KEVAN

User's Manual
KV10 series inverter

Chapter 1 Summary

1.1 Safety Precautions

In order to ensure the safe and reasonable use of this product, please fully understand the safety precautions described in this manual before using this product.

Warning signs and meanings

The following marks are used in this manual to indicate that they are important for safety. Failure to follow these precautions could result in personal injury or death, and damage to the product and associated systems.

	**DANGER: Failure may result in death or serious safety accident.**
	**Caution: Misoperation may cause minor injuries.**

Operation qualification

This product must be operated by trained professionals. In addition, operators must be trained in professional skills, familiar with the installation, wiring, operation and maintenance of the equipment, and properly respond to various emergencies in use.

Safety guidance

Warning signs are proposed for your safety and are measures taken to prevent injury to operators and damage to the product and associated systems; please read this manual carefully before use, and strictly follow the safety rules and warnings in this manual Flag to operate.

- Correct transportation, storage, installation, and careful operation and maintenance are vital to the safe operation of the inverter. During transportation and storage, ensure that the inverter is not subject to shock and vibration. It must also be stored in a dry, non-corrosive gas, non-conductive dust, and place where the ambient temperature is less than 60 ° C.
- This product has dangerous voltage, and it controls the motion mechanism with potential danger. If you do not follow the regulations or operate in accordance with the requirements of this manual, it may cause personal injury and death, and damage to the product and related systems.
- Do not perform wiring work when the power is on, otherwise there is a danger of death due to electric shock; during wiring, inspection, maintenance, etc., please cut off the power of all related equipment, and confirm that the DC voltage of the main circuit has dropped to Safety level, wait 5 minutes before performing related operations.
- The power cables, motor cables, and control cables must be tightly connected. The ground terminal must be reliably grounded and the ground resistance must be less than 10Ω.
- The static electricity of the human body will seriously damage the internal sensitive devices. Before performing related operations, please observe the measures and methods prescribed by the electrostatic discharge prevention measures (ESD), otherwise the inverter may be damaged.
- Because the output voltage of the inverter is a pulse waveform, if a capacitor to improve power factor or a varistor for lightning protection is installed on the output side, be sure to remove or modify it on the input side of the inverter.
- Do not add switching devices such as circuit breakers and contactors

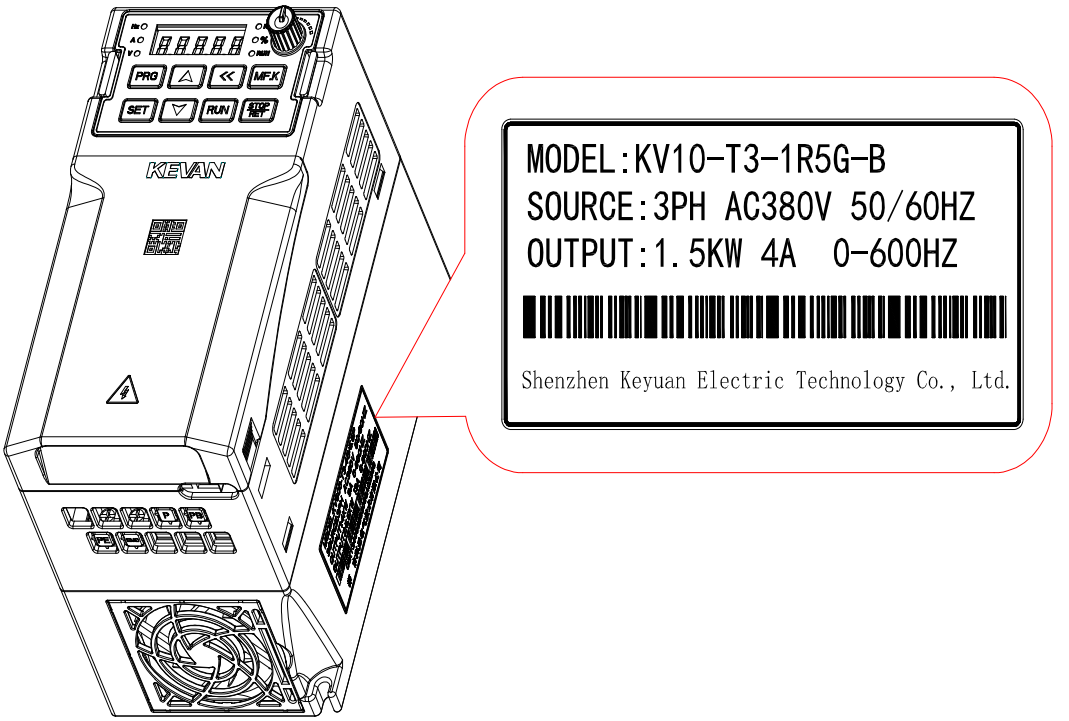
on the output side of the inverter (if you must connect switching devices on the output side, you must ensure that the output current of the inverter is zero during the switching operation).

- No matter where the fault occurs in the control equipment, it may cause shutdown and major accidents. Therefore, please take necessary external protective measures or backup devices.
- This product can only be used for the purpose specified by the manufacturer. It must not be used in emergency, rescue, marine, medical, aviation, nuclear facilities and other special fields without permission.
- The maintenance of this product can only be performed by the company or professionals authorized by the company. Unauthorized modification and use of accessories not approved by the company may cause product failure. During maintenance, any defective device must be replaced in time.

1.2 Before use

After receiving the product you ordered, please check the outer package if have damage or not, open the outer package after confirming the integrity, and confirm whether the inverter is damaged, scratched or dirt (the damage caused by the transportation is not included in the "Three Guarantees" of the company range). If the product you received has been damaged during shipping, please contact us or the shipping company immediately. After confirming that the received product is intact, please confirm whether the received inverter model is the same as the product you ordered.

Position and content of nameplate



Nameplate model description and rated parameters

KV10-T3-1R5G-B

Code	Machine series
KV10	

Code	Voltage classification
T	Three phase
S	single-phase

Code	Voltage level
2	220V
3	380V

Code	Accessory type
B	Brake unit

Code	Model
G	Heavy-duty

Code	Adapted motor power
R75	0.75KW
1R5	1.5KW
2R2	2.2KW
004	4KW

Voltage	220V	380V
Power (KW)	Rated output current (A)	
0.75	4	3
1.5	7	4
2.2	10	5
4		9.5

1.3 Technical specifications

Item		Specification
Power input	Voltage, Frequency	Single-phase 220V 50/60Hz ; Three-phase 380V 50/60Hz ;
	Allow fluctuations	Voltage imbalance rate:<3%; Frequency:±5%; Distortion rate meets IEC61800-2 requirements
	closing striking current	Less than rated current
	Power factor	≥0.94(with DC reactor)
	Inverter efficiency	≥96%
Output	Output voltage	Output under rated conditions: 3 phases, 0 ～ input voltage, error less than 5%
	Output frequency range	0～600Hz
	Output frequency accuracy	± 0.5% of the maximum frequency value

Item		Specification
	Overload capacity	T3 model: 150% rated current 1 minute, 180% rated current 5 seconds, 200% rated current 0.5 seconds S2 model: 150% rated current 20 seconds, 180% rated current 0.5 seconds
Main control performance	Motor control mode	PG-free V / F control, PG-free vector control (T3 series)
	Modulation	Optimized space vector PWM modulation
	Carrier frequency	0.7～16.0kHz
	Speed control range	Vector control without PG, rated load 1;100;
	Steady speed accuracy	Vector control without PG: ≤2% rated synchronous speed;
	Starting torque	Vector control without PG: 150% of rated torque at 0.5Hz;
	Torque response	Vector control without PG: <20ms;
	Frequency accuracy	Digital setting: maximum frequency × ± 0.01%; Analog setting: maximum frequency × ± 0.2%
	Frequency resolution	Digital setting: 0.01Hz; Analog setting: maximum frequency × 0.05%
Product basic	Torque control	Torque setting calculation, torque mode speed limitation

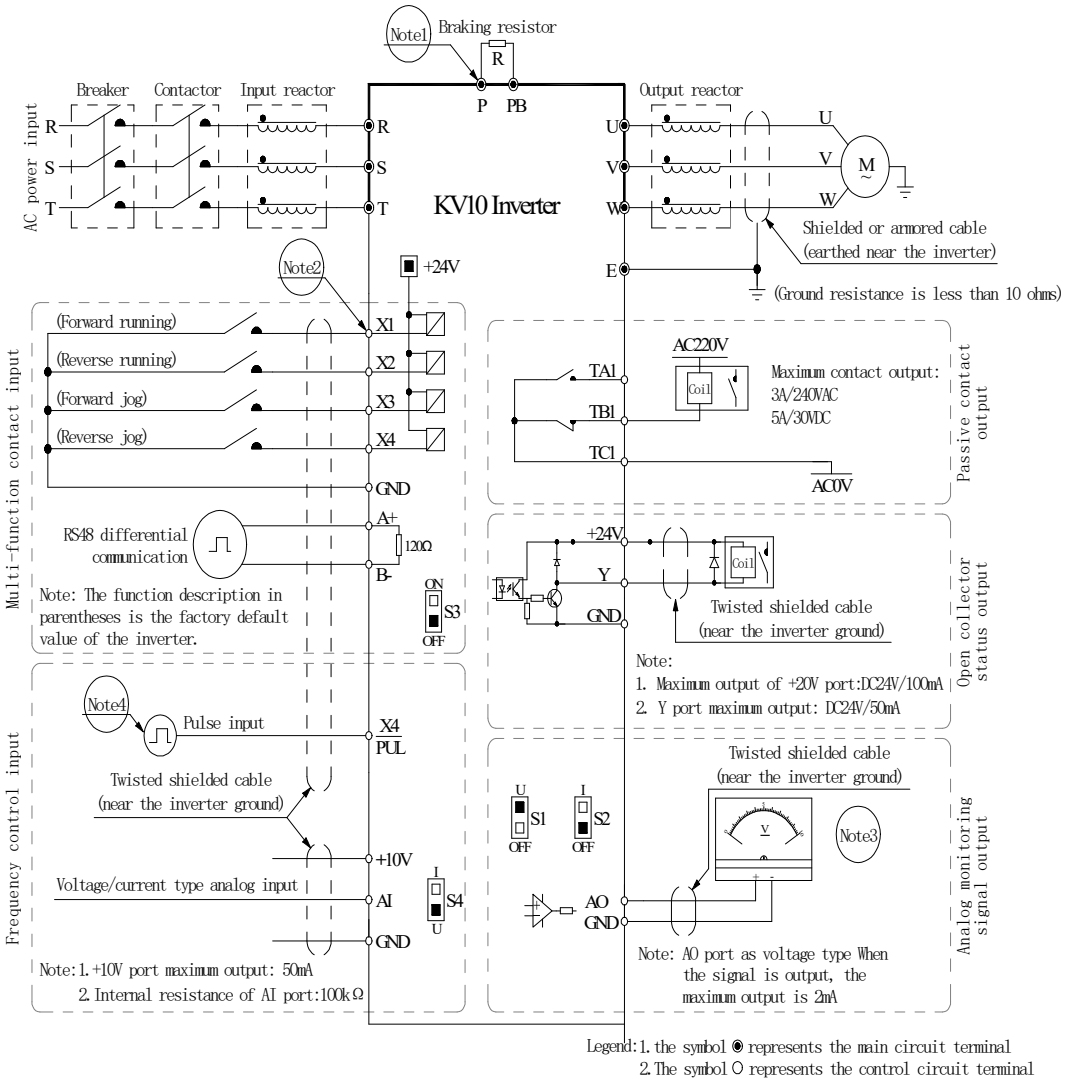
Item		Specification
functions	DC braking capacity	Starting frequency: 0.00 ～ 50.00Hz; Braking time: 0.0 ～ 60.0s; Braking current: 0.0 ～ 150.0% of rated current
	Torque boost	Automatic torque boost 0.0% ～ 100.0%; manual torque boost 0.0% ～ 30.0%
	V / F curve	Four modes: linear torque characteristic curve, self-set V / F curve, reduced torque characteristic curve (1.1 ~ 2.0 power), square V / F curve
	Acceleration / deceleration curve	Two ways: linear acceleration and deceleration, S curve acceleration and deceleration Four sets of acceleration and deceleration time, time unit 0.01s, maximum 650.00s
	Rated output voltage	Using the power supply voltage compensation function, the rated voltage of the motor is 100%, which can be set within the range of 50 to 100% (the output cannot exceed the input voltage)
	Automatic voltage adjustment	When the grid voltage fluctuates, it can automatically keep the output voltage constant
	Automatic energy-saving operation	Under V / F control mode, the output voltage is automatically optimized according to the load to achieve energy-saving operation

Item		Specification
	Automatic current limit	Automatic current limit during operation to prevent frequent overcurrent fault trips
	Instant power off processing	Uninterrupted operation through bus voltage control during momentary power failure
	Standard function	PID control, speed tracking and restart after power failure, skip frequency, frequency upper and lower limit control, program operation, multi-stage speed, RS485, analog output, frequency pulse output, parameter access level setting, common parameter setting, monitoring parameter comparator output , Counting and timing function, wobble frequency function
	Frequency setting channel	Keyboard digital setting, keyboard potentiometer, analog voltage / current terminal AI, communication reference and multi-channel terminal selection, combination of main and auxiliary channels, can be switched in various ways
	Feedback input channel	Keyboard potentiometer, voltage / current terminal AI, communication reference, pulse input PUL, PUL pulse input multiplex X4 terminal
	Command running channel	Operation panel setting, external terminal setting, communication setting

Item		Specification	
	Command input signal	Start, stop, forward and reverse, jog, multi-speed, free stop, reset, acceleration / deceleration time selection, frequency setting channel selection, external fault alarm	
	External output signal	1 relay output, 1 collector Y terminal output, 1 AO output, selectable as 0 ～ 10V or 0 ～ 20mA or 4 ～ 20mA output	
Protective function		Over-voltage, under-voltage, current limit, over-current, overload, electronic thermal relay, over-temperature, over-voltage stall, data protection, rapid protection, input and output phase loss protection	
Keyboard display	LED display	Pluggable keyboard: single-line 5-digit digital tube display	Can monitor 1 inverter status
	Condition monitoring	All parameters of the monitoring parameter group such as output frequency, given frequency, output current, input voltage, output voltage, motor speed, PID feedback, PID given value, module temperature, given torque, output torque, etc.	
	Error alarm	Overvoltage, undervoltage, overcurrent, short circuit, phase loss, overload, overheating, overvoltage stall, current limit, data protection is damaged, current fault operating conditions, historical fault	

Item		Specification
Environment	Installation site	Altitude is less than 1000 meters, derating for use above 1000 meters, derating 1% for every 100 meters; no condensation, icing, rain, snow, hail, etc., solar radiation is less than 700W / m2, air pressure is 70 ～ 106kPa
	Temperature, humidity	-10 ～ + 50 ℃, derating above 40 ℃, maximum temperature 60 ℃ (no-load operation) 5% to 95% RH (non-condensing)
	Vibration	When 9～200Hz, 5.9m/s2(0.6g)
	Storage temperature	-30 ～ +60℃
	Installation method	Wall-mounted
	Protection grade	IP20
	Cooling method	Forced air cooling

1.4 Standard connection diagram



Note:

1. Select the braking resistor resistance. For details, please refer to the braking resistor specifications recommended by KV10 series inverters.

2. Multi-function input terminals (X1 ～ X4 / PUL), compatible design of NPN, PNP transistor signal input, factory default is NPN transistor signal type input;

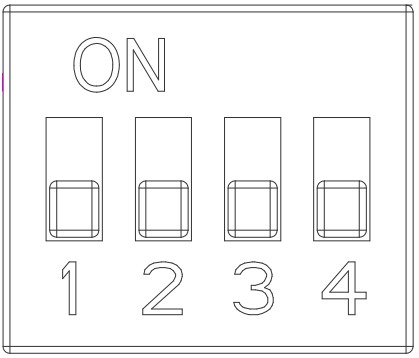
3. The analog monitoring output is a dedicated output for indicator meters such as ammeters and voltmeters, and cannot be used for control operations such as feedback control;

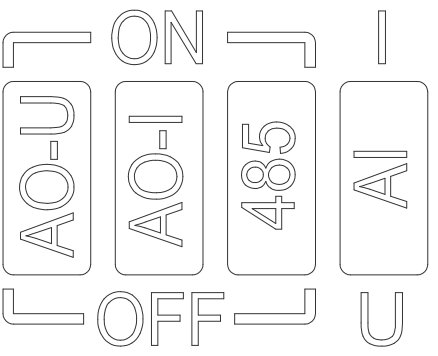
4. Due to the existence of multiple pulse types in actual use, please refer to the detailed description for the specific wiring method. The maximum pulse input specification: 50KHz / 24V.

1.5 Auxiliary terminal output capability

Terminal	Function definition	Maximum output
+10V	10V auxiliary power output, reference potential is GND	50mA
AO	Analog monitoring output, reference potential is GND	Maximum output 2mA when used as voltage type signal
+24V	24V auxiliary power output, reference potential is GND	100mA
Y	Open collector output, programmable action object	DC24V/50mA
TA/TB/TC	Passive contact output, programmable action object	3A/240VAC 5A/30VDC

1.6 Function diagram and description of transfer switch





Tag number	Digit coding	Choose location	Function Description
S9	1	ON	Enable AO-U voltage output, output range: 0 ～ 10V (Factory default)
		OFF	Turn off AO-U voltage output
	2	ON	Enable AO-I current output, output range: 0 ～ 20mA or 4 ～20mA
		OFF	Turn off AO-I current output
	3	ON	RS485 communication terminal resistance
		OFF	Disconnect RS485 communication terminal resistance (Factory default)
	4	I	AI adaptive current type analog input, 0 ～ 20mA or 4 ～ 20mA
		U	AI adaptive voltage type analog input, 0 ～ 10V (Factory default)

1.7 Recommended braking resistor specifications and instructions for the inverter

Three-phase 380V voltage level			
Motor Power（KW）	**Resistance（Ω）**	**Resistance power（W or KW）**	**Braking torque（%）**
0.75 KW	750Ω	150W	100%

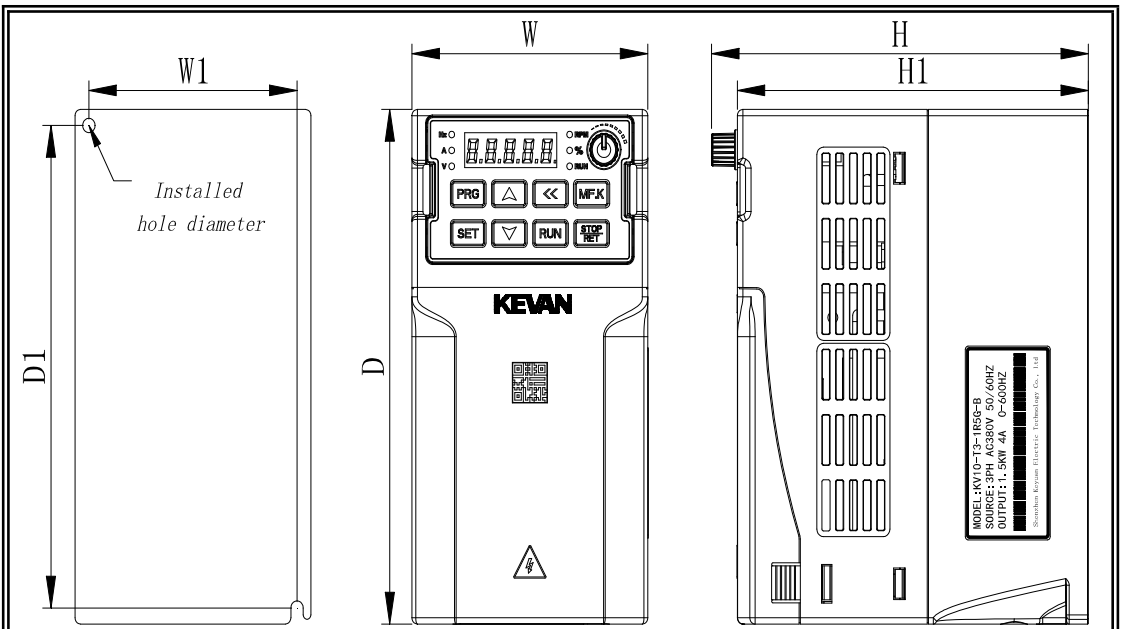
1.5 KW	400Ω	300W	100%
2.2 KW	250Ω	400W	100%
4.0 KW	150Ω	500W	100%
5.5KW	100Ω	600W	100%
7.5 KW	75Ω	780W	100%
Single-phase 220V voltage level			
Motor Power（KW）	**Resistance（Ω）**	**Resistance power（W or KW）**	**Braking torque（%）**
0.4 KW	400Ω	100W	100%
0.75 KW	200Ω	120W	100%
1.5 KW	100Ω	300W	100%
2.2 KW	75Ω	300W	100%
4.0 KW	50Ω	500W	100%

The braking resistor resistance and resistance power described in the above table are determined in accordance with ordinary inertia loads and intermittent braking methods. If it needs to be used in the occasion of large inertia and frequent braking for a long time, please adjust the braking resistor resistance and resistance power according to the specifications of the selected inverter and the rated parameters of the braking unit. If in doubt, please consult the Customer Service Department of Shenzhen Keyuan Electric Technology Co., Ltd.

Chapter 2 Installation

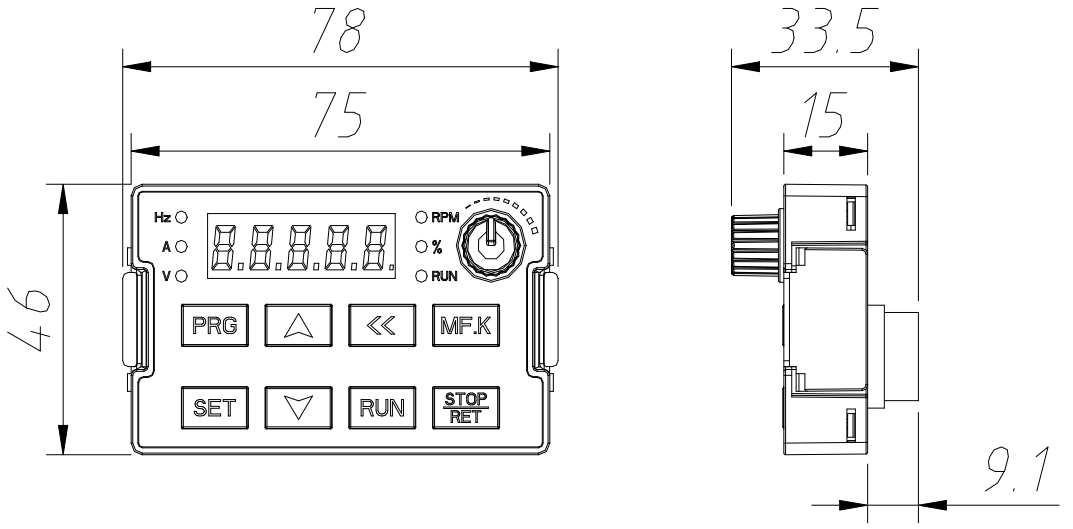
In order to ensure the safe use of the product by the user, maximize the performance of the inverter, and ensure the reliable operation of the inverter, please use this product strictly in accordance with the environmental, wiring, and ventilation requirements described in this chapter.

Inverter and keyboard dimensions

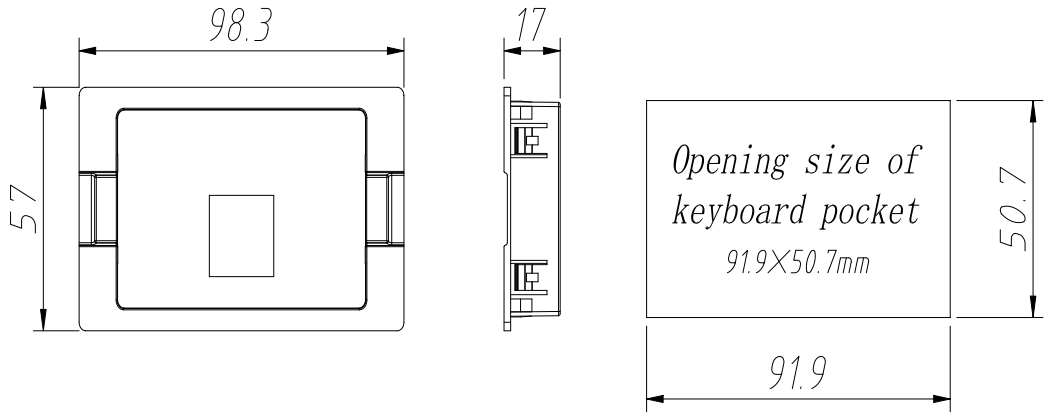


Inverter model	Dimensions (mm)				Installation size (mm)		Installation Aperture
	W	D	H1	H	W1	D1	Φ
KV10-S2-R75G-B	86	162	128	137	76	152	4.5
KV10-S2-1R5G-B	91	175	128	137	81	164	4.5
KV10-S2-2R2G-B							
KV10-T3-R75G-B	86	162	128	137	76	152	4.5
KV10-T3-1R5G-B							
KV10-T3-2R2G-B							

KV10-T3-004G-B	91	175	128	137	81	164	4.5



External keyboard dimensions of KV10 series



Outline and opening size of kv10 series external keyboard pocket

Chapter 3 Keyboard Layout and Operation Instructions

3.1 Keyboard operator appearance

3.2 Key functions

Key symbol	Function definition	Function description
PRG	Menu	First level menu entry or exit
SET	Set / shift key	Enter the menu screen step by step and confirm the setting parameters
▲ ▼	Up and down keys	Data or function code increment and decrement
RUN	Run key	In keyboard operation mode, used for running operation
STOP RET	Stop / Reset button	When running, press this key to stop the running operation; if fault alarm, it is used to reset the operation. The characteristics of this key are restricted by the F4-01 parameter

	Shift key	In the display interface, select the display parameters cyclically; when changing the parameters, it is used to change the bit.
	Multi-function key	Select function switching according to F4-00 parameters, which can be defined as jog or running

3.3 Light meaning

Name		Status	Meaning
Unit indicator	Hz	Flashing / On	Frequency unit
	A	On	Current unit o
	V	On	Voltage unit
	RPM	On	Speed unit
	%	Flashing / On	Percentage unit
Status Indicator	RUN	On	Inverter forward running
	RUN	Flashing / On	Inverter reverse running
	RUN	Off	Inverter shutdown

Chapter 4 Function Table

This chapter only provides the function summary. For detailed function description, please refer to the KV10 technical manual or consult our company.

4.1 Safety Precautions

Danger
Please pay attention to all the information about safety in this book.
Failure to follow the warnings may result in death or serious injury. The company will not be held liable for injuries and equipment damage caused by your company or your customers' failure to comply with the contents of this book.

4.2 How to read the parameter list

◆ **Icons and terminology for control mode**

Icons	Content
S2	Effective parameters of single-phase (S2) inverter
T3	Effective parameters of three-phase (T3) inverter

◆ **Icons and terminology for control mode**

Icons	Content
○	Parameters that cannot be modified during operation
●	Parameters that can be modified during operation
×	This parameter can only be read and cannot be modified
※	This parameter is related to the inverter model

4.3 Functional group

F0 Basic parameter group

Function code (address)	Function code name	Factory default	Setting value range and definition	Attributes	Note
F0-00 (0x000)	Control operation mode	0	0: VF control 1: PG-free vector control	○	S2 only supports VF control

F0-01 (0x001)	Kepp			○	
F0-02 (0x002)	Run instruction selection	0	0: keyboard 1: terminal 2: RS485 communication	○	
F0-03 (0x003)	Main frequency given source	0	0: keyboard frequency given frequency 1: keyboard potentiometer given 2: Analog AI given 3: Terminal pulse HDI given 4: RS485 communication given 5: Terminal UP / DW control 6: PID control given 7: Program control (PLC) given 8: Multi-speed setting	●	
F0-04 (0x004)	Auxiliary frequency given source	1		●	
F0-05 (0x005)	Auxiliary frequency reference	0	0: Use the maximum output frequency as the reference source 1: Use the main frequency as the reference source	●	
F0-06 (0x006)	Frequency command overlay selection	0	0: main frequency 1: auxiliary frequency 2: primary + secondary 3: primary-secondary 4: Maximum of the two 5: Minimum of the two	●	
F0-07 (0x007)	Run command bundle	0000	**Units: keyboard command bundle** **Tens place: terminal command binding** **Hundreds: communication command bundle** 0: No bundling 1: keyboard number given 2: Potentiometer given 3: AI given 4: HDI given 5: RS485 given 6: Terminal UP / DW 7: PID given 8: PLC given	●	

			9: Multi-speed setting		
F0-08 (0x008)	Keyboard number setting frequency	50.00Hz	0.00～Upper frequency	●	
F0-09 (0x009)	Maximum frequency	50.00Hz	Upper frequency～600.00Hz	○	
F0-10 (0x00A)	Upper frequency source selection	0	0: Digital setting of upper limit frequency 1: keyboard potentiometer given 2: Analog AI given 3: Terminal pulse HDI reference 4: RS485 communication given	●	
F0-11 (0x00B)	Digital setting of upper frequency	50.00Hz	Lower limit frequency～ maximum frequency	●	
F0-12 (0x00C)	Lower limit frequency	0.00Hz	0.00～Upper frequency	●	
F0-13 (0x00D)	Lower limit frequency operation mode	1	0: stop output 1: Run at the lower limit frequency	○	
F0-14 (0x00E)	Acceleration time 0	Model settings	0.01～650.00s	※	
F0-15 (0x00F)	Deceleration time 0	Model settings		※	
F0-16 (0x010)	Selection of running direction	0000	One's place: reverse the running direction 0: The direction is unchanged 1: reverse direction Tens place: running direction prohibited 0: Invalid 1: Reverse prohibited 2: Forward is prohibited Hundreds place: Frequency	○	

			control direction command 0: Invalid 1: valid		
F0-17 (0x011)	PWMCarrier frequency	Model settings	0.7～16.0kHz	※	
F0-18 (0x012)	PWM Control mode	1111	**Ones place: Carrier is related to temperature** 0: Not relevant 1: about **Tens place: Carrier is related to output frequency** 0: Not relevant 1: about **Hundreds place: random PWM enable** 0: Forbidden 1: enable **Thousands: PWM modulation** 0: three-phase modulation 1: automatic switching	●	
F0-19 (0x013)	Parameter initialization	0	0: No operation 1: Restore factory value (do not restore motor parameters) 2: Restore factory value (restore motor parameters) 3: Clear fault records	○	0x013

F1 Start-stop control parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F1-00 (0x0100)	Start way	0	0: Start directly 1: Start after DC injection 2: Start after speed tracking	○	
F1-01 (0x0101)	Start pre-excitation time	0.00s	0.00～60.00s	○	
F1-02 (0x0102)	Starting frequency	0.50Hz	0.00～60.00Hz	○	
F1-03 (0x0103)	Start frequency hold time	0.0s	0.0～50.0s	○	

F1-04 (0x0104)	DC injection current	60.0%	0.0～150.0%	○	
F1-05 (0x0105)	DC injection time	0.0s	0.0～60.0s	○	
F1-06 (0x0106)	Speed tracking speed	0.50s	0.00～60.00s	○	
F1-07 (0x0107)	Speed tracking shutdown delay	1.00s	0.00～60.00s	○	
F1-08～F1-09		Keep			
F1-10 (0x010A)	Stop mode	0	0: deceleration stop 1: Free stop	●	
F1-11 (0x010B)	Starting frequency of DC braking at stop	1.00Hz	0.00～50.00Hz	○	
F1-12 (0x010C)	DC braking current at stop	60.0%	0.0～150.0%	○	
F1-13 (0x010D)	DC brake holding time at stop	0.0s	0.0～60.0s	○	
F1-14 (0x010E)	Minimum output frequency at shutdown	0.50Hz	0.00～50.00Hz	●	
F1-15 (0x010F)	Keep				
F1-16 (0x0110)	Acceleration and deceleration	0010	**Units: time base selection** 0: maximum frequency 1: fixed frequency 50Hz 2: set frequency **Tens place: S acceleration and deceleration selection** 0: linear acceleration / deceleration 1: S curve acceleration and deceleration **Hundreds and thousands: reserved**	○	
F1-17 (0x0111)	Acceleration start S curve	0.10s	0.00～10.00	○	

	time				
F1-18 (0x0112)	Acceleration end S curve time	0.10s	0.00～10.00	○	
F1-19 (0x0113)	Deceleration start S curve time	0.10s	0.00～10.00	○	
F1-20 (0x0114)	S curve time at the end of deceleration	0.10s	0.00～10.00	○	
F1-21 (0x0115)	Acceleration time 1	10.00s	0.01～650.00s	●	
F1-22 (0x0116)	Deceleration time 1	10.00s	0.01～650.00s	●	
F1-23 (0x0117)	Acceleration time 2	10.00s	0.01～650.00s	●	
F1-24 (0x0118)	Deceleration time 2	10.00s	0.01～650.00s	●	
F1-25 (0x0119)	Acceleration time 3	10.00s	0.01～650.00s	●	
F1-26 (0x011A)	Deceleration time 3	10.00s	0.01～650.00s	●	
F1-27 (0x011B)	Emergency stop deceleration time	1.00s	0.01～650.00s	●	
F1-28 (0x011C)	Forward and reverse dead time	0.0s	0.0～120.0s	○	
F1-29 (0x011D)	Zero speed torque frequency threshold	0.50Hz	0.00～10.00Hz	●	
F1-30 (0x011E)	Zero speed torque holding coefficient	60.0%	0.0～150.0%	●	
F1-31 (0x011F)	Zero speed torque holding time	0	0.0～6000.0s When set to 6000.0s, keep	●	

F1-32～F1-34		Keep			
F1-35 (0x0123)	Restart action selection after power failure	0	0: Invalid 1: valid	○	
F1-36 (0x0124)	Waiting time for restart after power failure	0.50s	0.00～60.00s	○	
F1-37 (0x0125)	Keep				
F1-38 (0x0126)	Jog running frequency setting	5.00Hz	0.00～Maximum frequency	●	
F1-39 (0x0127)	Jog acceleration time	10.00s	0.01～650.00s	●	
F1-40 (0x0128)	Jog deceleration time	10.00s	0.01～650.00s	●	

F2 Multi-function terminal parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F2-00 (0x200)	X1 terminal input function selection	1	Refer to attached list 4.21	○	
F2-01 (0x201)	X2 terminal input function	2	Refer to attached list 4.21	○	
F2-02 (0x202)	X3 terminal input function	4	Refer to attached list 4.21	○	
F2-03 (0x203)	X4 terminal input function	5	Refer to attached list 4.21	○	
F2-04 (0x204)	X1 ～ X4 terminal characteristics selection	0000	0: closed effective 1: open effective Ones place: X1 Tens place: X2 Hundreds: X3 Thousands: X4	●	
F2-05 (0x20A)	X1 effective detection delay	0.010	0.000～6.000s	●	

F2-06 (0x20B)	X1 invalid detection delay	0.010	0.000～6.000s	●	
F2-07 (0x20C)	X2 effective detection delay	0.010	0.000～6.000s	●	
F2-08 (0x20D)	X2 invalid detection delay	0.010	0.000～6.000s	●	
F2-09 (0x20E)	X3 effective detection delay	0.010	0.000～6.000s	●	
F2-10 (0x20F)	X3 invalid detection delay	0.010	0.000～6.000s	●	
F2-11 (0x210)	X4 effective detection delay	0.010	0.000～6.000s	●	
F2-12 (0x211)	X4 invalid detection delay	0.010	0.000～6.000s	●	
F2-13 (0x21A)	Terminal control operation mode	0	0: two-wire system 1 1: two-wire system 2 2: Three-wire system 1 3: three-wire system 2	○	
F2-14 (0x21B)	Terminal start protection	0111	0: off 1: open Unit digits: terminal start protection when exiting abnormally Tens place: Jog terminal start protection when abnormal exit Hundreds place: start protection when command channel is switched to terminal Thousands:keep	○	
F2-15 (0x21E)	HDI input minimum frequency	0.00kHz	0.00～50.00kHz	●	
F2-16 (0x21F)	HDI minimum frequency corresponding setting	0.00%	0.00～100.00%	●	

F2-17 (0x220)	HDI input maximum frequency	50.00kHz	0.00～50.00kHz	●	
F2-18 (0x221)	HDI maximum frequency corresponding setting	100.00%	0.00～100.00%	●	
F2-19 (0x222)	HDI filter time	0.100s	0.000～9.000s	●	
F2-20 (0x223)	HDI cutoff frequency	0.010kHz	0.000～1.000kHz	●	
F2-21 (0x224)	Terminal UP / DW control selection	0	0: Frequency power-down storage 1: Frequency is not stored when power is off 2: Adjustable during operation, reset when shutdown	○	
F2-22 (0x225)	Terminal UP / DW control frequency rate	0.50Hz/s	0.01～50.00Hz/s	●	
F2-23 (0x226)	Keep				
F2-24 (0x227)	Timer time unit	0	0: seconds 1: minutes 2: hours	●	
F2-25 (0x228)	Timer set value	0	0～65000	●	
F2-26 (0x229)	Keep			●	
F2-27 (0x22A)	Counter input frequency	0	0～6000	●	
F2-28 (0x22B)	Counter maximum	1000	0～65000	●	
F2-29 (0x22C)	Counter set value	500	0～65000	●	

F2-30 (0x22D)	HDO output function selection	0	0: given frequency 1: output frequency 2: output current 3: input voltage 4: Output voltage 5: mechanical speed 6: given torque 7: Output torque 8: PID given amount 9: PID feedback 10: Output power 11: bus voltage 12: AI input value 13: HDI input value 14: Module temperature 1 15: Communication given	●	Effective when Y terminal output is not functioning
F2-31 (0x22E)	Output terminal polarity selection	0000	0: positive polarity 1: negative polarity Single digit: Y terminal Tens place: Relay Hundreds, Thousands: Keep	●	
F2-32 (0x22F)	Y output terminal	1	Refer to attached list	●	
F2-33 (0x230)	Relay output	4	Refer to attached list	●	
F2-34 (0x232)	Y output delay time	0.010s	0.000～6.000s	●	
F2-35 (0x233)	Relay output delay	0.010s	0.000～6.000s	●	
F2-36 (0x235)	Output frequency level 1（FDT1）	30.00Hz	0.00～Maximum frequency	●	
F2-37 (0x236)	FDT1 lag	1.00Hz	0.00～Maximum frequency	●	
F2-38 (0x237)	Output frequency level 2（FDT2）	50.00Hz	0.00～Maximum frequency	●	

F2-39 (0x238)	FDT2 lag	1.00Hz	0.00～Maximum frequency	●	
F2-40 (0x239)	Detected value reaches the given frequency	2.00Hz	0.00～50.00Hz	●	
F2-41 (0x23A)	HDO lower output limit	0.20kHz	0.00～100.00kHz	●	
F2-42 (0x23B)	HDO output upper limit	50.00kHz	0.00～100.00kHz	●	

F3 Analog terminal parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F3-00 (0x300)	AI lower limit	0.00V	0.00～10.00V	●	
F3-01 (0x301)	AI lower limit corresponding setting	0.00%	-100.00～100.00%	●	
F3-02 (0x302)	AI upper limit	10.00V	0.00～10.00V	●	
F3-03 (0x303)	AI upper limit corresponding setting	100.00%	-100.00～100.00%	●	
F3-04 (0x304)	AI filter time	0.010s	0.000～6.000s	●	
F3-05 (0x305)	AI voltage / current selection	0	0: voltage 1: current	●	
F3-06 (0x30C)	AI terminal function selection	0	See X terminal functions	○	
F3-07 (0x30D)	AI high level setting	70.00%	0.00～100.00%	●	
F3-08 (0x30E)	AI low level setting	30.00%	0.00～100.00%	●	

F3-09 (0x312)	Analog to do terminal effective state setting	0	0: low level 1: high level	●	
F3-10 (0x313)	Analog input curve selection	0	0: straight 1: curve 1 2: curve 2	●	
F3-11 (0x314)	Keep				
F3-12 (0x315)	Curve 1 lower limit	0.00V	0.00～10.00V	●	
F3-13 (0x316)	Corresponding setting of curve 1 lower limit	0.0%	0.00～100.00%	●	
F3-14 (0x317)	Curve 1 inflection point 1 input voltage	3.00V	0.00～10.00V	●	
F3-15 (0x318)	Curve 1 inflection point 1 corresponding setting	30.00%	0.00～100.00%	●	
F3-16 (0x319)	Curve 1 inflection point 2 input voltage	6.00V	0.00～10.00V	●	
F3-17 (0x31A)	Curve 1 inflection point 2 corresponding setting	60.00%	0.00～100.00%	●	
F3-18 (0x31B)	Upper limit of curve 1	10.0V	0.00～10.00V	●	
F3-19 (0x31C)	Curve 1 upper limit corresponding setting	100.00%	0.00～100.00%	●	
F3-20 (0x31D)	Lower limit of curve 2	0.00V	0.00～10.00V	●	
F3-21 (0x31E)	Corresponding setting of curve 2 lower limit	0.00%	0.00～100.00%	●	

F3-22 (0x31F)	Curve 2 inflection point 1 input voltage	3.00V	0.00～10.00V	●	
F3-23 (0x320)	Curve 2 inflection point 1 corresponding setting	30.00%	0.00～100.00%	●	
F3-24 (0x321)	Curve 2 inflection point 2 input voltage	6.00V	0.00～10.00V	●	
F3-25 (0x322)	Curve 2 inflection point 2 corresponding setting	60.00%	0.00～100.00%	●	
F3-26 (0x323)	Upper limit of curve 2	10.00V	0.00～10.00V	●	
F3-27 (0x324)	Curve 2 upper limit corresponding setting	100.00%	0.00～100.00%	●	
F3-28 (0x325)	AO output signal selection	0	0：0～10V 1：4.00～20.00mA 2：0.00～20.00mA	●	

F3-29 (0x326)	AO output selection	0	0: given frequency 1: output frequency 2: output current 3: input voltage 4: Output voltage 5: mechanical speed 6: given torque 7: Output torque 8: PID given amount 9: PID feedback 10: Output power 11: bus voltage 12: AI input value 13: HDI input value 14: Module temperature 1 15: Communication given	●	
F3-30 (0x328)	AO output gain	100.0%	25.0～200.0%	●	
F3-31 (0x329)	AO output signal offset	0.0%	-10.0～10.0%	●	
F3-32 (0x32A)	AO output filtering	0.010s	0.000～6.000s	●	

F4 Keyboard Parameter Group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F4-00 (0x400)	Keyboard MF.K selection	0	0: reverse 1: Jog	○	
F4-01 (0x401)	Keyboard STOP key setting	1	0: Non-keyboard control mode is invalid 1: non-keyboard control mode, stop by stop mode 2: Non-keyboard control mode stops in free mode	○	
F4-02 (0x402)	Keyboard potentiometer	0.50V	0.00～5.00V	●	

F4-03 (0x403)	Corresponds to the lower limit of the keyboard potentiometer	0.00	0.00～100.00%	●	
F4-04 (0x404)	Keyboard potentiometer upper limit	4.50V	0.00～5.00V	●	
F4-05 (0x405)	Keyboard potentiometer upper limit correspondence	100.00	0.00～100.00%	●	
F4-06 (0x406)	Keyboard running display	2301	Unit digit: the first group displays 0 ～ 15 Tens place: the second group displays 0 ～ 15 Hundreds place: the third group displays 0 ～ 15 Thousands: the fourth group displays 0 ～ 15	●	
F4-07 (0x407)	Keyboard shutdown display	3210	Same as F4-06	●	
F4-08 (0x416)	Keyboard display item settings	0000	**Units: output frequency display selection** 0: target frequency 1: running frequency **Hundreds place: Power display dimension** 0: percentage (%) 1: Kilowatt (KW)	●	
F4-09	Keep				
F4-10 (0x408)	Speed display factor	100.0%	0.0～500.0%	●	
F4-11 (0x409)	Power display factor	100.0%	0.0～500.0%	●	

F5 Motor parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F5-00 (0x500)	Motor type	0	0: asynchronous motor (AM)	×	
F5-01 (0x501)	Number of motor poles	4	2～98	○	
F5-02 (0x502)	Motor rated power	Model settings	0.1～1000.0kW	※	
F5-03 (0x503)	Motor rated frequency	Model settings	0.01～Maximum frequency	※	
F5-04 (0x504)	Motor rated speed	Model settings	1～65000rpm	※	
F5-05 (0x505)	Motor rated voltage	Model settings	0～1500V	※	
F5-06 (0x506)	Motor rated current	Model settings	0.1～2000.0A	※	
F5-07 (0x507)	No-load current of	Model settings	0.1～650.0A	※	
F5-08 (0x508)	Stator resistance of asynchronous motor	Model settings	0.01～50.00%	※	
F5-09 (0x509)	Rotor resistance of asynchronous motor	Model settings	0.01～50.00%	※	
F5-10 (0x50A)	Stator leakage inductance of asynchronous motor	Model settings	0.01～50.00%	※	
F5-11 (0x50B)	Stator inductance of asynchronous motor	Model settings	0.1～2000.0%	※	
F5-12～F5-19		Keep			

F5-20 (0x514)	Motor parameter identification	0	0: No operation 1: rotation recognition 2: static identification 3: keep	○	S2 does not support parameter identification

F6 Vector control parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F6-00 (0x600)	Speed loop proportional gain 1	10.00	0.01～100.00	●	
F6-01 (0x601)	Speed loop integration time 1	0.200s	0.000～6.000s	●	
F6-02 (0x602)	Speed loop filter time 1	0.0ms	0.0～100.0ms	●	
F6-03 (0x603)	Speed loop switching frequency 1	0.00Hz	[F6-07] ～Upper frequency	●	
F6-04 (0x604)	Speed loop proportional gain 2	10.00	0.01～100.00	●	
F6-05 (0x605)	Speed loop integration time 2	0.200s	0.000～6.000s	●	
F6-06 (0x606)	Speed loop filter time 2	0.0ms	0.0～100.0ms	●	
F6-07 (0x607)	Speed loop switching frequency 1	5.00Hz	0.00～[F6-03]	●	
F6-08 (0x608)	Electric torque limit	180.0%	0.0～250.0%	●	
F6-09 (0x609)	Generation torque limit	180.0%	0.0～250.0%	●	

F6-10 (0x60A)	Proportional gain of current loop straight axis	1.000	0.001～4.000	●	
F6-11 (0x60B)	Current loop straight axis integral gain	1.000	0.001～4.000	●	
F6-12 (0x60C)	Current loop quadrature axis proportional gain	1.000	0.001～4.000	●	
F6-13 (0x60D)	Current loop quadrature axis integral gain	1.000	0.001～4.000	●	
F6-14 (0x60E)	Keep				
F6-15 (0x60F)	Vector electric slip compensation	100.0%	0.0～250.0%	●	
F6-16～F6-21					
F6-22 (0x616)	Overexcitation braking gain	100.0%	0.0～500.0%	○	
F6-23 (0x617)	Over-excitation braking limit	100.0%	0.0～250.0%	○	
F6-24 (0x618)	Vector control energy saving function	0	0: off 1: open	○	
F6-25 (0x619)	Energy saving control gain	50.0%	0.0～80.0%	●	
F6-26 (0x61A)	Energy-saving control low-pass filtering	0.010s	0.000～6.000s	●	

F6-27 (0x61B)	Motor constant power zone power limit	150.0%	0.0～250.0%	●	
F6-28～F6-69		Keep			

F8 V / F control parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attri butes	Note
F8-00 (0x0800)	Linear V / F curve selection	0	0: straight V / F; 1-9: 1.1-1.9 power V / F; 10: square V / F; 11: Multi-point V / F (F8-01 ～ F8-10);	○	
F8-01 (0x0801)	V / F voltage V1	3.0%	0.0～100.0%	○	
F8-02 (0x0802)	V / F frequency F1	1.00Hz	0.00～Maximum frequency	○	
F8-03 (0x0803)	V / F voltage V2	28.0%	0.0～100.0%	○	
F8-04 (0x0804)	V / F frequency F2	10.00Hz	0.00～Maximum frequency	○	
F8-05 (0x0805)	V / F voltage V3	55.0%	0.0～100.0%	○	
F8-06 (0x0806)	V / F frequency F3	25.00Hz	0.00～Maximum frequency	○	
F8-07 (0x0807)	V / F voltage V4	78.0%	0.0～100.0%	○	
F8-08 (0x0808)	V / F frequency F4	37.50Hz	0.00～Maximum frequency	○	
F8-09 (0x0809)	V / F voltage V5	100.0%	0.0～100.0%	○	
F8-10(0x080A)	V / F frequency F5	50.00Hz	0.00～Maximum frequency	○	
F8-11 (0x080B)	Output voltage percentage	100.0%	25.0～120.0%	○	

F8-12 (0x080C)	Torque boost	0.0%	0.0～30.0%	●	
F8-13 (0x080D)	Cut-off frequency of torque boost	100.0%	0.0～100.0%	●	
F8-14 (0x080E)	V / F slip compensation gain	100.0%	0.0～200.0%	●	
F8-15 (0x080F)	V / F slip compensation limit	100.0%	0.0～300.0%	●	
F8-16 (0x0810)	V / F slip compensation filtering	0.200s	0.000～6.000s	●	
F8-17 (0x0811)	Oscillation suppression gain	100.0%	0.0～900.0%	●	
F8-18 (0x0812)	Keep				
F8-19 (0x0813)	V / F automatic energy saving control	0	0: off 1: open	○	
F8-20 (0x0814)	Lower limit of energy-saving step-down frequency	15.00Hz	0.0～50.00Hz	○	
F8-21 (0x0815)	Energy-saving step-down voltage lower limit	50.0%	20.0～100.0%	○	
F8-22 (0x0816)	Energy-saving buck voltage regulation rate	0.010V/MS	0.000～0.200V/MS	●	
F8-23 (0x0817)	Energy saving buck voltage pick-up rate	0.200V/MS	0.000～2.000V/MS	●	
F8-24～F8-29		Keep			

F9 Enhanced Function Parameter Group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
F9-00 (0x0900)	Jump frequency 1	0.00Hz	0.00～Maximum frequency	●	
F9-01 (0x0901)	Jump frequency amplitude 1	0.00Hz	0.00～Maximum frequency	●	
F9-02 (0x0902)	Jump frequency 2	0.00Hz	0.00～Maximum frequency	●	
F9-03 (0x0903)	Jump frequency amplitude 2	0.00Hz	0.00～Maximum frequency	●	
F9-04～F9-07		Keep			
F9-08 (0x0908)	Swing frequency control	0	0: Swing frequency is invalid 1: Swing frequency is valid	●	
F9-09 (0x0909)	Swing frequency amplitude control	0	0: relative center frequency 1: Relative maximum frequency	●	
F9-10	Keep				
F9-11 (0x090B)	Swing frequency amplitude	10.0%	0.0～100.0%	●	
F9-12 (0x090C)	Kick frequency amplitude	10.0%	0.0～50.0%	●	
F9-13 (0x090D)	Swing frequency rise time	5.00s	0.00～650.00s	●	
F9-14 (0x090E)	Swing frequency fall time	5.00s	0.00～650.00s	●	

F9-15 (0x090F)	Fan control	1	0: Fan runs after inverter is powered on 1: Shutdown is related to temperature, and running is running 2: The shutdown fan stops, and the operation is related to temperature	●	
F9-16 (0x0910)	Energy consumption braking enabled	0	0: off 1: open	●	
F9-17 (0x0911)	Energy consumption braking action voltage	135.0%	115.0%～150.0%	●	
F9-18 (0x0912)	Energy use brake usage	10.0%	0.0～100.0%	●	
F9-19～F9-20		Keep			

FA Protection and fault parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
FA-00 (0xA00)	Overcurrent suppression function	0	0: Suppression is always effective 1: acceleration / deceleration is valid, constant speed is invalid	●	
FA-01 (0xA01)	Overcurrent suppression point	160.0%	0.0 ～ 300.0%	●	
FA-02 (0xA02)	Overcurrent suppression gain	100.0%	0.0 ～ 500.0%	●	
FA-03 (0xA03)	Current hardware protection settings	0001	**Unit place: current-by-wave current limiting (CBC)** 0: off 1: open **Tens place: keep**	○	

			Hundreds: OC protection interference suppression 0: off 1: First level interference suppression 2: Secondary interference suppression **Thousands: keep**		
FA-04～FA-05		Keep			
FA-06 (0xA06)	Bus overvoltage suppression function	0012	**Unit place: overvoltage suppression control** 0: Forbidden 1: Deceleration is effective 2: Enable during acceleration and deceleration **Tenth place: overexcitation control** 0: off 1: open **Hundreds and Thousands: keep**	○	
FA-07 (0xA07)	Bus overvoltage suppression point	130.0%	110.0～150.0%	※	
FA-08 (0xA08)	Bus overvoltage suppression gain	100.0%	0.0～500.0%	●	
FA-09 (0xA09)	Bus undervoltage suppression function	0	0: Forbidden 1: enable	○	
FA-10 (0xA0A)	Bus undervoltage suppression point	80.0%	60.0～90.0%	※	

FA-11 (0xA0B)	Bus undervoltage suppression gain	100.0%	0.0～500.0%	●	
FA-12 (0xA0C)	Bus undervoltage protection point	60.0%	60.0～90.0%	※	
FA-13 (0xA0D)	Keep				
FA-14 (0xA0E)	Power-to-ground short-circuit detection	0	0: off 1: open	○	
FA-15 (0xA0F)	Phase loss protection	0011	**Unit place: output phase loss protection** 0: off 1: open **Tens place: input phase loss protection** 0: off 1: enable alarm 2: open failure **Hundreds and thousands: reserved**	○	
FA-16 (0xA10)	Motor overload protection factor	100.0%	0.0～250.0%	○	

FA-17 (0xA11)	Load warning checkout setting	0000	**Unit place: checkout selection (protection 1)** 0: No detection 1: detection load is too large 2: Only at constant speed detects excessive load 3: detection of insufficient load 4: Detects insufficient load only at constant speed **Tens place: Alarm selection** 0: Alarm, continue running 1: fault protection action and free stop **Hundreds: Check Out Selection (Protection 2)** 0: No detection 1: detection load is too large 2: Only at constant speed detects excessive load 3: detection of insufficient load 4: Detects insufficient load only at constant speed **Thousands: Alarm selection** 0: Alarm, continue running 1: fault protection action and free stop	○	
FA-18 (0xA12)	Load early detection level 1	130.0%	0.0～200.0%	○	
FA-19 (0xA13)	Load warning detection time 1	5.0s	0.0～60.0s	○	

FA-20 (0xA14)	Load early detection level 2	30.0%	0.0～200.0%	○	
FA-21 (0xA15)	Load warning detection time 2	5.0s	0.0～60.0s	○	
FA-22 (0xA16)	Keep				
FA-23 (0xA17)	Excessive speed deviation protection action	0000	**Unit place: checkout selection** 0: No detection 1: only at constant speed 2: Always detect **Tens place: Alarm selection** 0: Free stop and report fault 1: Alarm and continue operation **Hundreds and thousands: reserved**	○	
FA-24 (0xA18)	Excessive speed deviation detection threshold	10.0%	0.0～60.0%	○	
FA-25 (0xA19)	Excessive speed deviation detection time	2.0s	0.0～60.0s	○	
FA-26 (0xA1A)	Rapid protection action	0000	**Unit place: checkout selection** 0: No detection 1: only at constant speed 2: Always detect **Tens place: Alarm selection** 0: Free stop and report fault 1: Alarm and continue operation **Hundreds and thousands: reserved**	○	

FA-27 (0xA1B)	Fast detection threshold	110.0%	0.0～150.0%	○	
FA-28 (0xA1C)	Fast detection time	0.010s	0.000～2.000s	○	
FA-29～FA-36		Keep			
FA-37 (0xA25)	Failure self-recovery times	0	0～5	○	
FA-38 (0xA26)	Failure self-recovery interval	1.0s	0.1～100.0s	○	
FA-39 (0xA27)	Troubleshooting information	--	See fault message code table for details	×	
FA-40 (0xA28)	Fault type	--	See fault message code table for details	×	
FA-41 (0xA29)	Fault operating frequency	--	0.00～Maximum frequency	×	
FA-42 (0xA2A)	Fault output voltage	--	0～1500V	×	
FA-43 (0xA2B)	Fault output current	--	0.1～2000.0A	×	
FA-44 (0xA2C)	Fault bus voltage	--	0～3000V	×	
FA-45 (0xA2D)	Failure module temperature	--	0～100℃	×	
FA-46 (0xA2E)	Fault inverter status	--	**Unit place: running direction** 0: forward 1: reverse **Tens place: running status** 0: shutdown 1: speed up 2: slow down 3: constant speed **Hundreds and thousands: reserved**	×	
FA-47 (0xA2F)	Fault input terminal status	--	See input terminal state diagram	×	

FA-48 (0xA30)	Fault output terminal status	--	See output terminal state diagram	×	
FA-49 (0xA31)	Previous failure type	--	See fault message code table for details	×	
FA-50 (0xA32)	Frequency of previous fault operation	--	0.00～Maximum frequency	×	
FA-51 (0xA33)	Last fault output voltage	--	0～1500V	×	
FA-52 (0xA34)	Last fault output current	--	0.1～2000.0A	×	
FA-53 (0xA35)	Last faulted bus voltage	--	0～3000V	×	
FA-54 (0xA36)	Last failed module temperature	--	0～100°C	×	
FA-55 (0xA37)	Status of the previous fault inverter	--	**Unit place: running direction** 0: forward 1: reverse **Tens place: running status** 0: shutdown 1: steady speed 2: speed up 3: slow down **Hundreds and thousands: reserved**	×	
FA-56 (0xA38)	Last fault input terminal status	--	See input terminal state diagram	×	
FA-57 (0xA39)	Last fault output terminal status	--	See output terminal state diagram	×	
FA-58 (0xA3A)	First two failure types	--	See fault message code table for details	×	
FA-59 (0xA3B)	First three failure types	--	See fault message code table for details	×	

Group Fb: PID control parameter group

Function code	Function code name	Factory default	Setting value range and definition	Attributes	Note

Fb-00 (0xB00)	PID controller given signal source	0	0: Keyboard numeric PID given 1: keyboard potentiometer given 2: Analog AI given 3: Pulse HDI given 4: RS485 communication given 5: Optional card 6: terminal selection	●	
Fb-01 (0xB01)	Keyboard number PID given / feedback	50.0%	0.00～100.0%	●	
Fb-02 (0xB02)	PID given acceleration and deceleration time	1.00s	0.00～60.00s	●	
Fb-03 (0xB03)	PID controller feedback signal source	2	0: Keyboard numeric PID given 1: keyboard potentiometer given 2: Analog AI given 3: Terminal pulse HDI reference 4: RS485 communication given 5: Optional card 6: terminal selection	●	
Fb-04 (0xB04)	Low-pass filtering time of feedback signal	0.010s	0.000～6.000s	●	
Fb-05 (0xB05)	Feedback signal gain	1.00	0.00～10.00	●	
Fb-06 (0xB06)	Maximum feedback signal range	100.0	0～100.0	●	

Fb-07 (0xB07)	PID control selection	0100	**Unit place: feedback characteristic selection** 0: Positive characteristic 1: negative characteristics **Tens place: closed-loop bypass hold output** 0: Output is cleared when closed loop bypass 1: Output hold when closed loop bypass **Hundreds: alignment selection** 0: non-center aligned 1: center-aligned **Thousands: Differential Adjustment Properties** 0: Differentiate the deviation 1: Differentiate feedback	●	
Fb-08 (0xB08)	PID preset output	100.0%	0.0～100.0%	●	
Fb-09 (0xB09)	PID preset output running time	0.0s	0.0～6500.0s	●	
Fb-10 (0xB0A)	PID control deviation limit	0.0%	0.0～100.0%	●	
Fb-11 (0xB0B)	Proportional gain P1	0.100	0.000～8.000	●	
Fb-12 (0xB0C)	Integration time I1	1.0s	0.0～600.0s	●	
Fb-13 (0xB0D)	Differential gain D1	0.000s	0.000～6.000s	●	
Fb-14 (0xB0E)	Proportional gain P2	0.100	0.000～8.000	●	
Fb-15 (0xB0F)	Integration time I2	1.0s	0.0～600.0s	●	
Fb-16 (0xB10)	Differential gain D2	0.000s	0.000～6.000s	●	

Fb-17 (0xB11)	PID parameter switching conditions	0	0: Do not switch 1: X terminal switching 2: switch based on deviation	●	
Fb-18 (0xB12)	Low switching deviation	20.0%	0.0～100.0%	●	
Fb-19 (0xB13)	High switching deviation	80.0%	0.0～100.0%	●	
Fb-20 (0xB14)	Keep				
Fb-21 (0xB15)	Differential clipping	5.0%	0.0～100.0%	●	
Fb-22 (0xB16)	PID output upper limit	100.0%	0.0～100.0%	●	
Fb-23 (0xB17)	PID output lower limit	0.0%	0.0～[Fb-22]	●	
Fb-24 (0xB18)	PID output filter time	0.0s	0.000～6.000s	●	
Fb-25 (0xB19)	Feedback disconnection detection time	1.0s	0.0～120.0s	●	
Fb-26 (0xB1A)	Feedback disconnection action selection	0	0: Continue without failure 1: Stop and report failure 2: keep running, output alarm 3: Run at current frequency and alarm	●	
Fb-27 (0xB1B)	Disconnection alarm upper limit	100.0%	0.0～100.0%	●	
Fb-28 (0xB1C)	Disconnection alarm lower limit	0.0%	0.0～100.0%	●	
Fb-29 (0xB1D)	Sleep selection	0	0: off 1: open	●	
Fb-30 (0xB1E)	Sleep frequency	30.00Hz	0.00～50.00Hz	●	

Fb-31 (0xB1F)	Sleep delay	3.0S	0.0～3600.0S	●	
Fb-32 (0xB20)	Wake-up bias	5.0%	0.0～50.0%	●	
Fb-33 (0xB21)	Wake-up delay	0.0S	0.0～60.0S	●	

Fc group: Multi-speed, PLC function parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
FC-00 (0xC00)	Multi-band frequency 1	10.00Hz	0.00～Maximum frequency	●	
FC-01 (0xC01)	Multi-band frequency 2	20.00Hz	0.00～Maximum frequency	●	
FC-02 (0xC02)	Multi-band frequency 3	30.00Hz	0.00～Maximum frequency	●	
FC-03 (0xC03)	Multi-band frequency 4	40.00Hz	0.00～Maximum frequency	●	
FC-04 (0xC04)	Multi-band frequency 5	50.00Hz	0.00～Maximum frequency	●	
FC-05 (0xC05)	Multi-band frequency 6	40.00Hz	0.00～Maximum frequency	●	
FC-06 (0xC06)	Multi-band frequency 7	30.00Hz	0.00～Maximum frequency	●	
FC-07 (0xC07)	Multi-band frequency 8	20.00Hz	0.00～Maximum frequency	●	
FC-08 (0xC08)	Multi-band frequency 9	10.00Hz	0.00～Maximum frequency	●	
FC-09 (0xC09)	Multi-band frequency 10	20.00Hz	0.00～Maximum frequency	●	
FC-10 (0xC0A	Multi-band frequency 11	30.00Hz	0.00～Maximum frequency	●	
FC-11 (0xC0B)	Multi-band frequency 12	40.00Hz	0.00～Maximum frequency	●	
FC-12 (0xC0C)	Multi-band frequency 13	50.00Hz	0.00～Maximum frequency	●	
FC-13 (0xC0D	Multi-band frequency 14	40.00Hz	0.00～Maximum frequency	●	

FC-14 (0xC0E)	Multi-band frequency 15	30.00Hz	0.00～Maximum frequency	●	
FC-15 (0xC0F)	Multi-band frequency operation mode selection	0000	**Unit place: circular mode** 0: single cycle 1: continuous loop 2: Keep the final value after a single cycle **Tens place: timing unit** 0: seconds 1 point 2 hours **Hundreds: power-down storage mode** 0: Do not store 1: storage **Thousands: start way** 0: Re-run from the first stage 1: Re-run from the downtime phase 2: Continue to run with the remainder of the downtime phase	●	
FC-16 (0xC10)	Multi-band frequency 1 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-17 (0xC11)	Multi-band frequency 2 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-18 (0xC12)	Multi-band frequency 3 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-19 (0xC13)	Multi-band frequency 4 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-20 (0xC14)	Multi-band frequency 5 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-21 (0xC15)	Multi-band frequency 6 runtime	10.0	0.0～6500.0(s/m/h)	●	

FC-22 (0xC16)	Multi-band frequency 7 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-23 (0xC17)	Multi-band frequency 8 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-24 (0xC18)	Multi-band frequency 9 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-25 (0xC19)	Multi-band frequency 10 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-26 (0xC1A)	Multi-band frequency 11 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-27 (0xC1B)	Multi-band frequency 12 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-28 (0xC1C)	Multi-band frequency 13 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-29 (0xC1D)	Multi-band frequency 14 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-30 (0xC1E)	Multi-band frequency 15 runtime	10.0	0.0～6500.0(s/m/h)	●	
FC-31 (0xC1F)	Multi-band frequency 1-15 direction and acceleration / deceleration time	0000	**Unit place: the running direction of this paragraph** 0: forward 1: reverse **Tens place: acceleration / deceleration time of this paragraph** 0: acceleration / deceleration	●	
FC-32 (0xC20)		0000		●	
FC-33 (0xC21)		0000		●	
FC-34 (0xC22)		0000		●	

FC-35 (0xC23)		0000		●	
FC-36 (0xC24)		0000		●	
FC-37 (0xC25)		0000		●	
FC-38 (0xC26)		0000		●	
FC-39 (0xC27)		0000		●	
FC-40 (0xC28)		0000		●	
FC-41 (0xC29)		0000		●	
FC-42 (0xC2A		0000		●	
FC-43 (0xC2B)		0000		●	
FC-44 (0xC2C)		0000		●	
FC-45 (0xC2D		0000		●	
FC-46 ～ FC-48	Keep				

Fd group: communication function parameter group

Function code number	Function code name	Factory default	Setting value range and definition	Attributes	Note
Fd-00 (0xD00)	Master-slave selection	0	0: slave 1: host	○	
Fd-01 (0xD01)	Communication address	1	1～247	○	

Fd-02 (0xD02)	Communication baud rate selection	3	0; 1200 bps 1: 2400 bps 2: 4800 bps 3: 9600 bps 4: 19200 bps 5: 38400 bps	○	
Fd-03 (0xD03)	Modbus data format	0	0: (N, 8, 1) 1: (E, 8,1) 2: (O, 8,1) 3: (N, 8, 2) 4: (E, 8, 2) 5: (O, 8, 2)	○	
Fd-04 (0xD04)	Communication ratio setting	1.00	0.00～5.00	●	
Fd-05 (0xD05)	Communication response delay	0ms	0～500ms	●	
Fd-06 (0xD06)	Communication timeout failure time	1.0s	0.1～100.0s	●	
Fd-07 (0xD07)	Communication failure action selection	0	0: No detection 1: alarm and free stop 2: Warning continues to run 3: forced shutdown	●	
Fd-08 (0xD08)	Transmission response processing	0	0: Have response 1: No response	●	

Fd-09 (0xD09)	Host send selection	0031	**Unit place: the first group of transmission frame selection** 0: Invalid 1: Run the command 2: given frequency 3: output frequency 4: upper limit frequency 5: given torque 6: Output torque 7, 8: reserved 9: PID given A: PID feedback **Tens place: Same as above** **Hundreds place: The selection of the third group of sending frames is the same as above** **Thousands: The selection of the fourth group of transmission frames is the same as above**	●	
Fd-10 (0xD0A)	RS485 communication port configuration	0	0: Modbus communication 1: other protocols	●	

Group C0: Monitoring code

Function code number	Function code name	Function code number	Function code name
C0-00(0x2100)	Given frequency	C0-01(0x2101)	Output frequency
C0-02(0x2102)	Output current	C0-03(0x2103)	Bus voltage
C0-04(0x2104)	Output voltage	C0-05(0x2105)	Mechanical speed
C0-06(0x2106)	Input voltage	C0-07(0x2107)	Input frequency

Function code number	Function code name	Function code number	Function code name
C0-08(0x2108)	Given torque	C0-09(0x2109)	Output torque
C0-10(0x210C)	PID given amount	C0-11(0x210D)	PID feedback
C0-12(0x210E)	Module temperature 1	C0-13(0x210F)	Input terminal X is on
C0-14(0x2110)	Output terminal Y is on	C0-15(0x2111)	Analog AI input value
C0-16(0x2112)	Pulse signal HDI input value	C0-17(0x2113)	Analog output AO
C0-18(0x2114)	HDO output frequency	C0-19(0x2115)	Counter count value
C0-20(0x2116)	Running time of this power-on	C0-21(0x2117)	Cumulative running time of the machine
C0-22(0x2118)	Power factor angle	C0-23(0x2119)	Inverter power level
C0-24(0x211A)	Inverter rated voltage	C0-25(0x211B)	Inverter rated current
C0-26(0x211C)	Software version		

4.21 Terminal input and output function selection

X selection	Functional paraphrase	X selection	Functional paraphrase	X selection	Functional paraphrase
0	No function	21	PID control suspended	42	Counter clock input
1	Forward running	22	PID characteristic switching	43	Counter clear terminal
2	Reverse running	23	PID gain switching	44	DC brake command
3	Three-wire operation control (Xi)	24	PID reference switch 1	45	Pre-excitation command terminal
4	Forward jog	25	PID reference switch 2	46	Motor selection terminal
5	Reverse jog	26	PID reference switch 3	47	Keep
6	Free parking	27	PID feedback switching 1	48	Command channel switch to keyboard

7	emergency pull over	28	PID feedback switching 2	49	Command channel switch to terminal
8	Fault reset	29	PID feedback switching 3	50	Command channel switch to communication
9	External fault input	30	Program run (PLC) paused	51	Keep
10	Frequency increase (UP)	31	Program run (PLC) restart	52	Operation prohibited
11	Decreasing frequency (DW)	32	Acceleration / deceleration time terminal 1	53	Forward rotation prohibited
12	UP / DW clear	33	Acceleration / deceleration time terminal 2	54	Reverse prohibition
13	Channel A to Channel B	34	Acceleration / deceleration pause	55	Keep
14	Frequency channel switched to A	35	Swing frequency input	56	Keep
15	Frequency channel switched to B	36	Swing frequency pause	57	Keep
16	Multi-speed terminal 1	37	Swing frequency reset	58	Keep
17	Multi-speed terminal 2	38	Keep	59	Keep
18	Multi-speed terminal 3	39	Keep	60	Keep
19	Multi-speed terminal 4	40	Timer trigger terminal	61	Keep
20	PID control canceled	41	Timer clear terminal	62	Keep
Y selection	**Functional paraphrase**	**Y selection**	**Functional paraphrase**	**Y selection**	**Functional paraphrase**
0	No output (Y output HDO signal)	11	Arrived at a given frequency	23	Counter reaches set value
1	Inverter running	12	Zero speed operation	24	Energy braking
2	Inverter running in reverse	13	Upper frequency reached	25	PG feedback disconnected
3	Inverter is running in forward rotation	14	Lower limit frequency reached	26	Emergency stop

4	Fault trip alarm 1 (alarm during fault self-recovery)	15	Program run cycle completed	27	Load pre-alarm output 1
5	Fault trip alarm 2 (no alarm during fault self-recovery)	16	The program operation phase is completed.	28	Load pre-alarm output 2
6	External fault shutdown	17	PID feedback exceeds the upper limit	29	Motor overload pre-alarm
7	Inverter undervoltage	18	PID feedback is below the lower limit	30	RS485 given
8	The inverter is ready for operation	19	PID feedback sensor disconnected		The code of no explanation retention
9	Output frequency level detection 1 (FDT1)	21	Timer timeout		
10	Output frequency level detection 2 (FDT2)	22	Counter reaches maximum		

4.22 Fault code table

Communication code	Fault display	Fault name	Troubleshooting	Solution
1	E. SC	System exception	● The acceleration time is set too short; ● The output of the inverter is short-circuited between phases or to ground; ● The module is damaged; ● Electromagnetic interference	● Prolong the acceleration time appropriately; ● Check peripheral equipment and restart after troubleshooting; ● Seek technical support from manufacturers; ● Check the wiring, grounding, and shielding.
4	E.oC1	Overcurrent during acceleration	● The acceleration time is set too short; ● Start the rotating motor; ● The capacity of the inverter is too small.	● Prolong the acceleration time appropriately; ● The motor stops or restarts after speed tracking; ● Use inverters with matching capacity levels
5	E.oC2	Overcurrent during	● The deceleration time is set too short;	● Prolong the deceleration time appropriately;

Communication code	Fault display	Fault name	Troubleshooting	Solution
		deceleration	● Large potential energy load or load inertia; ● The capacity of the inverter is too small.	● External braking resistor or braking unit; ● Select the inverter with matching capacity level.
6	E.oC3	Overcurrent at constant speed	● Sudden load change; ● The grid voltage is low.	● Check the change of load and eliminate it; ● Check the input power and remove the fault.
7	E.oU1	Overvoltage during acceleration	● Power supply voltage fluctuation exceeds the limit; ● Start the rotating motor.	● Detect the grid voltage and remove the fault; ● The motor stops or restarts after speed tracking;
8	E.oU2	Overvoltage during deceleration	● The deceleration time is set too short; ● Load potential energy or inertia is too large; ● The power supply voltage has exceeded the limit.	● Prolong the deceleration time appropriately; ● Increase the capacity of the inverter or add a braking unit; ● Check the input power and remove the fault.
9	E.oU3	Constant speed over voltage	● Power supply voltage fluctuations are out of limits.	● Check the input power and remove the fault;
10	E.LU2	Bus undervoltage	● The power supply voltage is too low; ● There is a large inrush current in the power grid; ● The internal DC main contactor is not closed.	● Check the input power and remove the fault; ● Improve the power supply system; ● Seek technical support from the manufacturer.
11	E.oL1	Motor overload	● The grid voltage is low; ● Motor overload protection coefficient is not set properly; ● The motor is stalled or the load is too heavy; ● Low speed running.	● Check the input power; ● Use inverters with matching capacity levels; ● For long-term low-speed operation, select a dedicated motor. ● Speed regulation overload coefficient
12	E.oL2	Inverter overload	● The load is too heavy ● The acceleration time is set too short; ● Start the rotating motor;	● Use inverters with matching capacity levels; ● Prolong the acceleration time appropriately; ● The motor stops or restarts after speed tracking;

Communication code	Fault display	Fault name	Troubleshooting	Solution
13	E.ILF	Input phase loss	● The input power is abnormal; ● The internal circuit is abnormal;	● Check the input power; ● Seek technical support from the manufacturer.
14	E.oLF	Output phase loss	● The three-phase output of the inverter is lacking.	● Check the output voltage, current and motor wiring;
15	E.oH2	Rectifier overheating	● The ambient temperature is too high; ● The air duct is blocked or the fan is abnormal; ● The temperature detection circuit is faulty.	● Make the operating environment of the inverter meet the specifications; ● Drain the air duct or replace the fan of the same model; ● Seek technical support from the manufacturer.
16	E.oH1	Inverter overheating	● The ambient temperature is too high; ● The air duct is blocked or the fan is abnormal; ● The temperature detection circuit is faulty.	● Make the operating environment of the inverter meet the specifications; ● Drain the air duct or replace the fan of the same model; ● Seek technical support from the manufacturer.
17	E. EF	External fault	● External equipment failure protection action.	● Check external equipment.
18	E.SE1	Communication failure	● The baud rate is set incorrectly; ● Communication connection is broken; ● The communication format does not match the host computer.	● Set the matching baud rate; ● Check communication connections; ● Set the matching communication format.
19	E.HAL	Current detection failure	● Detection circuit failure; ● Motor phase imbalance.	● Seek technical support; ● Check the motor and wiring.
20	E.AT1	Motor static self-learning	● Motor detection timeout; ● Start static detection while the motor is rotating; ● The difference between the capacity of the motor and the inverter is too large;	● Check the motor wiring; ● Test after the motor stops steady; ● Replace the inverter model; ● Reset according to the motor nameplate.

Communication code	Fault display	Fault name	Troubleshooting	Solution
			v The motor parameters are set incorrectly.	
21	E.EEP	EEPROM failure	●Electromagnetic interference during storage; ● EEPROM is damaged.	● Re-enter and save; ● Seek technical support from the manufacturer.
25	E.AT2	Motor dynamic self-learning	●Start detection while the motor is rotating; ● Motor with load detection; ● Motor detection timeout; ● The difference between the capacity of the motor and the inverter is too large; ● The motor parameters are set incorrectly.	●Test after the motor stops steady; ● Disconnect the motor load and re-test; ● Check the motor wiring; ● Replace the inverter model; ● Reset according to the motor nameplate.
27	E. PG	Expansion card connection error	● The connection between the PG card and the inverter is faulty.	● Check the connection
28	E.OU4	Overvoltage during shutdown	● Power supply voltage fluctuations are out of limits.	● Check the input power and remove the fault; ● Seek technical support from the manufacturer.
29	E.PID	PID disconnection fault	● PID feedback disconnect alarm upper limit ● PID feedback disconnection alarm lower limit ● The feedback sensor is faulty or badly wired	● Check the sensor status ● Correct wiring ● Confirm the setting values of Fb-27 and Fb-28
30	E.rSV	Keep		

Chapter Five Regular Inspection and Maintenance

5.1 Inspection

The inverter is composed of semiconductor devices, passive electronic devices, and motion devices, and these devices have a service life. Even under normal working conditions, if the service life is exceeded, some devices may have characteristics changes or failure. In order to prevent this phenomenon from causing failures, preventive inspection and maintenance such as daily inspection, periodic inspection, and device replacement must be performed. It is recommended to check every 3 to 4 months after the machine is installed.

- Daily inspection: In order to avoid damage to the inverter and shorten its service life, please check the following items daily.

Check item	Check content	Preventive solution
Power supply	Check whether the supply voltage meets the requirements and whether there is a lack of phase power supply	Solve according to the nameplate requirements.
Surroundings	Whether the installation environment meets the	Confirm the source and solve it properly.
cooling system	Check whether the inverter and motor have abnormal heating and discoloration, and the working condition of the cooling fan.	Check whether there is overload, tighten the screws, whether the heat sink of the inverter is dirty, and check whether the fan is blocked.
Motor	Check if any abnormal vibration and noise of the motor.	Tighten mechanical and electrical connections and lubricate mechanical parts.
Load condition	Whether the inverter output current is higher than the rated value of the motor or inverter and lasts for a certain period of time.	Check if there is any overload situation and check if the inverter selection is correct.

● Periodic inspection: In general, it is advisable to conduct periodic inspections every 3 to 4 months, but in actual situations, please determine the actual inspection cycle based on the use of each machine and the working environment.

Check item	Check content	Preventive solution
Overall	Insulation resistance check; environmental check.	Tighten and replace defective parts; clean and improve the operating
Electrical connections	● Whether there is any discoloration of the wires and connection parts, whether the insulation layer is damaged, cracked, discolored, and aged; ● Whether the connection terminals are worn, damaged, or loose; ● Ground check.	● Replace damaged wires; ● Tighten loose terminals and replace damaged terminals; ● Measure the ground resistance and tighten the corresponding ground terminal.
Mechanical connection	● Whether there is abnormal vibration and noise, and whether there is loosening.	● Tighten, lubricate, and replace defective parts.
Semiconductor device	● Whether it is stained with garbage and dust; ● Whether there is a noticeable change in appearance.	● Clean operating environment; ● Replace damaged parts.
Electrolytic capacitor	● Check for leaks, discoloration, cracks, and exposed, swollen, cracked, or leaking safety valves.	● Replace damaged parts.
Peripheral equipment	● Appearance and insulation inspection of peripheral equipment.	● Clean the environment and replace damaged parts.
Printed circuit board	● Check if there is any odor, discoloration, severe rust, and whether the connector is correct and reliable.	● Fastening connection ● Clean the printed circuit board; ● Replace damaged printed circuit boards;
Cooling system	● Whether the cooling fan is damaged or blocked; ● Whether the heat sink is stained with garbage, dust, or dirt; ● Whether the air intake or exhaust is blocked or contaminated with foreign objects.	● Clean operating environment; ● Replace damaged parts.
Keyboard	● Whether the keyboard is broken or display is broken.	● Replace damaged parts.
Motor	● Whether the motor has abnormal vibration and abnormal sound.	● Tighten mechanical and electrical connections and lubricate the motor

Attention:

Do not perform related operations with the power on, otherwise there is a danger of death due to electric shock. When carrying out related work, please cut off the power and confirm that the DC voltage of the main circuit has dropped to a safe level. Wait 5 minutes before carrying out related work.

5.2 Maintenance

All equipment and components have a service life. Correct maintenance can extend the service life, but it cannot solve the damage to the equipment and components. Please replace the components according to requirements.

Part name	Life cycle	Part name	Life cycle	Part name	Life cycle
Fan	2~3 years	Electrolytic capacitor	4~5 years	Printed circuit board	8~10 years

The replacement of other components requires very strict maintenance technology and product familiarity, and after replacement, it must be strictly tested before it can be used. Therefore, it is not recommended that users replace other internal components by themselves. If it really needs to be replaced, please contact the agent where you purchased the product or our sales department.

Appendix: Modbus communication protocol

● Communication frame structure

The communication data format is as follows:

Byte composition: including start bit, 8 data bits, check bit and stop bit.

Start bit	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7	Bit8	Check bit	Stop bit

A frame of information must be transmitted as a continuous data stream. If the interval of more than 1.5 bytes before the end of the entire frame is transmitted, the receiving device will clear these incomplete information and mistakenly believe that the next byte is a new one. The address field portion of the frame. Similarly, if the interval between the start of a new frame and the previous frame is less than 3.5 bytes, the receiving device will consider it to be a continuation of the previous frame. Due to the frame chaos, the final CRC check value is incorrect, resulting in communication error.

● Communication control parameter group address description

Function Description	Address definition	Meaning of data		R / W characte
Communication given frequency	0x3000 or 0x2000	0 ～ 32000 corresponds to 0.00Hz ～ 320.00Hz		W/R
Communication command setting	0x3001 or 0x2001	0000H: No command 0001H: forward running 0002H: Reverse operation 0003H: forward jog	0005H: Slow down 0006H: Free stop 0007H: Fault reset 0008H: Run prohibited command 0009H: Run enable command	W/R

Function Description	Address definition	Meaning of data			R / W characte
		0004H: Reverse jog			
Inverter status	0x3002 or 0x2002	Bit0	0: Stop status	1: Operating statusz	R
		Bit1	0: non-accelerated state	1: Accelerated state	
		Bit2	0: non-deceleration state	1: Deceleration state	
		Bit3	0: forward	1: reverse	
		Bit4	0: No fault	1: Inverter failure	
		Bit5	0: GPRS unlock	1: GPRS lock status	
		Bit6	0: No warning	1: inverter warning	
Inverter fault code	0x3003 or 0x2003	Inverter current fault code (see fault code table)			R
Communication given upper limit frequency	0x3004 or 0x2004	0～32000 corresponds to 0.00Hz～320.00Hz			W/R
Communication torque setting	0x3005 or 0x2005	0～1000 corresponds to 0.0～100.0%			W/R
Torque control forward maximum frequency limit	0x3006 or 0x2006	0～1000 corresponds to 0.0～100.0%			W/R
Torque control reverse maximum frequency limit	0x3007 or 0x2007	0～1000 corresponds to 0.0～100.0%			W/R

Function Description	Address definition	Meaning of data		R / W characte
Communication given PID set value	0x3008 or 0x2008	0～1000 corresponds to 0.0～100.0%		W/R
Communication given PID feedback value	0x3009 or 0x2009	0～1000 corresponds to 0.0～100.0%		W/R
Failure and warning code reading	0x3010 or 0x2010	0-63 is fault code 64- is warning code		R
Output terminal status	0x3010 or 0x2010	Externally borrow the inverter output terminal, BII0 -- Y	BIT1-- TA1-TB1-TC1; BIT2 -- TA2-TB2-TC2	R
AO1 output	0x3021 or 0x2021	0-10000 corresponding output 0-10V, 0-20mA		R

Note: For other function code addresses, see the "Communication Address" column in the function code list.

When using the write command (06H) to write the parameters of the F00 ~ FF parameter group, if the highest-order bit of the function code parameter address field is 0, it is only written into the inverter RAM and is not stored after power-off; if the high-order nibble of the function code parameter address field For 1, write to EEPROM, that is, power-down storage. Such as F00 group: 0x00XX (write RAM) 0x10XX (stored in EEPROM).

●The meaning of the error code of the slave responding to the exception message

Error code	Description	Error code	Description	Error code	Description
1	Command code error	3	CRC check error	4	Illegal address
5	Illegal data	6	Parameters cannot be changed during operation	8	Inverter is busy (EEPROM is being stored)
9	Parameter value exceeded	10	Reserved parameters cannot be changed	11	Wrong number of parameter bytes read

KEVAN

Warranty Card

User information

User name: _____

User address: _____

Contact: _____

Tel: _____

Tax: _____

Machine type: _____

Machine code: _____

Agent / Reseller Information

Supplier: _____

Contact: _____

Tel: _____

Delivery date: _____

Warranty

The company solemnly promises that users will enjoy the following warranty services from the date of purchase of products from our company (hereinafter referred to as the manufacturer).

1. Since the product was purchased by the user from the manufacturer, enjoy the following three guarantee services

a. Return, replacement and repair within 30 days of delivery:

b. Replacement and repair within 90 days of delivery:

c. Repair within 18 months of delivery:
d. Except when exporting abroad

2. This product enjoys lifetime paid service from the date of purchase by the user from the manufacturer.

3. Disclaimer: Product failure caused by the following reasons is not covered by the manufacturer's free warranty service:
a. Failure caused by the user's use and operation in accordance with the requirements of the «Instruction Manual»:
b. Failure caused by the user to repair or modify the product without communicating with the manufacturer:
c. Failure caused by abnormal aging of the product due to poor user environment:
d. Failures caused by natural disasters such as earthquakes, fires, floods or abnormal voltages:
e. Damage to the product during transportation (the transportation method is specified by the customer, and the company assists in handling the cargo consignment procedures)

4. Under the following conditions, manufacturers have the right not to provide warranty services:
a. When the manufacturer's product logo, trademark, nameplate, etc. are damaged or unrecognizable:
b. When the user fails to pay the purchase price in

accordance with the signed contract:
c. The user intentionally conceals the manufacturer's after-sales service unit when the product is installed, wired, operated, maintained or otherwise improperly used

5. For the service of return, replacement and repair, the company must return or return to the company, and it can only be returned or repaired after confirming the responsibility vested.

Certificate of quality

QC test：_____

This product has been tested by our company's quality department, and its performance meets the standards, passes the inspection, and is approved to leave the factory

KEVAN

Shenzhen Keyuan Electric Technology Co., Ltd.

Address：3 / F, building 11, Nangang second industrial zone,Xili street, Nanshan District, Shenzhen City

Tel：0755-2306 9313

Tax：0755-8259 2576

Edition: Version 1.0 in 2019

Website：www.kevan.com.cn