☆
P0-18	Deceleration time 1	0.00s~650.00s(P0-19=2) 0.0s~6500.0s(P0-19=1)	0s~65000s(P0-19=0)	Determination of machine type	☆
P0-19	Unit of acceleration and deceleration time	0: 1s 1: 0.1s	2: 0.01s	1	★
P0-21	Auxiliary frequency command offset frequency during superposition	0.00Hz ~ maximum frequency P0 - 10		0.00Hz	☆
P0-22	Frequency command resolution	2: 0.01Hz		2	★
P0-23	Digital setting frequency shutdown memory selection	0: Do not memorize	1: Memorize	0	☆
P0-24	Motor parameter group selection	0: Motor parameter set 1	1: Motor parameter set 2	0	★

FunctionCode	Name	Setting Range		Factory Default	Change
P0-25	Reference frequency for acceleration and deceleration time	0: Maximum frequency (P0 - 10)	1: Set frequency 2: 100Hz	0	★
P0-26	Frequency command UP/DOWN during operation Reference	0: Operating frequency	1: Set frequency	0	★
P0-27	Selection of running command bundled with main frequency command			0000	☆

FunctionCode	Name	Setting Range	Factory Default	Change
Group P1: The first set of motor parameters				
P1-00	Motor type selection	2: Permanent magnet synchronous motor	2	★
P1-01	Rated motor power	0.1kW ~ 1000.0kW	Determined by machine type	★
P1-02	Rated motor voltage	1V ~ 2000V	Determined by machine type	★
P1-03	Rated motor current	.01A~655.35A (Inverter power ≤ 55kW) 0.1A~6553.5A (Inverter power>55kW)	Determined by machine type	★
P1-04	Rated motor frequency	0.01Hz~Maximum frequency	Determined by machine type	★
P1-05	Rated motor speed	1rpm~65535rpm	Determined by machine type	★
P1-16	Stator resistance of synchronous motor	0.001Ω~65.535Ω (Inverter power≤55kW) 0.0001Ω~6.5535Ω (Inverter power>55kW)	Tuning parameters	★
P1-17	Inductance of D - axis of synchronous motor	0.01mH~655.35mH (Inverter power≤55kW) 0.001mH~65.535mH (Inverter power>55kW)	Tuning parameters	★
P1-18	Inductance of Q - axis of synchronous motor	0.01mH~655.35mH (Inverter power≤55kW) 0.001mH~65.535mH (Inverter power>55kW)	Tuning parameters	★
P1-20	Back electromotive force of synchronous motor	0.0V~6553.5V	Tuning parameters	★
P1-27	Number of encoder lines	1~65535	1024	★
P1-28	Encoder type	0：ABZ incremental encoder 1：UVW incremental encoder	0	★
P1-30	AB phase sequence of ABZ incremental encoder	0: Forward 1: Reverse	0	★
P1-31	Encoder installation angle	0.0~359.9°	0.0°	★
P1-32	UVW phase sequence of UVW encoder	0: Forward 1: Reverse	1	★

FunctionCode	Name	Setting Range		Factory Default	Change
P1-34	Number of pole pairs of resolver	1~65535		1	★
P1-36	Detection time for speed feedback PG disconnection	0.0s: No action	0.1s~10.0s	0.0s	★
P1-37	Tuning selection	00: No operation 11: Synchronous belt - loaded tuning	12: Synchronous machine no - load tuning	00	★
Group P2: Vector Control Parameters of the First Motor					
P2-00	Speed loop proportional gain 1	1~100		20	☆
P2-01	Speed loop integral time 1	0.01s~10.00s		0.50s	☆
P2-02	Switching frequency 1	0.00~P2-05		5.00Hz	☆
P2-03	Speed loop proportional gain 2	1~100		20	☆
P2-04	Speed loop integral time 2	0.01s~10.00s		1.00s	☆
P2-05	Switching frequency 2	P2-02~Maximum frequency		10.00Hz	☆
P2-09	Torque upper limit command selection in speed control mode	0: Set by function code P2-10 1: AII 2: AI2 3: Keyboard potentiometer 4: Pulse (X6)	5: Given by communication 6: MIN(AI1, AI2) 7: MAX(AI1, AI2) The full scale of options 1 - 7 corresponds to P2 - 10	0	☆
P2-10	Digital setting of torque upper limit in speed control mode	0.0%~200.0%		150.0%	☆
P2-11	Torque upper - limit command selection (generating) in speed - control mode	0: Set by function code P2 - 12 (no distinction between motoring and generating) 1: AII 2: AI2 3: Keyboard potentiometer 4: Set by PULSE	5: Given by communication 6: MIN(AI1, AI2) 7: MAX(AI1, AI2) 8: Set by function code P2 - 12 The full scale of options 1 - 7 corresponds to P2 - 12	0	☆

FunctionCode	Name	Setting Range	Factory Default	Change
P2-12	Digital setting of torque upper limit (generating) in speed control mode	0.0% ~ 200.0%	150.0%	☆
P2-13	Excitation regulation proportional gain	0~60000	2000	☆
P2-14	Excitation regulation integral gain	0~60000	1300	☆
P2-15	Torque regulation proportional gain	0~60000	2000	☆
P2-16	Torque regulation integral gain	0~60000	1300	☆
P2-18	Synchronous machine field - weakening mode	0,1,2	1	★
P2-19	Synchronous machine field - weakening gain	1~50	5	☆
P2-22	Enable for generating torque upper limit to take effect	0,1	0	★
P2-23	Margin of synchronous machine output voltage upper limit	0%~50%	5%	☆
P2-24	Current for detecting synchronous machine initial position angle	80%~180%	120%	☆
P2-25	Detection of synchronous machine initial position angle	0,1,2	0	☆
P2-27	Adjustment gain of synchronous machine saliency ratio	50~500	100	☆
P2-28	Maximum torque - to - current ratio control	0,1	0	☆
P2-32	Z - signal correction	0,1	1	☆
P2-36	Low - speed excitation current	30%~80%	30%	☆
P2-37	Low - speed carrier frequency	0.8K~P0-15	1.5K	☆

FunctionCode	Name	Setting Range		Factory Default	Change
P2-41	Current for detecting synchronous machine inductance	30%~120%		80%	☆
P2-43	Zero servo enable	0~1		0	☆
P2-44	Switching frequency	0.00~P2-02		0.30Hz	☆
P2-45	Zero servo speed loop proportional gain	1~100		10	☆
P2-46	Zero servo speed loop integral time	0.01s~10.00s		0.50s	☆
P2-49	Tuning - free mode	0,1,2		0	☆
P2-50	Online back - EMF calculation	0,1		0	☆
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: V/F with exponent of 1.2 4: V/F with exponent of 1.4	6: V/F with exponent of 1.6 8: V/F with exponent of 1.8 9: Reserved 10: Complete V/F separation mode 11: Semi - V/F separation mode	0	★

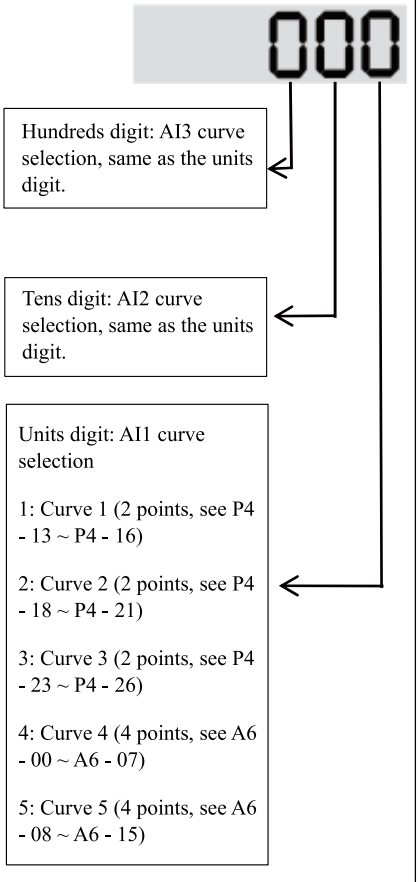
FunctionCode	Name	Setting Range		Factory Default	Change
P2-12	Digital setting of torque upper limit (generating) in speed control mode	0.0% ~ 200.0%		150.0%	☆
P3-01	Torque boost	0.0%:((No torque boost))	0.1%~30.0%	Determination of machine type	☆
P3-02	Torque boost cut - off frequency	0.00Hz~Maximum frequency		50.00Hz	★
P3-03	Multi - point V/F frequency point 1	0.00Hz~P3-05		0.00Hz	★
P3-04	Multi - point V/F voltage point 1	0.0%~100.0%		0.0%	★
P3-05	Multi - point V/F frequency point 2	P3-03~P3-07		0.00Hz	★
P3-06	Multi - point V/F voltage point 2	0.0%~100.0%		0.0%	★
P3-07	Multi - point V/F frequency point 3	P3-05~Rated frequency of the motor(P1-04)		0.00Hz	★
P3-08	Multi - point V/F voltage point 3	0.0%~100.0%		0.0%	★
P3-10	V/F over - excitation gain	0~200		64	☆
P3-11	V/F oscillation suppression gain	0~100		40	☆
P3-13	Voltage source for V/F separation	0: Digital setting (P3 - 14) 1: AI1 2: AI2 3: Keyboard potentiometer 4: Set by PULSE (X6)	5: Multi - segment command 6: Simple PLC 7: PID 8: Given by communication Note: 100.0% corresponds to the rated voltage of the motor	0	☆
P3-14	Digital setting of voltage for V/F separation	0V~Rated voltage of the motor		0V	☆
P3-15	Voltage acceleration time for V/F separation	0.0s~1000.0s(Note: It represents the time taken for the voltage to change from 0V to the rated voltage of the motor.)		0.0s	☆
P3-16	Voltage deceleration time for V/F separation	0.0s~1000.0s(Note: It represents the time taken for the voltage to change from 0V to the rated voltage of the motor.)		0.0s	☆
P3-17	Selection of V/F Separation Shutdown Mode	0:Frequency/voltage decrease to 0 independently	1: Frequency decreases after the voltage is reduced to 0	0	☆
P3-18	Over - current stall operating current	50~200%		150%	★
P3-19	Over - current stall enable	0: Invalid	1: Valid	1 (Valid)	★

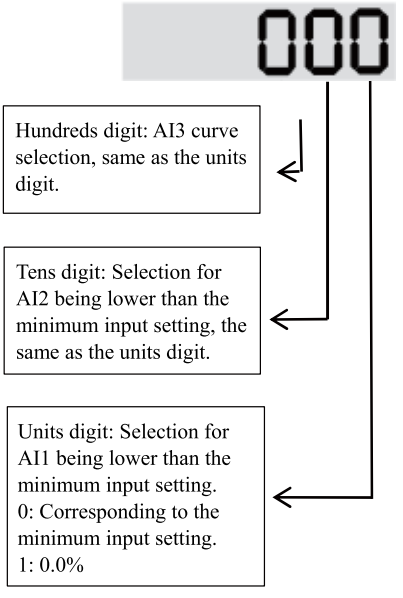
FunctionCode	Name	Setting Range		Factory Default	Change
P3-20	Over - current stall suppression gain	0~100		20	☆
P3-21	Multi - speed over - current stall operating current compensation coefficient	50~200%		50%	★
P3-22	Over - voltage stall operating voltage	650.0V~800.0V		770.0V	★
P3-23	Over - voltage stall enable	0：Invalid	1：Valid	1 (Valid)	★
P3-24	Over - voltage stall suppression frequency gain	0~100		30	☆
P3-25	Over - voltage stall suppression voltage gain	0~100		30	☆
P3-26	Over - voltage stall maximum rising frequency limit	0~50Hz		5Hz	★
Group P4: Input Terminals					
P4-00	Function Selection for X1 Terminal	0: No function 1: Forward operation FWD or operation command 2: Reverse operation REV or forward/reverse operation direction (Note: When set to 1 or 2, it needs to be used in conjunction with P4 - 11. See the function code parameter description for details) 3: Three - wire operation control 4: Forward jog (FJOG) 5: Reverse jog (RJOG) 6: Terminal UP 7: Terminal DOWN	26: Counter reset 27: Length counting input 28: Length reset 29: Torque control prohibition 30: Pulse frequency input (only valid for X6) 31: Reserved 32: Immediate DC braking 33: Normally closed input for external fault 34: Frequency modification enable 35: Reverse the action direction of PID	1	★
P4-01	Function Selection for X2 Terminal			4	★
P4-02	Function Selection for X3 Terminal			9	★
P4-03	Function Selection for X4 Terminal			12	★
P4-04	Function Selection for X5 Terminal			13	★
P4-05	Function Selection for X6 Terminal			0	★
P4-06	Function Selection for X7 Terminal			0	★

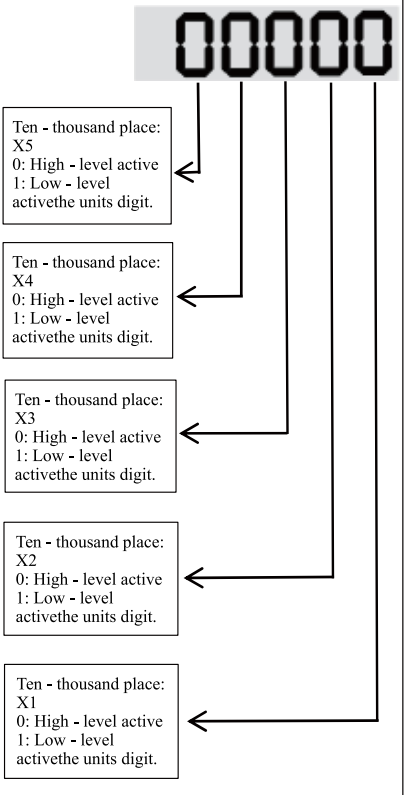
FunctionCode	Name	Setting Range		Factory Default	Change
P4-07	Function Selection for X8 Terminal	8: Free stop 9: Fault reset (RESET) 10: Operation pause 11: Normally open input for external fault 12: Multi - segment command terminal 1 13: Multi - segment command terminal 2 14: Multi - segment command terminal 3 15: Multi - segment command terminal 4 16: Acceleration/deceleration time selection terminal 1 17: Acceleration/deceleration time selection terminal 2 18: Frequency command switching 19: UP/DOWN setting clear (terminal, keyboard) 20: Control command switching terminal 1 21: Acceleration/deceleration prohibition 22: PID pause 23: Simple PLC status reset 24: Swing frequency pause 25: Counter input	36: External stop terminal 1 37: Control command switching terminal 2 38: PID integral pause 39: Switch between main frequency and preset frequency 40: Switch between auxiliary frequency and preset frequency 41: Motor terminal selection function 42: Reserved 43: PID parameter switching 44: User - defined fault 1 45: User - defined fault 2 46: Speed control / torque control switching 47: Emergency stop 48: External stop terminal 2 49: Deceleration DC braking 50: Clear the running time of this operation 51: Two - wire / three - wire switching 52: Reverse frequency prohibition 53 - 59: Reserved	0	★
P4-08	Function Selection for X9 Terminal			0	★
P4-09	Function Selection for X10 Terminal			0	★

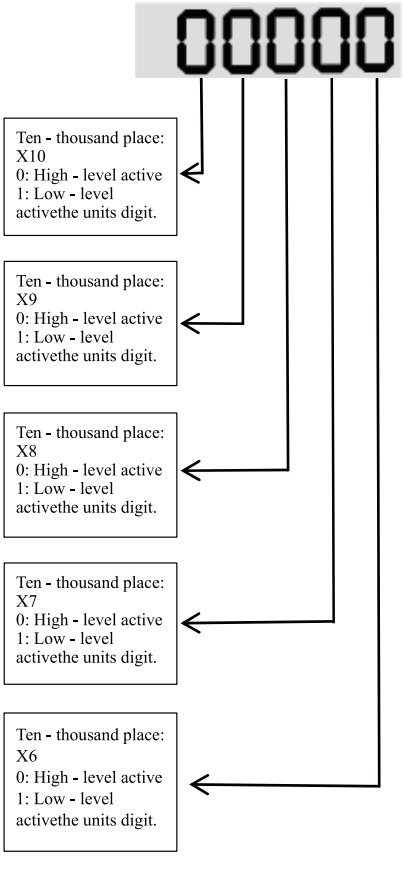
FunctionCode	Name	Setting Range		Factory Default	Change
P4-10	DI (Digital Input) filtering time	0.000s~1.000s		0.010s	☆
P4-11	Terminal command mode	0: Two - wire mode 1 1: Two - wire mode 2	2: Three - wire mode 1 3: Three - wire mode 2	0	★
P4-12	Terminal UP/DOWN change rate	0.001Hz/s~65.535Hz/s		1.00Hz/s	☆
P4-13	AI curve 1 minimum input	0.00V~P4-15		0.00V	☆
P4-14	Setting corresponding to AI curve 1 minimum input	-100.0%~+100.0%		0.0%	☆
P4-15	AI curve 1 maximum input	P4-13~+10.00V		10.00V	☆
P4-16	Setting corresponding to AI curve 1 maximum input	-100.0%~+100.0%		100.0%	☆
P4-17	All filtering time	0.00s~10.00s		0.10s	☆
P4-18	AI curve 2 minimum input	0.00V~P4-20		0.00V	☆
P4-19	Setting corresponding to AI curve 2 minimum input	-100.0%~+100.0%		0.0%	☆
P4-20	AI curve 2 maximum input	P4-18~+10.00V		10.00V	☆
P4-21	Setting corresponding to AI curve 2 maximum input	-100.0%~+100.0%		100.0%	☆
P4-22	Al2 filtering time	0.00s~10.00s		0.10s	☆
P4-23	AI curve 3 minimum input	-10.00V~P4-25		-10.00V	☆
P4-24	Setting corresponding to AI curve 3 minimum input	-100.0%~+100.0%		-100.0%	☆
P4-25	AI curve 3 maximum input	P4-23~+10.00V		10.00V	☆

FunctionCode	Name	Setting Range	Factory Default	Change
P4-26	Setting corresponding to AI curve 3 maximum input	-100.0%~+100.0%	100.0%	☆
P4-27	—	—	—	—
P4-28	Pulse input minimum frequency	0.00kHz~P4-30	0.00kHz	☆
P4-29	Setting corresponding to pulse minimum input frequency	-100.0%~100.0%	0.0%	☆
P4-30	Pulse maximum input frequency	P4-28~100.00kHz	50.00kHz	☆
P4-31	Setting corresponding to the pulse maximum input frequency	-100.0%~100.0%	100.0%	☆
P4-32	Pulse filtering time	0.00s～10.00s	0.10s	☆

FunctionCode	Name	Setting Range	Factory Default	Change
P4-33	AI curve selection		321	☆

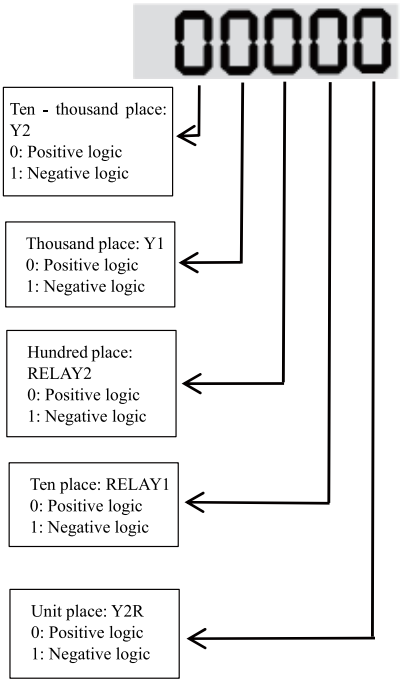
FunctionCode	Name	Setting Range	Factory Default	Change
P4-34	Selection for AI below the minimum input setting		000	☆
P4-35	X1 Delay Time	0.0s～3600.0s	0.0s	★
P4-36	X2 Delay Time	0.0s~3600.0s	0.0s	★
P4-37	X3 Delay Time	0.0s~3600.0s	0.0s	★

FunctionCode	Name	Setting Range	Factory Default	Change
P4-38	X terminal effective mode selection 1		00000	★

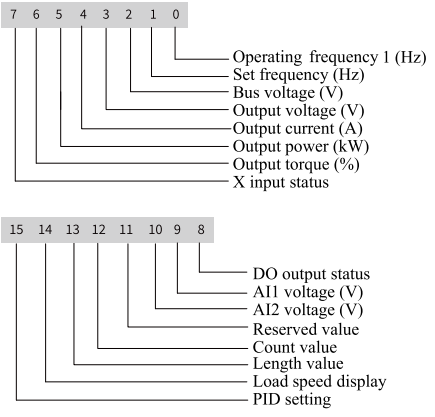
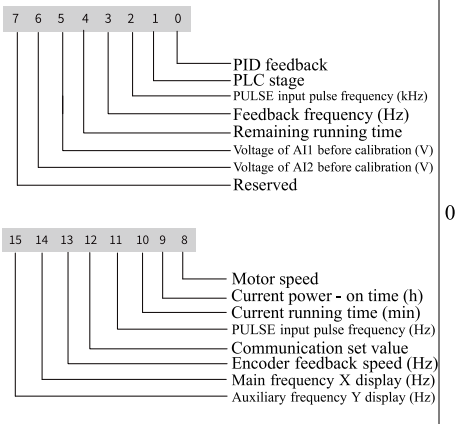
FunctionCode	Name	Setting Range		Factory Default	Change
P4-39	X terminal effective mode selection 2			00000	★
P5-00	Y2 Terminal Output Mode Selection	0: Pulse output (Y2P)	1: Digital quantity output (Y2R)	0	☆

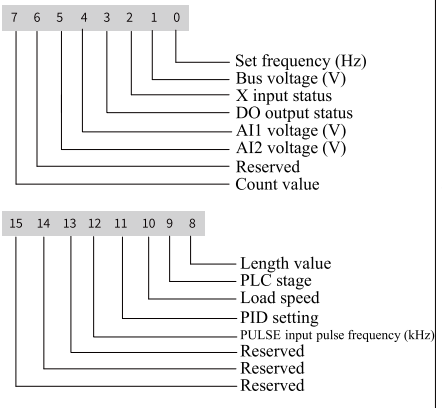
FunctionCode	Name	Setting Range		Factory Default	Change
Group P5: Output Terminals					
P5-01	Y2R Function Selection (Open - Collector Output Terminal)	0: No output 1: Inverter is running 2: Fault output (fault for free stop) 3: Frequency level detection 1 4: Frequency reached 5: Running at zero speed (no output when stopped) 6: Motor overload pre - alarm 7: Inverter overload pre - alarm 8: Set count value reached 9: Specified count value reached 10: Length reached 11: Simple PLC cycle completed 12: Accumulated running time reached 13: Frequency is being limited 14: Torque is being limited 15: Ready to run 16: AI1 > AI2 17: Upper limit frequency reached 18: Lower limit frequency reached (no output when stopped) 19: Under - voltage state 20: Communication setting	21 - 22: Reserved 23: Running at zero speed 2 (output even when stopped) 24: Accumulated power - on time reached 25: Frequency level detection 2 26: Frequency 1 reached 27: Frequency 2 reached 28: Current 1 reached 29: Current 2 reached 30: Timing completed 31: AI1 input out of limit 32: Unloading in progress 33: Running in reverse 34: Zero - current state 35: Module temperature reached 36: Output current out of limit 37: Lower limit frequency reached (output even when stopped) 38: Alarm (all faults) 39: Motor over - temperature 40: This running time reached 41: Fault (fault for free stop and no output for under - voltage)	0	☆
P5-02	Control Board Relay 1 Function Selection (1RA - 1RB - 1RC)			2	☆
P5-03	Relay 2 Output Function Selection (2RA - 2RB - 2RC)			0	☆
P5-04	Y1 Output Function Selection			1	☆

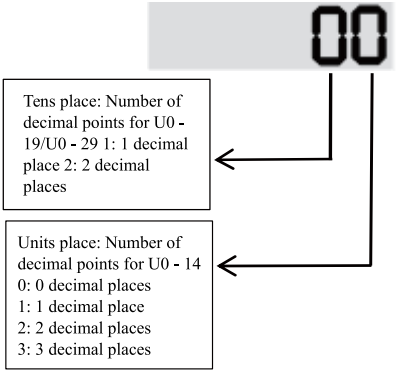
FunctionCode	Name	Setting Range		Factory Default	Change
P5-06	Y2P Output Function Selection	1: Set frequency 2: Output current 3: Motor output torque (absolute value, percentage relative to the motor) 4: Output power 5: Output voltage 6: Pulse input (100.0% corresponds to 100.0kHz) 7: AI1 8: AI2 9: AI3 (expansion card)	10: Length 11: Count value 12: Communication setting 13: Motor speed 14: Output current (100.0% corresponds to 1000.0A) 15: Output voltage (100.0% corresponds to 1000.0V) 16: Motor output torque (actual value, percentage relative to the motor)	0	☆
P5-07	AO1 Output Function Selection			0	☆
P5-08	AO2 Output Function Selection			1	☆
P5-09	Y2P Output Maximum Frequency	0.01kHz~100.00kHz		50.00kHz	☆
P5-10	AO1 Zero - bias Coefficient	-100.0%~+100.0%		0.0%	☆
P5-11	AO1 Gain	-10.00~+10.00		1.00	☆
P5-12	AO2 Zero - bias Coefficient	-100.0%~+100.0%		0.0%	☆
P5-13	AO2 Gain	-10.00~+10.00		1.00	☆
P5-17	Y2R Output Delay Time	0.0s~3600.0s		0.0s	☆
P5-18	RELAY1 Output Delay Time	0.0s~3600.0s		0.0s	☆
P5-19	RELAY2 Output Delay Time	0.0s~3600.0s		0.0s	☆
P5-20	Y1 Output Delay Time	0.0s~3600.0s		0.0s	☆
P5-21	Y2 Output Delay Time	0.0s~3600.0s		0.0s	☆

FunctionCode	Name	Setting Range	Factory Default	Change
P5-22	Effective State Selection for DO Output Terminals		00000	☆

FunctionCode	Name	Setting Range		Factory Default	Change
Group P6: Start - Stop Control					
P6-00	Starting method	0：Direct start		0	☆
P6-03	Starting frequency	0.00Hz~10.00Hz		0.00Hz	☆
P6-04	Starting frequency holding time	0.0s~100.0s		0.0s	★
P6-07	Acceleration and deceleration mode	0: Linear acceleration and deceleration 1: Static S - curve acceleration and deceleration	2: Dynamic S - curve acceleration and deceleration	0	★
P6-08	Time proportion of the starting section of the S - curve	0.0%~(100.0%-P6-09)		30.0%	★
P6-09	Time proportion of the ending section of the S - curve	0.0%~(100.0%-P6-08)		30.0%	★
P6-10	Shutdown Method	0: Decelerated Shutdown	1: Free Shutdown	0	☆
P6-15	Braking usage rate	0%~100%		100%	☆
Group P7: Keyboard and Display					
P7-01	JOG Key Function Selection	0: JOG is invalid 1: Switch between the operation panel command channel and the remote command channel (terminal command channel or communication command channel)	2: Forward and reverse rotation switching 3: Forward jogging 4: Reverse jogging	0	★
P7-02	Function of STOP/RESET key	0: The STOP/RES key's shutdown function is only valid in the keyboard operation mode. 1: The STOP/RES key's shutdown function is valid in any operation mode.		1	☆

FunctionCode	Name	Setting Range	Factory Default	Change
P7-03	Operating display parameter 1	0000~FFFF 	1F	☆
P7 - 04	Operating display parameter 2	0000~FFFF 	0	☆

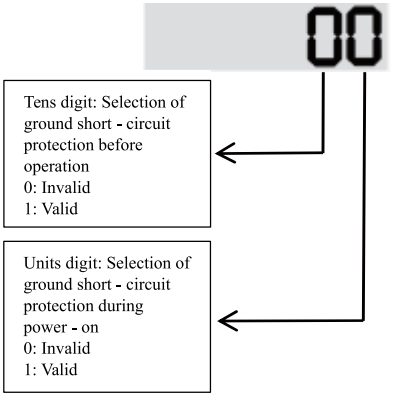
FunctionCode	Name	Setting Range	Factory Default	Change
P7-05	Shutdown display parameters	0000~FFFF 	0	☆
P7-06	Load speed display coefficient	0.0001~6.5000	1.0000	☆
P7-07	Inverter module heat sink temperature	-20℃~120℃	-	●
P7-08	Rectifier bridge heat sink temperature	0℃~999℃	-	●
P7-09	Accumulated running time	0h~65535h	-	●
P7-10	Performance version number	-	-	●
P7-11	Software version	-	-	●

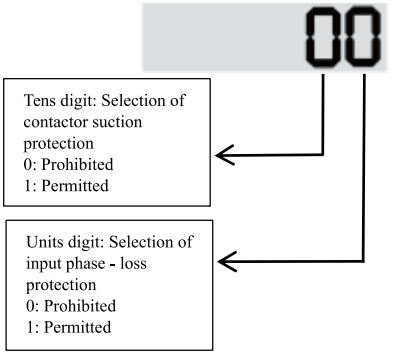
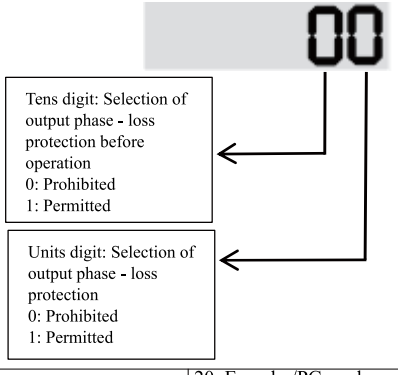
FunctionCode	Name	Setting Range	Factory Default	Change
P7 - 12	Decimal places for load speed display		21	☆
P7-13	Accumulated power - on time Accumulated power consumption	0~65535H	-	●
P7-14	Accumulated power - on time Accumulated power consumption	0~65535kWh	-	●
Group P8 Auxiliary functions				
P8-00	Jog running frequency	0.00Hz~Maximum frequency	2.00Hz	☆
P8-01	Jog acceleration time	0.0s~6500.0s	20.0s	☆
P8-02	Jog deceleration time	0.0s~6500.0s	20.0s	☆
P8-03	Acceleration time 2	0.0s~6500.0s	Determination of machine type	☆
P8-04	Deceleration time 2	0.0s~6500.0s	Determination of machine type	☆
P8-05	Acceleration time 3	0.0s~6500.0s	Determination of machine type	☆
P8-06	Deceleration time 3	0.0s~6500.0s	Determination of machine type	☆
P8-07	Acceleration time 4	0.0s~6500.0s	0.0s	☆
P8-08	Deceleration time 4	0.0s~6500.0s	0.0s	☆

FunctionCode	Name	Setting Range		Factory Default	Change
P8-09	Skip frequency 1	0.00Hz~Maximum frequency		0.00Hz	☆
P8-10	Skip frequency 2	0.00Hz~Maximum frequency		0.00Hz	☆
P8-11	Skip frequency amplitude	0.00Hz~Maximum frequency		0.00Hz	☆
P8-12	Forward and reverse dead - zone time	0.0s~3000.0s		0.0s	☆
P8-13	Reverse frequency prohibited	0: Invalid	1: Valid	0	☆
P8-14	Operation mode when the set frequency is lower than the lower limit frequency	0: Operate at the lower limit frequency	1: Stop operation 2: Operate at zero speed	0	☆
P8-15	Droop rate	0.00%~100.00%		0.00%	☆
P8-16	Set the cumulative power - on arrival time	0h~65000h		0h	☆
P8-17	Set the cumulative running arrival time	0h~65000h		0h	☆
P8-18	Startup protection selection	0: No protection	1: Protection	0	☆
P8-19	Frequency detection value 1	0.00Hz~Maximum frequency		50.00Hz	☆
P8-20	Frequency detection hysteresis rate 1	0.0%~100.0% (FDT1 level)		5.0%	☆
P8-21	Frequency arrival detection amplitude	0.0%~100.0% (Maximum frequency)		0.0%	☆
P8-22	Whether skip frequencies are effective during acceleration and deceleration	0: Invalid	1: Valid	0	☆

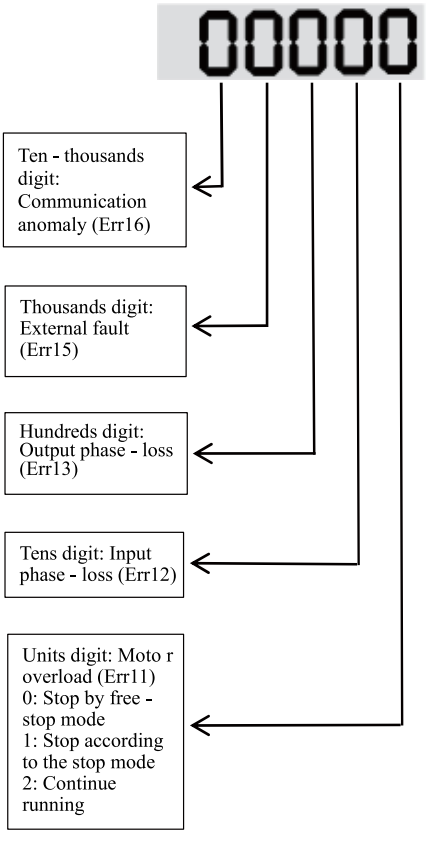
FunctionCode	Name	Setting Range		Factory Default	Change
P8-25	Switching between acceleration time 1 and acceleration time 2 Frequency point Switching between deceleration time 1 and deceleration time 2 Frequency point	0.00Hz~Maximum frequency		0.00Hz	☆
P8-26	Switching between acceleration time 1 and acceleration time 2 Frequency point Switching between deceleration time 1 and deceleration time 2 Frequency point	0.00Hz~Maximum frequency		0.00Hz	☆
P8-27	Terminal jog priority	0: Invalid	1: Valid	0	☆
P8-28	Frequency detection value 2	0.00Hz~Maximum frequency		50.00Hz	☆
P8-29	Frequency detection hysteresis rate 2	0.0%~100.0% (FDT2 level)		5.0%	☆
P8-30	Arbitrary arrival frequency detection value 1	0.00Hz~Maximum frequency		50.00Hz	☆
P8-31	Arbitrary arrival frequency detection amplitude 1	0.0%~100.0% (Maximum frequency)		0.0%	☆
P8-32	Arbitrary arrival frequency detection value 2	0.00Hz~Maximum frequency		50.00Hz	☆
P8-33	Arbitrary arrival frequency detection amplitude 2	0.0%~100.0% (Maximum frequency)		0.0%	☆
P8-34	Zero - current detection level	0.0%~300.0%(100.0% Corresponding to the rated current of the motor)		5.0%	☆
P8-35	Zero - current detection delay time	0.01s~600.00s		0.10s	☆

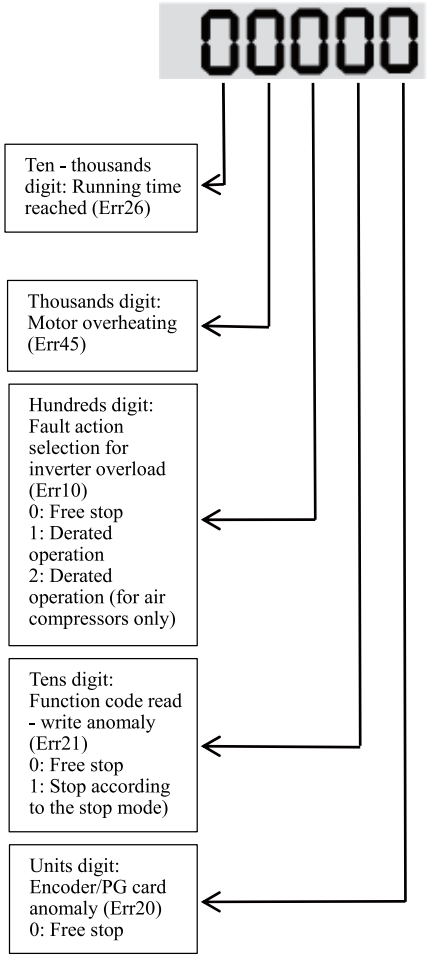
Function Code	Name	Setting Range		Factory Default	Change
P8-36	Output current over - limit value	0.0% (Do not detect)	0.1%~300.0% (Rated current of the motor)	200.0%	☆
P8-37	Output current over - limit detection delay time	0.00s~600.00s		0.00s	☆
P8-38	Arbitrary arrival current 1	0.0%~300.0%(Rated current of the motor)		100.0%	☆
P8-39	Arbitrary arrival current 1 amplitude	0.0%~300.0%(Rated current of the motor)		0.0%	☆
P8-40	Arbitrary arrival current 2	0.0%~300.0%(Rated current of the motor)		100.0%	☆
P8-41	Arbitrary arrival current 2 amplitude	0.0%~300.0%(Rated current of the motor)		0.0%	☆
P8-42	Timing function selection	0: Invalid. 1: Valid.		0	★
P8-43	Timed operation time selection	0: Setting of P8 - 44 1: AI1 2: AI2	3: Keyboard potentiometer The analog input range corresponds to P8-44	0	★
P8-44	Timed operation time	0.0min~6500.0min		0.0min	★
P8-45	Lower limit of AI1 input voltage protection value	0.00V~P8-46		3.10V	☆
P8-46	Upper limit of AII input voltage protection value	P8-45~10.00V		6.80V	☆
P8-47	Module temperature reached	0℃~100℃		75℃	☆
P8-48	Cooling fan control	0: The fan runs during operation.	1: The fan runs continuously.	0	☆
P8-49	Wake - up frequency	Sleep frequency (P8 - 51) ~ Maximum frequency (P0 - 10)		0.00Hz	☆
P8-50	Wake - up delay time	0.0s~6500.0s		0.0s	☆
P8-51	Sleep frequency	0.00Hz~Wake - up frequency (P8-49)		0.00Hz	☆
P8-52	Sleep delay time	0.0s~6500.0s		0.0s	☆
P8-53	Time of arrival for this run	0.0~6500.0min		0.0min	☆
P8-54	Output power correction factor	0.00%~200.0%		100.0%	☆
P8-57	Current correction factor	95%~100%		100%	☆

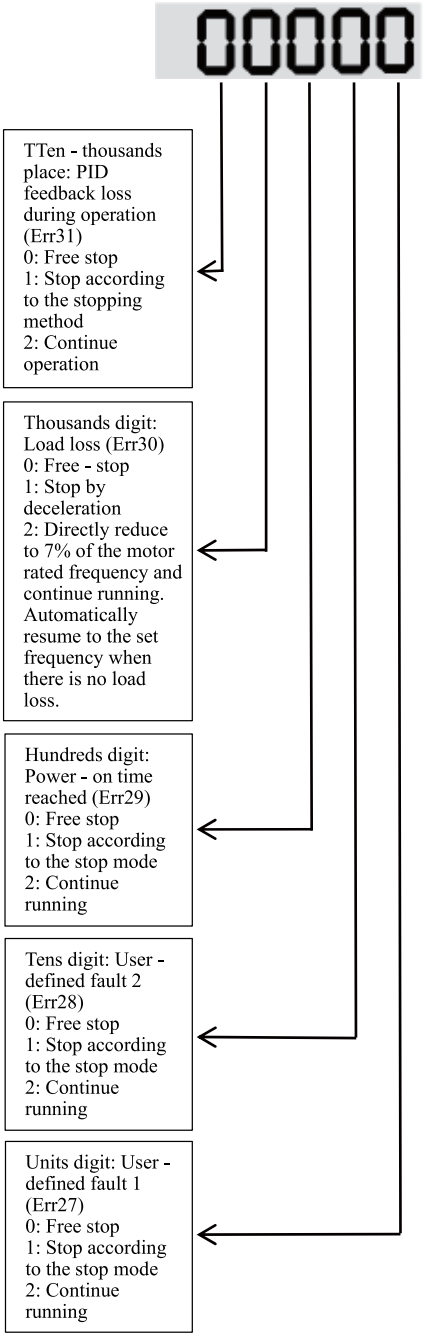
Function Code	Name	Setting Range		Factory Default	Change
Group F9: Faults and Protections					
P9-00	Selection of motor overload protection	0: Prohibited	1: Permitted	1	☆
P9-01	Gain of motor overload protection	0.20~10.00		1.00	☆
P9-02	Early warning coefficient of motor overload	50%~100%		80%	☆
P9-03	Over - voltage stall gain	0~100		30	☆
P9-04	Over - voltage stall protection voltage	650V~800V		770V	☆
P9-07	Selection of ground short - circuit protection			01	☆
P9-08	Starting voltage for the braking unit to operate	650V~800V		690V	★
P9-09	Number of automatic fault reset times	0~20		0	☆
P9-10	Selection of fault DO action during automatic fault reset	0: No action 1: Action		0	☆
P9-11	Waiting time for automatic fault reset	0.1s~100.0s		1.0s	☆

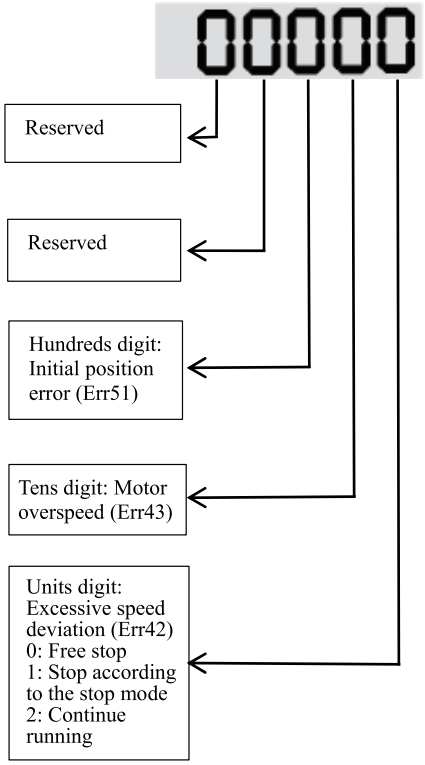
Function Code	Name	Setting Range	Factory Default	Change
P9-12	Selection of input phase - loss/contactor suction protection		11	☆
P9-13	Output phase - loss protection selection		01	☆
P9-14	First fault type	0: No fault 1: Reserved 2: Over - current during acceleration 3: Over - current during deceleration 4: Over - current at constant speed 5: Over - voltage during acceleration 6: Over - voltage during deceleration 7: Over - voltage at constant speed 8: Buffer resistor overload 9: Under - voltage 10: Inverter overload 11: Motor overload 12: Input phase - loss 13: Output phase - loss 14: Module overheating 15: External fault 16: Communication anomaly 17: Contactor anomaly 18: Current detection anomaly 19: Motor tuning anomaly 20: Encoder/PG card anomaly 21: Parameter read - write anomaly 22: Inverter hardware anomaly 23: Motor short - circuit to ground 24: Reserved 25: Reserved 26: Running time reached 27: User - defined fault 1 28: User - defined fault 2 29: Power - on time reached 30: Load loss 31: PID feedback loss during operation 40: Fast current - limiting timeout 41: Motor switching during operation 42: Excessive speed deviation 43: Motor overspeed 45: Motor over - temperature 51: Initial position error 55: Slave unit fault in master - slave control	-	●
P9-15	Second fault type		-	●
P9-16	Third (most recent) fault type		-	●

Function Code	Name	Setting Range	Factory Default	Change
P9-17	Frequency at the third (most recent) fault	-	-	●
P9-18	Current at the third (most recent) fault	-	-	●
P9-19	Bus voltage at the third (most recent) fault	-	-	●
P9-20	Input terminal status at the third (most recent) fault	-	-	●
P9-21	Output terminal status at the third (most recent) fault	-	-	●
P9-22	Inverter status at the third (most recent) fault	-	-	●
P9-23	Power - on time at the third (most recent) fault	-	-	●
P9-24	Running time at the third (most recent) fault	-	-	●
P9-25	Back - electromotive force at the third (most recent) fault	-	-	●
P9-27	Frequency at the second fault	-	-	●
P9-28	Current at the second fault	-	-	●
P9-29	Bus voltage at the second fault	-	-	●
P9-30	Input terminal status at the second fault	-	-	●
P9-31	Output terminal status at the second fault	-	-	●
P9-32	Inverter status at the second fault	-	-	●
P9-33	Power - on time at the second fault	-	-	●
P9-34	Running time at the second fault	-	-	●
P9-35	Back - electromotive force at the second fault	-	-	●
P9-37	Frequency at the first fault	-	-	●
P9-38	Current at the first fault	-	-	●
P9-39	Bus voltage at the first fault	-	-	●
P9-40	Input terminal status at the first fault	-	-	●
P9-41	Output terminal status at the first fault	-	-	●
P9-42	Inverter status at the first fault	-	-	●
P9-43	Power - on time at the first fault	-	-	●
P9-44	Running time at the first fault	-	-	●
P9-45	Back - electromotive force at the first fault	-	-	●

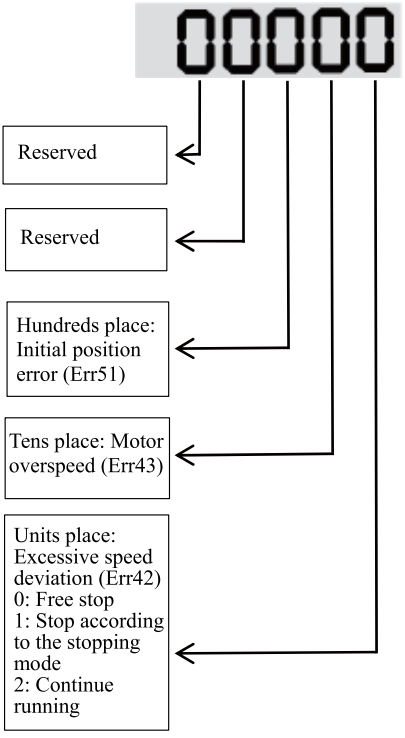
FunctionCode	Name	Setting Range	Factory Default	Change
P9-47	Fault protection action selection 1		00000	☆

FunctionCode	Name	Setting Range	Factory Default	Change
P9-48	Fault protection action selection 2		00000	☆

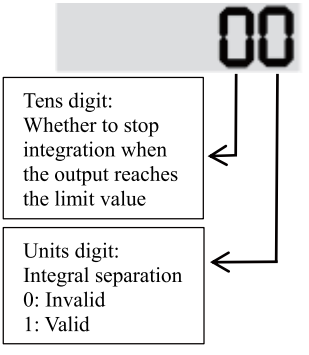
FunctionCode	Name	Setting Range	Factory Default	Change
P9-49	Fault protection action selection 3		00000	☆

Function Code	Name	Setting Range	Factory Default	Change
P9-50	Fault protection action selection 4		00000	☆
P9-54	Frequency selection for continued operation during a fault	0: Run at the current operating frequency 1: Run at the set frequency 2: Run at the upper - limit frequency 3: Run at the lower - limit frequency 4: Run at the abnormal standby frequency	0	☆
P9-55	Abnormal standby frequency	0.0% - 100.0% (100.0% corresponds to the maximum frequency P0 - 10)	100.0%	☆
P9-56	-	-	-	-
P9-57	-	-	-	-
P9-58	-	-	-	-
P9-59	Function selection for non - stop during momentary power interruption	0: Invalid 1: Bus voltage constant control 2: Decelerate to stop	0	★

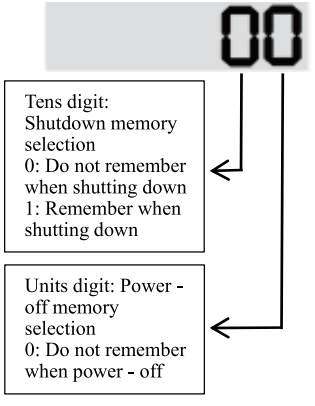
Function Code	Name	Setting Range		Factory Default	Change
P9-60	Recovery voltage for non - stop during momentary power interruption	80%~100%		85%	★
P9-61	Judgment time for voltage recovery in case of non - stop during momentary power interruption	0.0~100.0s		0.5S	★
P9-62	Operating voltage for non - stop during momentary power interruption	60%~100%		80%	★
P9-63	Load loss protection selection	0: Invalid	1: Valid	0	☆
P9-64	Load loss detection level	0.0~100.0%		10.0%	☆
P9-65	Load loss detection time	0.0~60.0s		1.0s	☆
P9-67	Overspeed detection value	0.0%~50.0%(Maximum frequency)		20.0%	☆
P9-68	Overspeed detection time	0.01~0.600s		0.010s	☆
P9-69	Excessive speed deviation detection value	0.0%~50.0%(Maximum frequency)		20.0%	☆
P9-70	Detection time for excessive speed deviation	0.0s: No detection	0.1~60.0s	5.0s	☆
P9-71	Gain Kp for non - stop during momentary power interruption	0~100		40	☆
P9-72	Integral coefficient Ki for non - stop during momentary power interruption	0~100		30	☆
P9-73	Deceleration time for non - stop operation during momentary power interruption	0~300.0s		20.0s	★
P9-74	Enable for UVW encoder fault (Err20)	0.1		1	☆

Function Code	Name	Setting Range		Factory Default	Change
P9-75	Fault protection action selection 5			11	☆
PA group PID function					
PA-00	PID setting source	0: Set by FA - 01 1: AIl 2: AI2 3: Keyboard potentiometer	4: Pulse setting (X6) 5: Communication setting 6: Multi - segment command setting 0	0	☆
PA-01	PID numerical setting	0.0%~100.0%		50.0%	☆
PA-02	PID feedback source	0: AIl 1: AI2 2：Keyboard potentiometer 3: Al1-Al2 4: Pulse setting (X6)	5：Communication - based setting 6: AI1+AI2 7: MAX(|Al1|,|AI2|) 8: MIN(|AI1|,|AI2|)	0	☆
PA-03	PID action direction	0: Direct acting	1: Reverse acting	0	☆

Function Code	Name	Setting Range		Factory Default	Change
PA-04	PID set and feedback range	0~65535		1000	☆
PA-05	Proportional gain KP1	0.0~1000.0		20.0	☆
PA-06	Integral time TI1	0.01s~10.00s		2.00s	☆
PA-07	Derivative time TD1	0.000s~10.000s		0.000s	☆
PA-08	PID reverse cut - off frequency	0.00~Large frequency		0.00Hz	★
PA-09	PID deviation limit	0.0%~100.0%		0.0%	☆
PA-10	PID derivative amplitude limit	0.00%~100.00%		0.10%	☆
PA-11	PID set change time	0.00~650.00s		0.00s	☆
PA-12	PID feedback filter time	0.00~60.00s		0.00s	☆
PA-13	PID output filter time	0.00~60.00s		0.00s	☆
PA-14	Reserved	—			☆
PA-15	Proportional gain KP2	0.0~1000.0		20.0	☆
PA-16	Integral time TI2	0.01s~10.00s		2.00s	☆
PA-17	Derivative time TD2	0.000s~10.000s		0.000s	☆
PA-18	PID parameter switching conditions	0: No switching 1: Switch via X terminal	2: Automatically switch according to deviation 3: Automatically switch according to operating frequency	0	☆
PA-19	PID parameter switching deviation 1	0.0%~PA-20		20.0%	☆
PA-20	PID parameter switching deviation 2	PA-19~100.0%		80.0%	☆
PA-21	PID initial value	0.0%~100.0%		0.0%	☆
PA-22	PID initial value holding time	0.00~650.00s		0.00s	☆
PA-23	Reserved	—		—	—
PA-24	Reserved	—		—	—

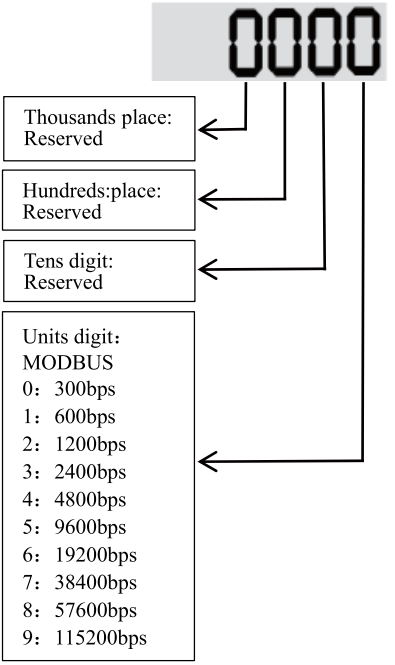
Function Code	Name	Setting Range		Factory Default	Change
PA-25	PID integral property			00	☆
PA-26	PID feedback loss detection value	0.0%：Do not judge feedback loss	0.1%~100.0%	0.0%	☆
PA-27	PID feedback loss detection time	0.0s~20.0s		0.0s	☆
PA-28	PID shutdown operation	0:Do not calculate when stopping	1:Calculate when stopping	0	☆
Group PB:Frequency oscillation,fixed length and counting					
PB-00	Frequency oscillation setting method	0:Relative to the center frequency	1:Relative to the maximum frequency	0	☆
PB-01	Frequency oscillation amplitude	0.0%~100.0%		0.0%	☆
PB-02	Sudden jump frequency amplitude	0.0%~50.0%		0.0%	☆
PB-03	Frequency oscillation period	0.1s~3000.0s		10.0S	☆
PB-04	Rise time of frequency oscillation triangular wave	0.1%~100.0%		50.0%	☆
PB-05	Set length	0m~65535m		1000m	☆
PB-06	Actual length	0m~65535m		0m	☆
PB-07	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	☆
Function Code	Name	Setting Range		Factory Default	Change
Group PC:Multi-segment commands,simple PLC					
PC-00	Multi-segment instruction 0	-100.0%~100.0%		0.0%	☆

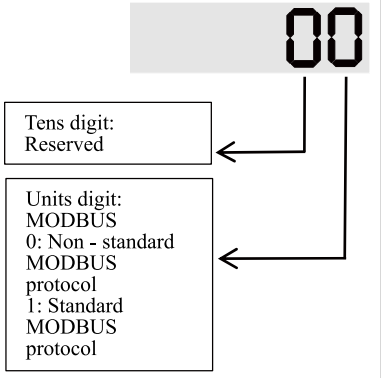
Function Code	Name	Setting Range		Factory Default	Change
PC-01	Multi-segment instruction 1	-100.0%~100.0%		0.0%	☆
PC-02	Multi-segment instruction 2	-100.0%~100.0%		0.0%	☆
PC-03	Multi-segment instruction 3	-100.0%~100.0%		0.0%	☆
PC-04	Multi-segment instruction 4	-100.0%~100.0%		0.0%	☆
PC-05	Multi-segment instruction 5	-100.0%~100.0%		0.0%	☆
PC-06	Multi-segment instruction 6	-100.0%~100.0%		0.0%	☆
PC-07	Multi-segment instruction 7	-100.0%~100.0%		0.0%	☆
PC-09	Multi-segment instruction 9	-100.0%~100.0%		0.0%	☆
PC-10	Multi-segment instruction 10	-100.0%~100.0%		0.0%	☆
PC-11	Multi-segment instruction 11	-100.0%~100.0%		0.0%	☆
PC-12	Multi-segment instruction 12	-100.0%~100.0%		0.0%	☆
PC-13	Multi-segment instruction 13	-100.0%~100.0%		0.0%	☆
PC-14	Multi-segment instruction 14	-100.0%~100.0%		0.0%	☆
PC-15	Multi-segment instruction 15	-100.0%~100.0%		0.0%	☆
PC-16	Operating mode of simple PLC	0:Stop when a single run ends 1:Maintain the final value when a single run ends	2：Keep looping	0	☆

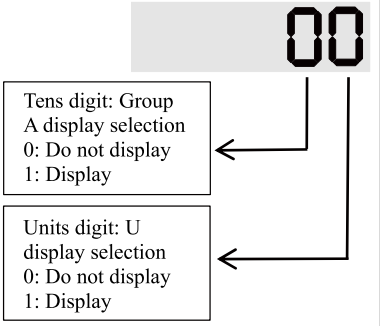
Function Code	Name	Setting Range	Factory Default	Change
PC-17	Power-off Memory Selection for Simple PLC		00	☆
PC-18	Operation time of the 0th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-19	Acceleration and deceleration time selection of the 0th segment of simple PLC	0~3	0	☆
PC-20	Operation time of the 1st segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-21	Acceleration and deceleration time selection of the 1st segment of simple PLC	0~3	0	☆
PC-22	Operation time of the 2nd segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-23	Acceleration and deceleration time selection of the 2nd segment of simple PLC	0~3	0	☆
PC-24	Operation time of the 3rd segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-25	Acceleration and deceleration time selection of the 3rd segment of simple PLC	0~3	0	☆
PC-26	Operation time of the 4th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆

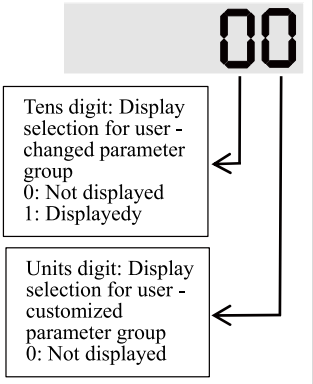
Function Code	Name	Setting Range	Factory Default	Change
PC-27	Acceleration and deceleration time selection of the 4th segment of simple PLC	0~3	0	☆
PC-28	Operation time of the 5th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-29	Acceleration and deceleration time selection of the 5th segment of simple PLC	0~3	0	☆
PC-30	Operation time of the 6th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-31	Acceleration and deceleration time selection of the 6th segment of simple PLC	0~3	0	☆
PC-32	Operation time of the 7th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-33	Acceleration and deceleration time selection of the 7th segment of simple PLC	0~3	0	☆
PC-34	Operation time of the 8th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-35	Acceleration and deceleration time selection of the 8th segment of simple PLC	0~3	0	☆
PC-36	Operation time of the 9th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-37	Acceleration and deceleration time selection of the 9th segment of simple PLC	0~3	0	☆
PC-38	Operation time of the 10th segment of simple PLC	0.0s(h)~6553.5s(h)	0.0s(h)	☆
PC-39	Acceleration and deceleration time selection of the 10th segment of simple PLC	0~3	0	☆

Function Code	Name	Setting Range		Factory Default	Change
PC-40	Operation time of the 11th segment of simple PLC	0.0s(h)~6553.5s(h)		0.0s(h)	☆
PC-41	Acceleration and deceleration time selection of the 11th segment of simple PLC	0~3		0	☆
PC-42	Operation time of the 12th segment of simple PLC	0.0s(h)~6553.5s(h)		0.0s(h)	☆
PC-43	Acceleration and deceleration time selection of the 12th segment of simple PLC	0~3		0	☆
PC-44	Operation time of the 13th segment of simple PLC	0.0s(h)~6553.5s(h)		0.0s(h)	☆
PC-45	Acceleration and deceleration time selection of the 13th segment of simple PLC	0~3		0	☆
PC-46	Operation time of the 14th segment of simple PLC	0.0s(h)~6553.5s(h)		0.0s(h)	☆
PC-47	Acceleration and deceleration time selection for the 14th segment of the simple PLC	0~3		0	☆
PC-48	Operation time of the 15th segment of the simple PLC	0.0s(h)~6553.5s(h)		0.0s(h)	☆
PC-49	Acceleration and deceleration time selection for the 15th segment of the simple PLC	0~3		0	☆
PC-50	Operating time unit of simple PLC	0: s	1: h	0	☆
PC-51	Given method of multi - segment instruction 0	0: Given by function code PC - 00 1: All 2: Al2 3: Keyboard potentiometer	4: Pulse 5: PID 6: Given by preset frequency (P0 - 08), modifiable by UP/DOWN	0	☆

Function Code	Name	Setting Range	Factory Default	Change
PD group communication parameters				
PD-00	Communication baud rate		5005	☆
PD-01	MODBUS data format	0: No parity (8 - N - 2) 1: Even parity (8 - E - 1) 2: Odd parity (8 - O - 1) 3: No parity (8 - N - 1) (Valid for MODBUS)	0	☆
PD-02	Local machine address	0: Broadcast address 1~247 (Valid for MODBUS, Profibus - DP, CANlink)	1	☆
PD-03	MODBUS response delay	0~20ms (Valid for MODBUS)	2	☆
PD-04	Serial port communication timeout	0.0: Invalid 0.1 - 60.0s	0.0	☆

Function Code	Name	Setting Range		Factory Default	Change
PD-05	Data transmission format selection			31	☆
PD-06	Communication reading current resolution	0: 0.01A (Valid when ≤55kW)	1: 0.1A	0	☆
PD-08	—	—		—	—
PE group: User - customized function codes					
PE-00	User Function Code 0	P0-00~PP-xx A0-00~ Ax-xx U0-00~U0-xx U3-00~U3-xx		U3-17	☆
PE-01	User Function Code 1			U3-18	☆
PE-02	User Function Code 2			P0.00	☆
PE-03	User Function Code 3			P0.00	☆
PE-04	User Function Code 4			P0.00	☆
PE-05	User Function Code 5			P0.00	☆
PE-06	User Function Code 6			P0.00	☆
PE-07	User Function Code 7			P0.00	☆
PE-08	User Function Code 8			P0.00	☆
PE-09	User Function Code 9			P0.00	☆
PE-10	User Function Code 10			P0.00	☆
PE-11	User Function Code 11			P0.00	☆
PE-12	User Function Code 12			P0.00	☆
PE-13	User Function Code 13			P0.00	☆
PE-14	User Function Code 14			P0.00	☆
PE-15	User Function Code 15			P0.00	☆

Function Code	Name	Setting Range	Factory Default	Change
PE-16	User Function Code 16	P0-00~PP-xx A0-00~ Ax-xx U0-00~U0-xx U3-00~U3-xx	P0.00	☆
PE-17	User Function Code 17		P0.00	☆
PE-18	User Function Code 18		P0.00	☆
PE-19	User Function Code 19		P0.00	☆
PE-20	User Function Code 20		U0-68	☆
PE-21	User Function Code 21		U0-69	☆
PE-22	User Function Code 22		P0.00	☆
PE-23	User Function Code 23		P0.00	☆
PE-24	User Function Code 24		P0.00	☆
PE-25	User Function Code 25		P0.00	☆
PE-26	User Function Code 26		P0.00	☆
PE-27	User Function Code 27		P0.00	☆
PE-28	User Function Code 28		P0.00	☆
PE-29	User Function Code 29		P0.00	☆
PP group: Function code management				
PP-00	User password	0~65535	0	☆
PP-01	Parameter initialization	0: No operation 01: Restore factory parameters, excluding motor parameters 02: Clear recorded information 03: Restore factory parameters, including motor parameters	0	★
PP-02	Function parameter group display selection		11	★

Function Code	Name	Setting Range		Factory Default	Change
PP-03	Personalized parameter group display selection			00	☆
PP-04	Function code modification attribute	0: Modifiable	1: Non - modifiable	0	☆
Group A0: Torque Control Parameters					
A0-00	Speed/Torque Control Mode Selection	0: Speed control	1: Torque control	0	★
A0-01	Torque setting selection in torque control mode	0: Digital setting 1 (A0 - 03) 1: All 2: Al2 3: Keyboard potentiometer 4: PULSE pulse	5: Given by communication 6: MIN(AI1, AI2) 7: MAX(AI1, AI2) (The full - scale values of options 1 - 7 correspond to the digital setting of A0 - 03)	0	★
A0-03	Torque digital setting in torque control mode	-200.0%~200.0%		150.0%	☆
A0-05	Torque control forward maximum frequency	0.00Hz~Maximum frequency		50.00Hz	☆
A0-06	Torque control reverse maximum frequency	0.00Hz~Maximum frequency		50.00Hz	☆
A0-07	Torque rise filtering time	0.00s~65000s		0.00s	☆
A0-08	Torque fall filtering time	0.00s~65000s		0.00s	☆
Group A2: Second Motor Parameters					
A2-00	Motor type selection	2：Permanent magnet synchronous motor		2	★
A2-01	Rated motor power	0.1kW~1000.0kW		Determined by the model	★
A2-02	Rated motor voltage	1V~2000V		Determined by the model	★

Function Code	Name	Setting Range		Factory Default	Change
A2-03	Rated motor current	0.01A~655.35A(Inverter powe≤ 55kW) 0.1A~6553.5A(Inverter power>55kW)		Determined by the model	★
A2-04	Rated motor frequency	0.01Hz~Maximum frequency		Determined by the mode	★
A2-05	Rated motor speed	1rpm~65535rpm		Determined by the mode	★
A2-16	Stator resistance of synchronous motor	0.001Ω - 65.535Ω (Inverter power ≤ 55kW)		Determined by the mode	★
A2-17	Synchronous D - axis inductance	0.0001Ω - 6.5535Ω (Inverter power > 55kW)		Determined by the mode	★
A2-18	Synchronous motor Q - axis inductance	0.01mH - 65.535mH (Inverter power ≤ 55kW)		Determined by the mode	★
A2-20	Back - EMF coefficient of synchronous motor	0.1V~6553.5V		Determined by the mode	★
A2-27	Encoder lines	1~65535		1024	★
A2-28	Encoder type	0: ABZ incremental encoder 1: UVW incremental encoder	2: Resolver 4: Provincial - wiring UVW encoder	0	★
A2-29	Selection of speed feedback PG	0: Local PG 1: Extended PG	2: Pulse input (X6)	0	★
A2-30	AB phase sequence of ABZ incremental encoder	0: Forward	1: Reverse	0	★
A2-31	Encoder installation angle	0.0~359.9°		0.0°	★
A2-32	UVW phase sequence of UVW encoder	0: Forward	1: Reverse	0	★
A2-34	Number of pole pairs of resolver	1~65535		1	★
A2-36	Speed feedback PG open - circuit detection time	0.0: No action	0.1s~10.0s	0.0	★
A2-37	Tuning selection	00: No operation 11: On - load tuning for synchronous machine	12: No - load tuning for synchronous machine	0	★

Function Code	Name	Setting Range		Factory Default	Change
A2-38	Speed loop proportional gain 1	1~100		20	☆
A2-39	Speed loop integral time 1	0.01s~10.00s		0.50s	☆
A2-40	Switching frequency 1	0.00~A2-43		5.00Hz	☆
A2-41	Speed loop proportional gain 2	1~100		20	☆
A2-42	Speed loop integral time 2	0.01s~10.00s		1.00s	☆
A2-43	Switching frequency 2	A2-40~Maximum frequency		10.00Hz	☆
A2-47	Torque upper limit source in speed control mode	0: Set by A2-48 1: All 2: Al2 3: Keyboard potentiometer 4: PULSE pulse	5: Communication setting 6: MIN(AI1,AI2) 7: MAX(Al1,Al2) Full - scale values of options 1 - 7 correspond to A2 - 48 Digital setting	0	☆
A2-48	Digital setting of torque upper limit in speed control mode	0.0%~200.0%		150.0%	☆
A2-49	Selection of torque upper limit command in speed control mode (generation)	0: Set by function code P2-10 1: AI1 2: AI2 3: Keyboard potentiometer 4: Set by PULSE pulse	5: Given by communication 6: MIN(AI1,AI2) 7: MAX(AI1,AI2) 8: Set by function code P2 - 12 The full - scale values of options 1 - 7 correspond to P2 - 12	0	☆
A2-50	Digital setting of torque upper limit in speed control mode (generation)	0.0% ~ 200.0%		150.0%	☆
A2-51	Excitation regulation proportional gain	0~20000		2000	☆
A2-52	Excitation regulation integral gain	0~20000		1300	☆
A2-53	Torque regulation proportional gain	0~20000		2000	☆
A2-54	Torque regulation integral gain	0~20000		1300	☆
A2-56	Synchronous machine field - weakening mode	0,1,2, 3		1	☆

Function Code	Name	Setting Range		Factory Default	Change
A2-57	Synchronous machine field - weakening gain	1~50		5	☆
A2-60	Enable for power - generation torque upper limit to take effect	0: Invalid	1: Valid	0	☆
A2-61	Control mode for the second motor	0: Sensorless vector control (SVC) 1: Sensor - based vector control (FVC)	2: V/F control	0	★
A2-62	Acceleration and deceleration time selection for the second motor	0: The same as that of the first motor 1: Acceleration and deceleration time 1 2: Acceleration and deceleration time 2	3: Acceleration and deceleration time 3 4: Acceleration and deceleration time 4	0	☆
A2-66	Margin of synchronous machine output voltage upper limit	0%~50%		5%	☆
A2-67	Current for detecting synchronous machine initial position angle	50%~180%		80%	☆
A2-68	Detection of synchronous machine initial position angle	0,1,2		0	☆
A2-70	Adjustment gain of synchronous machine saliency ratio	50~500		100	☆
A2-71	Maximum torque - to - current ratio control	0,1		0	☆
A2-75	Z - signal correction	0,1		1	☆
A2-79	Low - speed excitation current	0~80%		30%	☆
A2-80	Low - speed carrier frequency	0.8K~P0-15		1.5K	☆
A2-81	SVC low - frequency braking mode	0,1		0	☆
A2-82	Effective frequency for SVC low - frequency braking	0~10.00Hz		2.00Hz	☆

Function Code	Name	Setting Range		Factory Default	Change
A2-83	Frequency change step size of SVC low - frequency braking	0.0005~1.0000Hz		0.0010Hz	☆
A2-84	SVC low - frequency braking current	0~80%		50%	☆
A2-85	Synchronous machine SVC speed tracking	0~1		0	☆
A2-86	Zero servo enable	0~1		0	☆
A2-87	Switching frequency	0.00 ~ P2-02		0.30Hz	☆
A2-88	Zero servo speed loop proportional gain	1~ 100		10	☆
A2-89	Zero servo speed loop integral time	0.01s ~ 10.00s		0.50s	☆
A2-90	Enable for anti - reverse rotation during shutdown	0~1		0	☆
A2-91	Shutdown angle	0.0° ~ 10.0°		0.8°	☆
Group A5: Control Optimization Parameters					
A5-00	DPWM switching upper limit frequency	5.00Hz~Maximum frequency		8.00Hz	☆
A5-01	PWM modulation mode	0: Asynchronous modulation	1: Synchronous modulation	0	☆
A5-02	Dead - time compensation mode selection	0: No compensation	1: Compensation mode 1	1	☆
A5-03	Random PWM depth	0: Random PWM is invalid	1 - 10: Random depth of PWM carrier frequency	0	☆
A5-04	Fast current - limiting enable	0: Not enabled	1: Enabled	1	☆
A5-05	Maximum output voltage coefficient	100~120%		110%	★
A5-06	Undervoltage point setting	120.0~1500.0V		350.0V	☆
A5-08	Dead - time adjustment	100%~200%		150%	★
A5-09	Overvoltage point setting	200.0V~820.0V		820.0V	★
Group A6: AI Curve Setting					
A6-00	Minimum input of AI curve 4	-10.00V~A6-02		0.00V	☆

Function Code	Name	Setting Range	Factory Default	Change
A6-01	Setting corresponding to the minimum input of AI curve 4	-100.0%~+100.0%	0.0%	☆
A6-02	Inflection point 1 input of AI curve 4	A6-00~A6-04	3.00V	☆
A6-03	Setting corresponding to the inflection point 1 input of AI curve 4	-100.0%~+100.0%	30.0%	☆
A6-04	Inflection point 2 input of AI curve 4	A6-02~A6-06	6.00V	☆
A6-05	Setting corresponding to the inflection point 2 input of AI curve 4	100.0%~+100.0%	60.0%	☆
A6-06	Maximum input of AI curve 4	A6-04~+10.00V	10.00V	☆
A6-07	Setting corresponding to the maximum input of AI curve 4	-100.0%~+100.0%	100.0%	☆
A6-08	Minimum input of AI curve 5	10.00V~A6-10	-10.00V	☆
A6-09	Setting corresponding to the minimum input of AI curve 5	-100.0%~+100.0%	-100.0%	☆
A6-10	Inflection point 1 input of AI curve 5	A6-08~A6-12	-3.00V	☆
A6-11	Setting corresponding to the inflection point 1 input of AI curve 5	100.0%~+100.0%	-30.0%	☆
A6-12	Inflection point 2 input of AI curve 5	A6-10~A6-14	3.00V	☆
A6-13	Setting corresponding to the inflection point 2 input of AI curve 5	-100.0%~+100.0%	30.0%	☆
A6-14	Maximum input of AI curve 5	A6-12~+10.00V	10.00V	☆
A6-15	Setting corresponding to the maximum input of AI curve 5	-100.0%~+100.0%	100.0%	☆
A6-24	Jump point for All setting	-100.0%~100.0%	0.0%	☆
A6-25	Jump amplitude for All setting	0.0%~100.0%	0.5%	☆
A6-26	Jump point for AI2 setting	-100.0%~100.0%	0.0%	☆

Function Code	Name	Setting Range	Factory Default	Change
A6-27	Jump amplitude for AI2 setting	0.0%~100.0%	0.5%	☆
A6-28	Jump point for AI3 setting	-100.0%~100.0%	0.0%	☆
A6-29	Jump amplitude for AI3 setting	0.0%~100.0%	0.5%	☆
Group AC: AIAO Calibration				
AC-00	AI1 Measured Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-01	AI1 Displayed Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-02	AI1 Measured Voltage 2	-10.00V~10.000V	Factory calibration	☆
AC-03	AI1 Displayed Voltage 2	-10.00V~10.000V	Factory calibration	☆
AC-04	AI2 Measured Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-05	AI2 Displayed Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-06	AI2 Measured Voltage 2	-10.00V~10.000V	Factory calibration	☆
AC-07	AI2 Displayed Voltage	-10.00V~10.000V	Factory calibration	☆
AC-08	—	—	—	—
AC-09	—	—	—	—
AC-10	—	—	—	—
AC-11	—	—	—	—
AC-12	AO1 Target Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-13	AO1 Measured Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-14	AO1 Target Voltage 2	-10.00V~10.000V	Factory calibration	☆
AC-15	AO1 Measured Voltage 2	-10.00V~10.000V	Factory calibration	☆
AC-16	AO2 Target Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-17	AO2 Measured Voltage 1	-10.00V~10.000V	Factory calibration	☆
AC-18	AO2 Target Voltage 2	-10.00V~10.000V	Factory calibration	☆
AC-19	AO2 Measured Voltage 2	-10.00V~10.000V	Factory calibration	☆

A.2 Simplified Table of Monitoring Parameters

Function Code	Name	Minimum Unit	Communication Address
Group U0: Basic Monitoring Parameters			
U0-00	Operating Frequency (Hz)	0.01Hz	7000H
U0-01	Set Frequency (Hz)	0.01Hz	7001H
U0-02	Bus Voltage (V)	0.1V	7002H
U0-03	Output Voltage (V)	1V	7003H
U0-04	Output Current (A)	0.01A	7004H
U0-05	Output Power (kW)	0.1kW	7005H
U0-06	Output Torque (%)	0.1%	7006H
U0-07	X Input Status	1	7007H
U0-08	DO Output Status	1	7008H
U0-09	AI1 Voltage (V)	0.01V	7009H
U0-10	AI2 Voltage (V)/Current (mA)	0.01V/0.01mA	700AH
U0-11	—	—	
U0-12	Count Value	1	700CH
U0-13	Length Value	1	700DH
U0-14	Load Speed Display	1	700EH
U0-15	PID Setting	1	700FH
U0-16	PID Feedback	1	7010H
U0-17	PLC Phase	1	7011H
U0-18	Input Pulse Frequency (Hz)	0.01kHz	7012H
U0-19	Feedback Speed (Hz)	0.01Hz	7013H
U0-20	Remaining Operating Time	0.1min	7014H
U0-21	AI1 Voltage before Calibration	0.001V	7015H
U0-22	AI2 Voltage (V)/Current (mA) before Calibration	0.001V/0.01mA	7016H
U0-23		—	
U0-24	Linear Velocity	1m/ min	7018H

Function Code	Name	Minimum Unit	Communication Address
U0-25	Current Power - on Time	1min	7019H
U0-26	Current Operating Time	0.1min	701AH
U0-27	Input Pulse Frequency	1Hz	701BH
U0-28	Communication Set Value	0.01%	701CH
U0-29	Encoder Feedback Speed	0.01Hz	701DH
U0-30	Main Frequency Display	0.01Hz	701EH
U0-31	Auxiliary frequency display	0.01Hz	701FH
U0-32	View the value of any memory address	1	7020H
U0-34	Motor temperature value	1℃	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	V/F separated target voltage	1V	7027H
U0-40	V/F separated output voltage	1V	7028H
U0-41	Intuitive display of DI input status	1	7029H
U0-42	Intuitive display of DO output status	1	702AH
U0-43	Intuitive display of DI function status 1 (functions 01 - 40)	1	702BH
U0-44	Intuitive display of DI function status 2 (functions 41 - 80)	1	702CH
U0-45	Fault information	1	702DH
U0-58	Z signal counter	1	703AH
U0-59	Set frequency (%)	0.01%	703BH
U0-60	Operating frequency (%)	0.01%	703CH

Appendix: MK800 Modbus Communication Protocol

The MK800 series frequency converters provide an RS485 communication interface and support the Modbus communication protocol. Users can realize centralized control through a computer or PLC, set frequency converter operating commands through this communication protocol, modify or read function code parameters, and read the frequency converter's operating status and fault information, etc.

1.1 Protocol Content

This serial communication protocol defines the content and format of information transmitted in serial communication. It includes: master polling (or broadcasting) format; the master's coding method, which includes: the function code of the requested action, transmission data, and error checking, etc. The slave's response also uses the same structure, including: action confirmation, return data, and error checking, etc. If the slave encounters an error while receiving information or cannot complete the action requested by the master, it will organize a fault message as a response to the master.

Application Method The frequency converter is connected to a "single master-multiple slave" PC/PLC control network with an RS485 bus.
Bus Structure

(1) Interface Method

RS485 hardware interface
(2) Transmission Method Asynchronous serial,

half-duplex transmission. At any given moment, only the master or a slave can send data while the other can only receive data. Data in serial asynchronous communication is transmitted frame by frame in the form of messages.

(3) Topology Structure

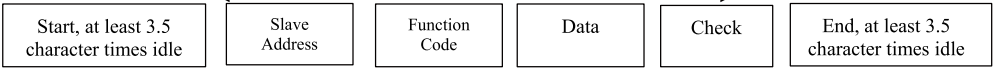
Single master-multiple slave system. The setting range of the slave address is 1~247, with 0 being the broadcast communication address. Each slave address in the network must be unique.

1.2 Protocol Description

The CDL series frequency converter communication protocol is an asynchronous serial master-slave Modbus communication protocol, where only one device (the master) in the network can establish the protocol (referred to as "query/command"). Other devices (slaves) can only provide data in response to the master's "query/command" or take appropriate action based on the master's "query/command". In this context, the host refers to Personal Computers (PC), Industrial Control Equipment, or Programmable Logic Controllers (PLC), etc., while the slave refers to MK series frequency converters. The host can communicate individually with a particular slave or broadcast to all subordinate slaves. For each direct host "query/command," the slave must return a message (referred to as a response); for broadcast messages issued by the host, the slave need not feedback a response.

The communication data structure of CDL series frequency converters with Modbus protocol is as follows:

RTU Mode
Modbus Data Frame:



The entire message frame must be transmitted as a continuous stream. If there is a pause of more than 1.5 character times before the frame is complete, the receiving device will discard the incomplete message and assume the next byte is the start of a new message's address field. Similarly, if a new message starts within less than 3.5 character times after the previous message, the receiving device will consider it a continuation of the previous message. This will lead to an error because the last CRC field's value will likely be incorrect.

RTU Frame Format:

Frame Head START	3.5 character times
Slave Address ADR	Communication address: 1~247
Command Code CMD	03: Read slave parameters; 06: Write slave parameters
Data Content Data(N-1)	Data Content includes Function Code parameter Address, number of parameters, parameter values, etc.
Data Content Data(N-2)	
……	
Data Content DATA0	
CRCCHK high	Check value: CRC value
CRCCHK low	
END	3.5 character times

CMD (Command Instruction) and DATA (Data Word Description):

Command code 03H reads N words (Word), with a maximum of 12 words. For example, for the frequency converter with slave address 01, it continuously reads 2 values starting from address F002.

Host Command Information:

ADR	01H
CMD	03H
Starting Address High	FOH
Starting Address Low	02H
Register Count High	
Register Count Low	
CRC CHK Low	
CRC CHK High	

Slave Response Information

When PD-05 is set to the unit digit as 0:

ADR	01H
CMD	03H
Byte Count High	00H
Byte Count Low	04H
Data F002H High	00H
Data F002H Low	00H
Data F003H High	00H
Data F003H Low	01H
CRC CH K Low	CRC CHK value pending calculation
CRC CHK High	

When PD-05 is set to the tens digit as 1:

ADR	01H
CMD	03H
Byte Count	04H
Data F002H High	00H
Data F002H Low	00H
Data F003H High	00H
Data F003H Low	01H
CRCCHK low	CRC CHK value pending calculation
CRCCHK high	

Command code: 06H writes a word, for example, writing 5000 (1388H) to the F0OAH address of the Frequency Converter at slave address 02H.

Host Command Information:

ADR	02H
CMD	06H
Data Address High	FOH
Data Address Low	0AH
Data Content High	13H
Data Content Low	88H
CRC CH K Low	CRC CHK value pending calculation
CRCCHK high	

Slave Response Information:

ADR	02H
CMD	06H
Data Address High	FOH
Data Address Low	OAH
Data Content High	13H
Data Content Low	88H
CRCCHK low	CRC CHK value pending calculation
CRC CHK High	

Verification Method - CRC Verification Method: CRC (Cyclical Redundancy Check) uses RTU frame format, including an error detection field based on the CRC method. The CRC field checks the entire message content. It is two bytes long, containing a 16-bit binary value. The transmitting device calculates

this value and adds it to the message. The receiving device recalculates the CRC for the received message and compares it with the received CRC field value. If the two CRC values are not equal, it indicates an error in transmission.

CRC begins with a preset value of 0xFFFF, then a procedure is called that processes consecutive 8-bit bytes from the message against the current value in the register. Only the 8-bit data of each character is significant for CRC, while start, stop, and parity bits are not.

In the CRC generation process, each 8-bit character is exclusively ORed (XOR) with the register content, shifted towards the least significant bit, and the most significant bit is filled with 0. The LSB is extracted and checked; if it is 1, the register is XORed with a preset value; if 0, it's not. This process is repeated 8 times. After completing the last bit (8th bit), the next 8-bit byte is XORed with the current register value. The final value in the register after all bytes are processed is the CRC value of the message.

When added to the message, the low byte is added first, followed by the high byte. A simple function for CRC is as follows:

```
unsigned      int    crc_chk_value(unsigned    char*data_value,unsigned    char    length)
{
   unsigned int crc_value=0xFFFF;
    int    i;
    while(length--)
    {
    crc_value^=*data_value++;
       for(i=0;j<8;i++)
       {
       if(crc_value&0x0001)
       {
       crc_value=(crc_value>>1)^0xa001;
         }
          Else
          {
          crc_value    =crc_value>>1
         }
     }
  }
return(crc_value);
}
```

The address definition of communication parameters.

This part is the content of communication used to control the operation of the frequency converter, the status of the frequency converter, and the setting of related parameters.

Read and write function code parameters (some function codes are unchangeable, for manufacturer use or monitoring only): The addressing rule for function code parameters is as follows:

The parameter address is represented by the function code group number and identifier as per the addressing rule.

High byte: F0~FF (P group), A0~AF (A group), 70~7F (U0 group). Low byte: 00~FF

For example: P3-12 is represented as F30C;

Note: PF group parameters are neither readable nor changeable; U0 group parameters are only readable and not changeable.

Some parameters cannot be changed while the frequency converter is running; some parameters are unchangeable regardless of the frequency converter's state. When changing function code parameters, also consider the parameter's range, unit, and related instructions.

For P group parameters, to activate the function, change the high F of the function code address to 0. For A group parameters, to activate the function, change the high A of the function code address to 4. The corresponding function code addresses are represented as follows: High byte: 00~0F (P group), 40~4F (A group) Low byte:

00~FF.

For example:

Function code P3-12, not stored to EEPROM, is represented as 030C; function code A0-05, not stored to EEPROM, is represented as 4005; this address representation can only be used for writing to RAM, not for reading, as it is an invalid address for reading. For all parameters, command code 07H can also be used to implement the function.

Function code P3-12 stored to EEPROM is represented as F30C; A0-05 stored to EEPROM is represented as A005.

Additionally, frequent storing to EEPROM can reduce the lifespan of EEPROM. Therefore, some function codes in communication mode do not need to be stored; altering the values in RAM is sufficient.

Stop/Run parameter part:

Parameter Address	Parameter Description
1000	*Communication Set Value (-10000~10000) (Decimal)
1001	Operating Frequency
1002	Bus Voltage
1003	Output Voltage
1004	Output Current
1005	Output Power
1006	Output Torque
1007	Operating Speed
1008	X Input Flag
1009	DO Output Flag
100A	AI1 Voltage
100B	AI2 Voltage
100C	-
100D	Count Value Input
100E	Length Value Input
100F	Load Speed
1010	PID Setting
1011	PID Feedback
1012	PLC Step
1013	PULSE Input Pulse Frequency, unit 0.01kHz
1014	Feedback Speed, unit 0.1Hz
1015	Remaining Operating Time
1016	AI1 Pre-correction Voltage
1017	AI2 Pre-correction Voltage
1018	-

Parameter Address	Parameter Description
1019	Line Speed
101A	Current Power-on Time
101B	Current Operating Time
101C	PULSE Input Pulse Frequency, unit 1Hz
101D	Communication Set Value
101E	Actual Feedback Speed
101F	Main Frequency X Display
1020	Auxiliary Frequency Y Display

Note:

The communication set value is a percentage of a relative value, with 1000 corresponding to 100.00%, and -10000 corresponding to -100.00%. For frequency dimension data, this percentage is relative to the maximum frequency (P0-10). For torque dimension data, this percentage relates to the upper limit digital setting for the first, second, and third motors respectively (P2-10, A2-48, A3-48).

Control command input to the frequency converter: (Write only)

Command Word Address	Command Function
2000	0001: Forward operation
	0002: Reverse operation
	0003: Jog forward
	0004: Jog reverse
	0005: Free stop
	0006: Deceleration stop
	0007: Fault reset

Read frequency converter status: (Read only)

Status Word Address	Status Word Function
3000	0001: Forward operation
	0002: Reverse operation
	0003: Stop

Parameter lock password verification: (If the return is 8888H, it indicates password verification passed)

Password Address	Input password content
1F00	*****

Command Address	Command Content
2001	BIT0: Y1 output control BIT1: Reserved BIT2: Relay 1 output control BIT3: Relay 2 output control BIT4: Y2 output control (Y2 terminal for collector open circuit output) BIT5:VDO1 BIT6:VDO2 BIT7:VDO3 BIT8:VDO4 BIT9:VDO5

Analog output AO1 control: (Write only)

Command Address	Command Content
2002	0~7FFF represents 0%~100%

Analog output AO2 control: (Write only)

Command Address	Command Content
2003	0~7FFF represents 0%~100%

Pulse (PULSE) output control: (Write only)

Command Address	Command Content
2004	0~7FFF represents 0%~100%

Frequency Converter fault description:

Frequency Converter Fault Address	Frequency Converter Fault Information
8000	0000: No fault 0001: Reserved 0002: Overcurrent during acceleration 0003: Overcurrent during deceleration 0004: Overcurrent at constant speed 0005: Overvoltage during acceleration 0006: Overvoltage during deceleration 0007: Overvoltage at constant speed 0008: Buffer resistor overload fault 0009: Under-voltage fault

Frequency Converter Fault Address	Frequency Converter Fault Information
8000	000A: Frequency converter overload 000B: Motor overload 000C: Input phase loss 000D: Output phase loss 000E: Module overheating 000F: External fault 0010: Communication abnormality 0011: Contactor abnormality 0012: Current detection fault 0013: Motor tuning fault 0014: Encoder/PG card fault 0015: Parameter read/write anomaly 0016: Frequency converter hardware fault 0017: Motor ground short-circuit fault 0018: Reserved 0019: Reserved 001A: Operating time reached 001B: User-defined fault 1 001C: User-defined fault 2 001D: Power-on time reached 001E: Load drop 001F: Operating PID feedback lost 0028: Rapid current limit timeout fault 0029: Motor switch fault during operation 002A: Excessive speed deviation 002B: Motor overspeed 002D: Motor overtemperature 005A: Encoder line count setting error 005B: Encoder not connected 005C: Initial position error 005E: Speed feedback error
8001	0000: No fault 0001: Password error 0002: Command code error 0003: CRC verification error 0004: Invalid address 0005: Invalid parameter 0006: Parameter change invalid 0007: System locked 0008: EEPROM operation in progress

Pd Group Communication Parameter Description

Pd-00	Baud Rate	Factory Value	5005
	Setting Range	Unit: MODBUS baud rate 0:300BPS 1:600BPS 2:1200BPS 3:2400BPS 4:4800BPS 5:9600BPS 6:19200BPS 7:38400BPS 8:57600BPS 9:115200BPS	

This parameter sets the data transfer rate between the master device and the frequency converter. Note that the baud rate set on the master device and the frequency converter must match; otherwise, communication cannot occur. The higher the baud rate, the faster the communication speed.

Pd-01	Data Format	Factory Value	0
	Setting Range	0: No parity: Data format <8,N,2> 1: Even parity: Data format <8,E,1> 2: Odd parity: Data format <8,O,1> 3: No parity: Data format <8-N-1>	

The data format set on the master device and the frequency converter must be consistent; otherwise, communication cannot occur.

Pd-02	Local Address	Factory Value	1
	Setting Range	1~247, 0 as broadcast address	

When the local address is set to 0, it acts as a broadcast address, enabling the broadcasting function from the master device.

The local address is unique (except for the broadcast address), which is essential for facilitating point-to-point communication between the master device and the frequency converter.

Pd-03	Response Delay	Factory Value	2ms
	Setting Range	0~20ms	

Response delay refers to the interval between the end of data reception by the frequency converter and the start of data transmission to the master device. If the response delay is less than the system processing time, the system processing time prevails. If the response delay is longer than the system processing time, the system waits after processing the data until the response delay time has elapsed before sending data to the master device.

Pd-04	Communication Timeout	Factory Value	0.0 s
	Setting Range	0.0s (Invalid) 0.1~60.0s	

When this function code is set to 0.0s, the communication timeout parameter is invalid.

If set to a valid value and the interval between one communication and the next exceeds the set communication timeout, the system will report a communication fault error (Err16). Typically, this is set to invalid. However, in a system with continuous communication, setting this parameter can monitor communication status.

Pd-05	Communication Protocol Selection	Factory Value	31
	Setting Range	Unit: MODBUS 1: Selects standard Modbus protocol. 0: When reading commands, the slave returns one more byte than the standard Modbus protocol; refer to the "(4) Communication Data Structure" section of this protocol. Tens: Reserved	

Pd-05=0: When reading commands, the slave returns one more byte than the standard Modbus protocol; refer to "Appendix Mk500 Modbus Communication Protocol (4) Communication Data Structure".

Pd-05=1: Selects standard Modbus protocol.

Pd-06	Communication Read Current Resolution	Factory Value	0
	Setting Range	0:0.01A;1:0.1A	

Used to determine the output unit of the current value when the communication reads the output current.

MOKWEIR Warranty Agreement

1) The warranty period for this product is eighteen months (based on the barcode information on the machine body). During the warranty period, under normal usage as per the user manual, if the product malfunctions or is damaged, our company is responsible for free repairs.
2) During the warranty period, if the product is damaged due to the following reasons, the manufacturer will not bear the repair costs. If repair is required, the manufacturer will charge a certain amount of repair fees.
   A. Damage due to incorrect usage, unauthorized repairs, or modifications;
   B. Damage due to fire, flooding, abnormal voltage, other natural disasters, and secondary disasters;
   C. Hardware damage due to human drops or transportation after purchase;
   D. Damage due to operation not following the user manual provided by our company;
   E. Faults and damages due to obstacles external to the machine (such as external device factors).
3) When the product malfunctions or is damaged, please fill in the "Product Warranty Card" accurately and in detail.
4) The charging of repair fees will be in accordance with the "Repair Price List" most recently adjusted by our company.
5) This warranty card is generally not reissued; please be sure to retain this card and present it to the service personnel during the warranty service.
6) If there are any issues during the service process, please contact our agents or our company promptly.
7) The right to interpret this agreement belongs to MOKWEIR.

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MOKWEIR Product Warranty Card

Customer Information	Company Address:	
	Company Name: Postal Code:	Contact Person: Contact Telephone:
Product Information	Product Model:	
	Machine Body Barcode (affix here)	
	Agent Name:	
Fault Description	Description of Fault Recorder:	

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Telephone: 0512-67865782

Due to continuous product upgrades by our company,
content changes are subject to change without notice.