FOREWORD

Thank you for using AC60E series inverter produced by Veichi Electric Co.Ltd

AC60E series inverter is a new generation of high-performance mini -frequency inverter independently developed by Veichi, With advanced control method and rich function design. Users will be satisfied by the simplified PLC, PID adjustor, programming I/O terminal, RS485 interface, analog I/O terminal, and other specific control functions for particular industries in the benefit of AC60E

This manual is the supporting data sheet for AC60E

This instruction manual includes save tips, instructions (messages) of installing wiring, keyboard operation, simple function table, troubleshooting, maintenance only. For parameters setting detail, pls read AC60 general used series manual or consult us. For the best results and safe operations with the AC60 series, carefully read and keep this manual. Make sure it is handy for the ultimate user of the inverters for reference.

To receive technical support related to the inverter, please contact the Veichi sales office or the dealer from whom you purchased. You can also contact our Customer Service Center, and we will try our best to help you.

We are sparing no effort to upgrade our products and regret not to issue prior notification if there is any revision to this instruction manual. Pray for your consideration for the inconveniences

Chapter 1: Summarize

1.1 Safety requirements and cautions

To ensure safety of your health, equipment and property, please read this chapter carefully before use the frequency inverter and act in compliance with the instructions while carrying, installing, debugging, running and overhauling the frequency inverter.

Warn sign and meaning

⚠ Danger	**Danger: it will cause danger of serious injuries and even death while operating against the rules**
⚠ Warn	**Caution: it will cause danger of light injuries or equipment destruction while operating against the rules**

Qualified operation

Only qualified person after professional train can operate the equipment.The operator must be with professional train, familiar with installation, wiring, running and maintain of equipment, and can deal emergency case.

Safe guide

Warn sign is for safe, to prevent operator from hurt and prevent this product and relating equipment from being damaged. Before operating, be sure to carefully read the manual about safety, installation, operation and maintenance and obey to the safe rules and warn sign.

● Right transport, store, installation and careful operation and maintenance is most important for inverter safe run. In transport and store process, make sure the inverter is free from impact and vibration. It must be stored where is dry, without corrosive air and conductive dust, temperature lower than 60℃.

● This product carries dangerous voltage and controls driver machine with potential danger. If not abide the regulations or requirements in this manual, there is danger of body injury even death and machine system damage.

● Do not wire while the power is conneted. Otherwise there is danger of death for electric shock. Before wiring, inspection, maintenance, please cut power supply of all related equipments and ensure mains DC voltage in safe range. And please do operation after 5 mins.

● Power wire, motor wire and control wire should be all connected firmly. Earth must be reliable and earth resistance must be lower than 10Ω.

● Human body electrostatic will seriously damage inner sensitive components. Before operation, please follow ESD measures. Otherwise there is danger of iverter damage.

● Inverter output voltage is pulse wave. If components such as capacitor what improves power factor and pressure-sensitive resistance for anti-thunder and so on are installed at the output side, please dismantle or change to input side.

● No switch components such as breaker and contactor at the output side. (If there must be one, please make sure the output current is 0 while the switch acting).
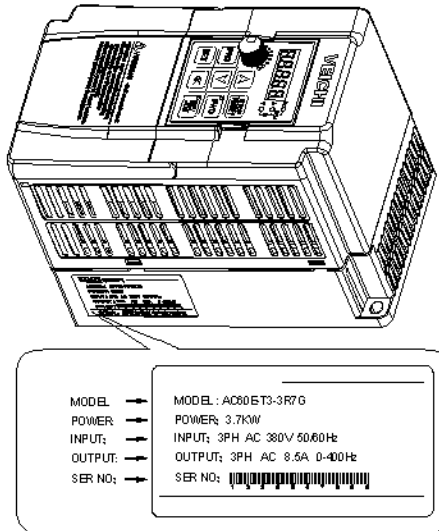
● No matter where the fault is, there is danger of serious accident, even human body injury what means dangerous malfunction possibility. So there must be additional external prevent measures or other safety devices, such as independent current limiting switch, machinery fense and so on.

● Only used in application fields as maker stated. No use in equipments related to special fields such as emergency, succor, ship, medical treatment, avigation, nuclear and etc.

● Only service department of the maker or its authorized service center or professional person trained and authorized by Veich can maintain the products. They should be very familiar with the safety warning and operation gist in this manual.

1.2 Before use

Pls check whether any package damage while receiving the product you ordered. If the package is ok, pls open it and check the inverter. If damage caused in transport, it is not duty of Veich company. But please contact Veich or the transport company immediately.

After checking the product, please also check if the model is the one you ordered. The model of the product is on the nameplate "MODEL" column. If any problem, please contact us freely.

Nameplate position and content

MODEL ➞   MODEL : AC60ET3-3R7G
POWER ➞   POWER: 3.7KW
INPUT: ➞   INPUT: 3PH AC 380V 50/60Hz
OUTPUT: ➞   OUTPUT: 3PH AC 8.5A 0-400Hz
SER NO: ➞   SER NO: |||||||||||||||||||||||||||||

Model explaination

AC60E	T	3	2R2	G

Inverter series
AC60E series

Symbol	Voltage
T	3-phase
S	Single-phase

Symbol	Voltage
2	220V
3	380V

Motor	power
R40	0.40KW
R75	0.75KW
1R5	1.5KW
2R2	2.2KW
3R7	3.7KW

Symbol	Inverter type
G	Universal
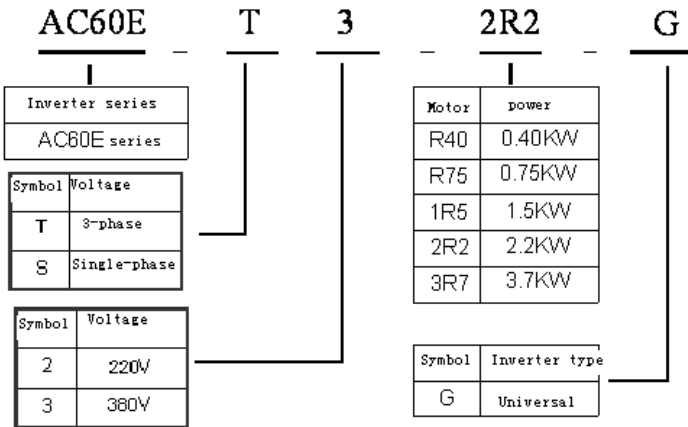
Single phase 220V			Three phase 380V		
Model	Max motor	Ratted current	Model	Max motor	Ratted current
AC60E-S2-R40G	0.4kW	2.5A	AC60E-T3-R75G	0.75kW	2.3A
AC60E-S2-R75G	0.75kW	4A	AC60E-T3-1R5G	1.5kW	3.7A
AC60E-S2-1R5G	1.5kW	7A	AC60E-T3-2R2G	2.2kW	5A
AC60E-S2-2R2G	2.2kW	10A	AC60E-T3-3R7G	3.7kW	8.5A

1.3 Product technique specifications

Items		Specifications
Power	Voltage/frequency	Single phase 220V 50/60Hz Three phase380V 50/60Hz
	Allowable fluctuations	voltage:±15%, frequency:±5%
Control	Frequency range	0-400Hz
	Frequency ACCuracy	±0.5% of max frequency
	Frequency setting resolution	0.01Hz:Operating"up"and"down"keys on keyboard 0.2Hz:Potentiometers analog input
	Voltage/frequency characteristics	Voltage 50% -100% the rated voltage adjustable, Motor rated frequency 25-400Hz(2000Hz) adjustable
	Carrier frequency	1.0-15.0KHz/Random carrier modulation
	Torque upgrade	0--25.0% adjustable/auto torque upgrade/random V/F curve optional
	Maximum Capacity	150% for one minute, 180% for 2s, 200% instant jump.
	ACC and DECtime	0.1-6500s
	Rated output voltage	Take advantage of the power supply voltage compensation function, if motor rated voltage is 100%,the voltage can be set in the 50 -100%

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		scope(the voltage output should not exceed the input voltage)
	AVR adjust	When the grid voltage fluctuates, changes in the output voltage is very small, remained constant V / F
	Automatic energy-saving operation	ACCording to the load conditions, automatic optimize the V / F curves to implement energy saving operation
	Standard functions	PID control, ACC and DECtime adjustable, ACC and DECmode variable, Carrier frequency adjustment, Torque upgrade, Current limiting, Speed tracking and restart, Frequency hopping, Frequency fluctuation limite control, Program running, Multi-steps speed, Pendulum frequency operation, RS485, Analog output, Pulse output frequency
	Brake	Energy-consuming braking, DC braking
	Frequency setting input	Keyboard number settings, keyboard potentiometers/ external terminal VS: 0 ~ 10V, the external terminal AS : 4-20mA, RS485 and signal composition and terminal options
	Signal Feedback input	External terminal VS: 0 ~ 10V external terminal AS: 4-20mA, RS485
	Input order signals	Start, stop, positive and negative rotating , jog, multi-steps speed, free parking, reset, ACC and DECtime choice, frequency settings channels choice, external malfunctions alarm
	External output signal	Relay output, the collector output, 0-10V output, 4-20mA output, the frequency pulse output
Protection function		Overvoltage, undervoltage, current limiting, over-current, overload, electric thermal relays, overheat, pressure stall, data protection
Display	Setting	Function number/data
	Running	Output frequency, give frequency, output current, input voltage, output voltage, motor speed, PID feedback, quantitative PID, module temperature, input and output terminal
	Fault	Overvoltage, undervoltage, overcurrent, short circuit, phase missing, overload, heat, pressure stall, current limiting, data protection is damaged, current fault operating conditions, historical fault
Condition	Installation sites	Indoor, elevation of not more than 1000 m, no
	Temperature,	-10—+40℃, 20%—90%RH(No condensation)
	Vibration	Below 20Hz less than 0.5g
	Storage	-25—+65℃
	Installation mode	Wall-mounted mode
	Protection degree	IP20
	Cooling Mode	Forced air-cooling

1.4 Cautions in utilization

Frequency inverter is designed to be permit to run under industrial surrounding with electromagnetic interference. Usually, if install quality is good, it ensures frequency inverter safe run without fault. Pls install according to below rules to ensure reliable run and avoid the impact of electromagnetic interference.

- Ensure all equipments connected to frequency inverter are connected to star earth or common earth bus by short and thick cable as well as frequency inverter. Motor earthing should be as close as possible. Do not connect motor cruster to earth terminal of frequency inverter or protection earth of control system.
- Conductor should be flat/ multi cores what has lower impedance at high frequency.
- Cut cable neatly to ensure unshield cable as short as possible.
- Control wire should be away from the supply cable and motor cable as far as possible and use independent wire slot. While it must across to the supply cable and motor cable, should be 90º vertical acorss.
- Ensure that the contactor in the cabinet has wave surge suppresser.Or'R-C'damping circuit is connected to the winding of AC contactor. Voltage dependent resistor corresponding to the winding voltage is used. And freewheel diode or components such as voltage dependent resistor corresponding to the winding voltage are connected to DC contactor. It is very important while contactor, controlled by output relay of inverter, acts frequently.
- Cable connected to motor should be shielded cable or armoured cable. The two barriers are earthed reliably by cable grounding card.
- Build noise filter at the input side to reduce electromagnetic interference from other equipments at the power grid side. The noise filter should be as close to the inverter power input terminal as possible. Meantime, the filter must earth reliably as the inverter.
- Build noise filter at the output side to reduce radio interference and inductive disturbance. The noise filter must be as close to the inverter output terminal as possible. Meantime, the filter must earth reliably as the inverter.
- Anytime, control circuit wire should be shielded cable.
- Add zero phase reactor in power supply wire near inverter input terminal and add zero phase reactor in the motor wire near inverter output terminal to reduce electromagnetic interference to the inverter efficiently.
- Earthing

Right and reliable earthing is the basic condition of safe and reliable running of

the product. For right earthing, please read the following notice carefully.

⚠ Warn	● In order to avoid electric shock, earthing cable should be the size as electric equipment technic standard required and cable length should be as short as possible. Otherwise inverter leakage current will causes unstable potential of the earthing terminal which is far from the earthing point. Electric shock accident will happen frequently. ● Earth terminal must earth. Earth resistance must be below 10Ω. Otherwise there is danger of death.
Important	● Please do not share earth cable with welder or other big current/pulse power equipment. Otherwise inverter will act abnormally. ● While multi inverters are using at the same time, please do not wind the earth wire to loop-type. Otherwise inverter will act abnormally.

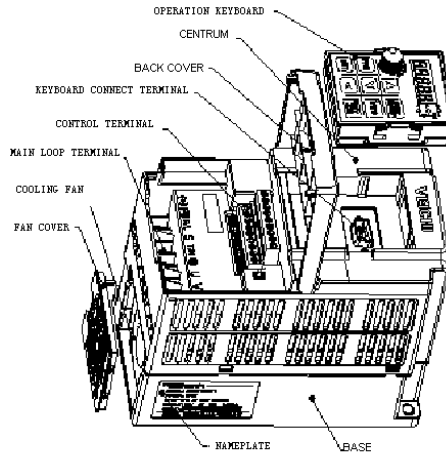# Chapter 2: Installation

2.1 Inverter stable running environment

Install environment is very important to the best use of this product for long time.

Pls install this product in the enviorment as the folling chart requirement.

Environment	Requirement
Install place	Indoor without direct sunshine
Install temperature	-10 ～ +40℃（hanging type） -10 ～ +45℃（cabinet type）
Store temperature	-20 ～ +60℃
Humidity	<95%RH, no condensation
Surrounding	Please install the inverter in place as below： ● Place without oil mist、corrosive gases、flammable gases、 fust or etc. ● Place without metal dust、oil、water or etc into inverter (please do not install inverter on flammable material such as food and etc). ● Place without radioactive material or flammablematerial. ● Place without poisonous gases or liquid. ● Place with very little salification erosion. ● Place whihout direct sunshine.
Altitude	<1000m
Vibration	<10～20Hz：9.8m/s^2 <20～55Hz：5.9m/s^2
Installation and cooling	● Inverter can not be installed horizontally, must be installed vertically. ● Please independently install high heating equipments such as braking resistor and etc which can not be installed in the same cabinet with inverter, stalled at the air-in port of the inverter is strictly prohibited.

2.2 Installation notice and related requirement

● AC60E inverter components

OPERATION KEYBOARD
CENTRUM
BACK COVER
KEYBOARD CONNECT TERMINAL
CONTROL TERMINAL
MAIN LOOP TERMINAL
COOLING FAN
FAN COVER
NAMEPLATE
BASE

● Installation direction and space

Single machine installation: to ensure enough ventilation and wiring space for inverter cooling, please follow installation conditions as below.It should adopts hanging style or closet style with upright installation and keeps enough space with surroundings or the wall.
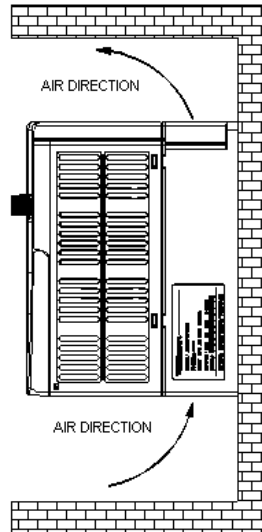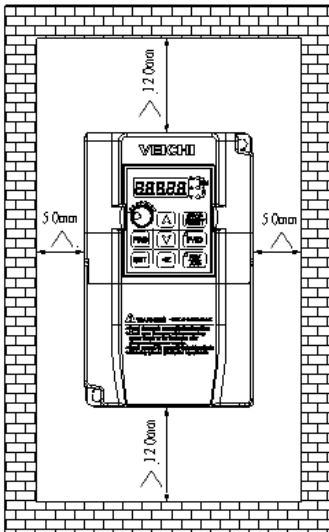
Single machine installation

Multi inverters paratactic installation: while install multi inverters in cabinet, please ensure installation space as below.
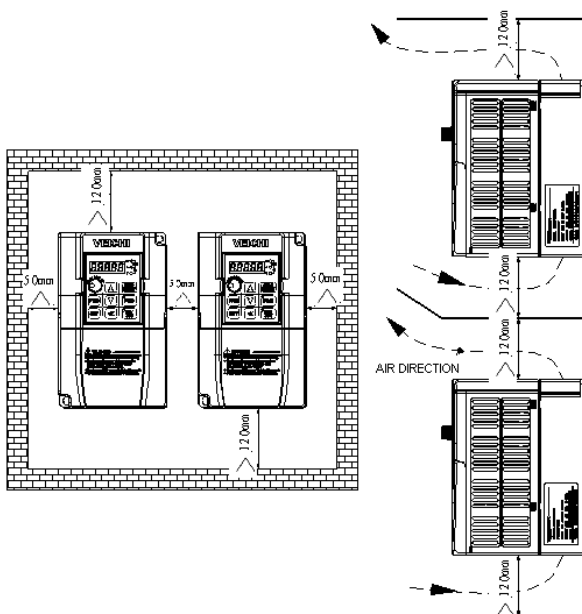
Multi inverters paratactic installation

2.3 Dimension of inverter and keyboard
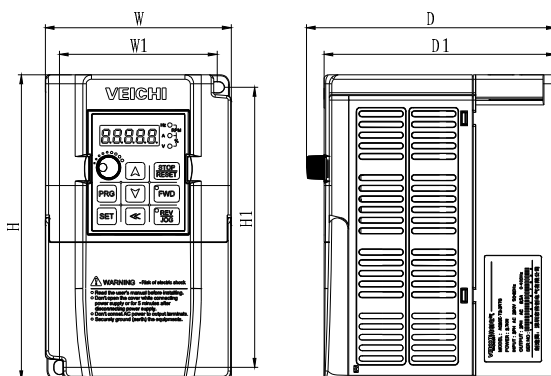
MODEL	W	W1	H	H1	D	D1	INSTALLATION APERTURE
AC60E-S2-R40G							
AC60E-S2-R75G	88	75	142.5	129.5	142	132	φ5
AC60E-S2-1R5G							

AC60E-T3-R75G							
AC60E-T3-1R5G							
AC60E-S2-2R2G							
AC60E-T3-2R2G	106	90	172	158	142	132	φ6
AC60E-T3-3R7G							

2.4 Keyboard dimension (unit: mm)
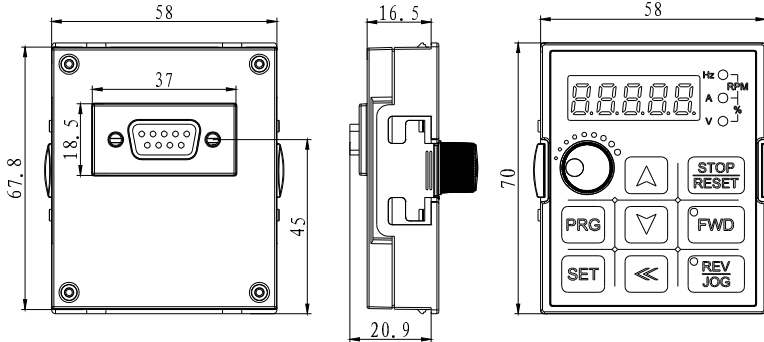
2.5 Electric installation
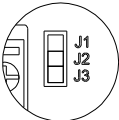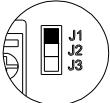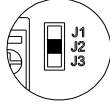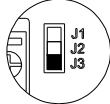
This chapter explains the regulations that users have to obey aimed to ensuring safe use, best performance and reliable running.
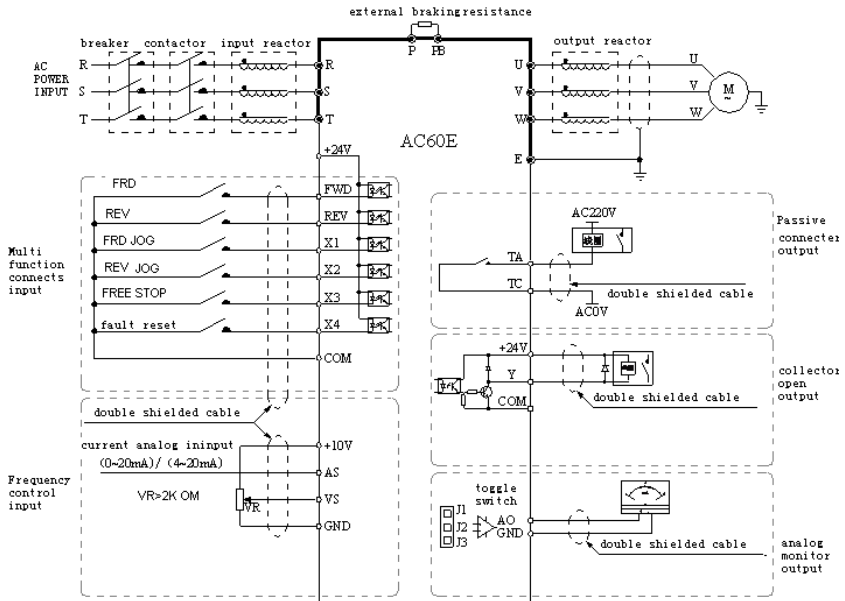
Note:Analog monitor output is special output of meters such as frequcy meter, current meter, voltage meter and etc. It can not be used for control operations such

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as feedback control.

●Switch terminals connection function specification

Switch	Selectable	Picture example	Function specification
	J1		0.2--10kHz frequency output
	J2		0--20mA current output 4--20mA current output
	J3		0--10V voltage output

● Suggested braking resistance

Single-phase 220V				Single-phase 220V			
Motor power	Resistance value	Resistance power	Braking moment	Motor power	Resistance value	Resistance power	Braking moment
0.4 kW	400Ω	100W	100%	0.75 kW	750Ω	150W	100%
0.75 kW	200Ω	120W	100%	1.5 kW	400Ω	300W	100%
1.5 kW	100Ω	300W	100%	2.2 kW	250Ω	400W	100%
2.2 kW	75Ω	300W	100%	3.7 kW	150Ω	500W	100%

● Main circuit terminals

Terminal	Name	Function definition
(+)	Braking resistance terminal	Used for external braking resistance to realize quick stop.
PB		
R/L	AC input terminal	Used to connect AC power supply (R/L,S,T/N for T3 AC input:R/L,T/N for S2AC input).
S		
T/N		
U	AC output terminal	Used to connect the motor or other sensitive/resistive load.
V		

W		
⏚	Earth	Earth terminal, earth resistance<10 OHM

● Control loop terminals
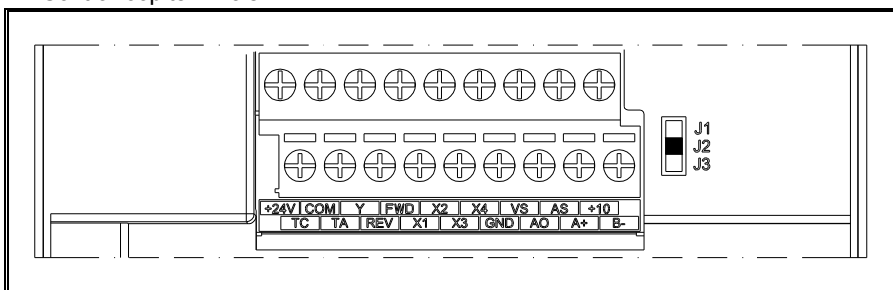
Terminal	Name	Function definition
TA	Normally-open contact	Can set the action and object by programme. Max contact capacity: 3A/240VAC
TC		
Y	Collector open output	Can set the action and object by programme. Max contact capacity:DC30V/50mA
+24V	Auxiliary power output +	Max output: 24VDC/100mA。
COM	Auxiliary power output -	
FWD	Forward	Short connect with (COM) valid.
REV	Reverse	Short connect with (COM) valid.
X1	Multi function contact input X1	Short connect with (COM) valid. Multi function input terminals can be programme set definition. Pls refer F-01--F-04。
X2	Multi function contact input X2	
X3	Multi function contact input X3	
X4	Multi function contact input X4	
AO	Analog output	Physical type of output signal:0--10V 0--20mA 4--20mA frequency pulse output, selectable by function F-61/F-62 or switch J1 J2 J3.
AS	Current analog input	As inverter control signal or feedback signal, can set the act range and response speed by programme. VS resistance：89KΩ, AS resistance：250Ω.
VS	Voltage analog input	
+10V	Signal auxiliary power terminal	Max output 10VDC/50mA。
GND	Signal auxiliary power terminal	Common auxiliary power of analog output, analog input signal.
A+	Communication terminal A+	RS485 communication port

B-	Communication terminal B-	

Chapter 3: Keyboard and Operation

3.1 Keyboard layout and function specification
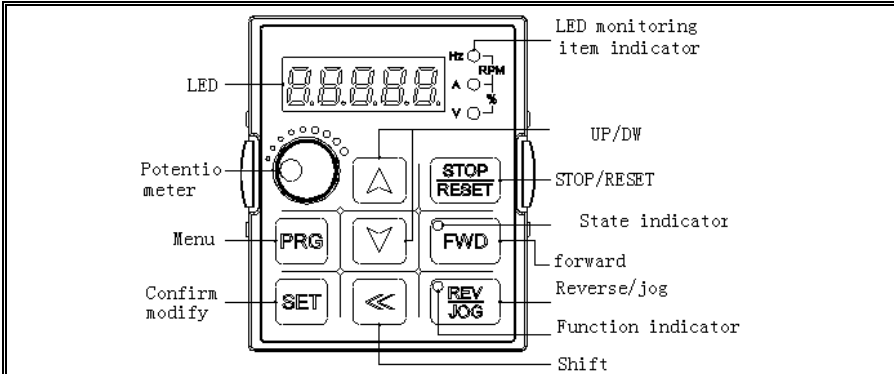
Key	Key name	Key functions
PRG	Menu key	Enter menu while standby or running.Press this key to return while modify parameter. While standby or running, press for 1 sec to enter monitorning interface.
SET	Confirm/modifykey	Press to modify parameter while in menu interface.Press again to confirm aftr modify. While standby or running, press to change LED monitoring items at stop
△ ▽	Up/down key	Select parameter group in menu interface. Modify parameter while in modify interface. Modify given frequency or PID or given torque while at standby or
≪	Shift key	Select digit of function no modified by up/down key；Select parameter digits modified by up/dowm key. Change LED monitoring items while standby or running
FWD	Forward key	While run/stop is controlled by keyboard, press this key, the inverter forward rotate.
REV JOG	Jog/Reverse key	While run/stop is controlled by keyboard, press it, machine will reverse if this key is defined as REVERSE and machine will jog if this key is defined as JOG.
STOP RESET	Stop/Reset key	Machine stops if press it while run/stop is controlled by keyboard. Its efficiency range is defined via function no F-07. Inverter reset if press it in fault state(no reset if fault
⊙	Potentiometer key	Can be used to adjust given frequency while it set as potentiometer adjust speed.

3.2 Indicating lamp meaning specification

Name		State	Meaning
Unit indicators	Hz	Flashing	display value is given frequency.
	Hz	On	display value is output frequency.
	A	On	display value is output current actual value.
	V	On	display value is input voltage.
	V	Flashing	display value is output voltage.
	RPM	On	When "Hz" indicator and the "A" indicator light at the same time, display value is the motor speed.
	%	Flashing	When the "A" indicator and the "V" indicator flashing at the same time, display value is gived PID
	%	On	When the "A" indicator and the "V" indicator light at the same time, display value is the amount of PID feedback
stateindicators	FWD	On	Frequency inverter turns forward.
	FWD	Flashing	Frequency inverter reverses.
	FWD	Off	Frequency inverter is close-down
Function indicat	REV/JOG	On	This key is defined as the jog function key.

Chapter 4: Functional Parameter Table

Here only simple parameter table. For details, pls read AC60 series manual or consult us.

"●":Means that the parameter can be revised during frequency inverter in a running state.

"○":Means that the parameter can not be revised during frequency inverter in a running state.

"×":Means that the parameters can only be read and can not be changed.

"–":Means that the parameter is only set by the manufacturer.

"※":Means that the parameter is related to the type of the frequency inverter

4.1 Basic parameter

NO	Function description	Range of settings and definition	Factory setting	Modify limitation	Communic ation code
E-01	Run command given channel selection	0:Keyboard control 1:Terminal control 2:RS485communication port control	0	○	101H
E-02	Frequency given main channel selection	0:Keyboard number setting 1:Keyboard potentiometer 2:Terminal VS voltage signal,0--10V 3:Terminal AS current signal,4--20mA 4:Reserved 5:Reserved 6 :RS485 communication port 7:Ascend/descent control 8:Normal PID running 9:Constant voltage PID control 10:Program running 11:Swing frequency running 12:Terminal selection	1	○	102H
E-03	Frequency given auxiliary channel selection	0:keyboard number setting 1:Keyboard potentiometer 2:Terminal VS voltage signal,0--10V 3:Terminal AS current	0	○	103H

		signal,4--20mA 4:Reserved 5:Reserved 6 :RS485 communication port 7:Ascend/descent control 8:Normal PID running 9:Constant voltage PID control 10:Program running			
E-04	Frequency given channel gain	0.01--5.00	1.00	○	104H
E-05	Frequency given channels combinations mode	0:Main channel valid, auxiliary channel invalid 1: Auxiliary channel valid,main channel invalid 2:Both channels arbitrary nonzero value valid, the main channel priority 3:Main channel + (K×auxiliary channel) 4:Main channel - (K×auxiliary channel) 5:MAX[Main channel, (K×auxiliary channel)] 6:MIN[Main channel, (K×auxiliary channel)] 7:Auxiliary channel +(K×Main channel) 8:Auxiliary channel -(K×Main channel) 9:MAX[(K×Main channel), auxiliary channel] 10:MIN [(K×Main channel), auxiliary channel]	0	○	105H
E-06	Keyboard display monitoring selections:	0:Given frequency 1:Output frequency 2:Output current 3:Input voltage 4:Output voltage 5:Mechanical speed 6:PID given value 7:PID feedback value	0	●	106H
E-07	Reserved				
E-08	Keyboard REV/JOG key function options	0:REV 1:JOG	0	●	108H
E-09	Maximum frequency	0.50--400.0Hz	50.0	○	109H
E-10	Upper limit of frequency	Lower limit of frequency--Maximum frequency	50.00	●	10AH

E-11	Lower limit of frequency	0.00--Upper limit of frequency	0.00	●	10BH
E-12	Lower limit frequency running mode	0:Stop 1:Run ACCording to lower limit frequency	1	●	10CH
E-13	ACC time 1	0.1--6500.0 second	※	●	10DH
E-14	DECtime 1	0.1--6500.0 second	※	●	10EH
E-15	ACC/DECmode	0:Straight line 1:S Curve	0	●	10FH
E-16	Keyboard number given frequency	Lower limit of frequency--Upper limit of frequency	50.00	●	110H
E-17	V/F mode	0:Constant torque curve 1:Drop torque curve 1(1.5times) 2:Drop torque curve 2(1.7times) 3:Drop torque curve 3(2.0times) 4:Auto-defined curve	0	○	111H
E-18	Torque upgrade	0.0%:automatic 0.1%--25.0%	※	●	112H
E-19	Reserve				
E-20	Carrier frequency	0.7KHz--15.0KHz	※	●	114H
E-21	Carrier Characteristics	LED "0" digit: Carrier frequency associated with the output setting 0:Output frequency correlation invalid 1:Input Frequency correlation valid LED "10" digit: Carrier temperature correlative setting 0:Module temperature Correlation invalid 1:Module temperature Correlation valid LED "100" digit: PWM mode options 0:Fixed PWM 1:Random PWM LED 1000 digit:reserved	0010	●	115H
E-22	Slip frequency compensation	0--200%	0	○	116H
E-23	Energy-saving running options	0:Invalid 1:Valid	0	○	117H
E-24	Voltage auto-adjustment function	0:Invalid 1:Global valid 2:Only invalid in DEC	0	●	118H
E-25	Jog frequency	0.00Hz--upper limit frequency	5.00	●	119H

E-26	Jog ACC time	0.1--6500.0 second	2.0	●	11AH
E-27	Jog DEC time	0.1--6500.0 second	2.0	●	11BH
E-28	Start-up frequency	0.00--60.00Hz	0.50	○	11CH
E-29	Start-up frequency duration	0.0--20.0 second	0.0	○	11DH
E-30	Start-up options	0:Start by start-up frequency 1:Firstly DC braking,then start by the start-up frequency 2:First rotate speed tracking then restart	0	○	11EH
E-31	Power cut restart options	0:invalid 1:valid	0	●	11FH
E-32	Power cut restart waiting time	0.0--10.0 second	0.5	●	120H
E-33	Free stop frequency	0.00--60.00Hz	0.00	●	121H
E-34	Stop mode	0:DECand stop 1:free stop	0	●	122H
E-35	DC braking voltage	0.0--15.0%	5.0	●	123H
E-36	DC braking time for stop	0.0--30.0 second	0.0	●	124H
E-37	DC braking initial frequency for stop	0.00--60.00Hz	0.00	●	125H
E-38	DC braking time for startup	0.0--10.0 second	0.0	●	126H
E-39	Jumping frequency 1	0.00--400.0Hz(Fmax)	0.00	●	127H
E-40	Jumping frequency 2	0.00--400.0Hz(Fmax)	0.00	●	128H
E-41	Jumping frequency 3	0.00--400.0Hz(Fmax)	0.00	●	129H
E-42	Jumping frequency range	0.00--5.00Hz	0.00	●	12AH
E-43	Fault auto-reset times	0:close 1--3:open	0	●	12BH
E-44	Fault auto-reset waiting time	0.1--20.0 second	1.0	●	12CH
E-45	Warm-up time	0.0--6500 second	0.0	●	12DH
E-46	Running direction options	0:comply with the default direction 1:contra to the default direction 2:Forbid reverse running	0	○	12EH
E-47	Positive/Negative rotation dead time	0.0--10.0 second	0.0	●	12FH
E-48	Cooling fan running options	0:After frequency inverter electrify, fans running 1:stop based on the temperature, running while operation 2:fans stop while stop, running related to the	※	●	130H

		temperature			
E-49	Frequency inverter protection options	LED 0 digit: overvoltage protection options 0:invalid 1:valid LED 10 digit:earth short-circuit protection detection 0:invalid 1:valid LED 100 digit:input Open-Phase protection options 0:invalid 1:valid LED 1000 digit:inverter over-load and over-temperature protection options 0:free stop 1:current limiting running	0※11	●	131H
E-50	Electronic heat-sensitive coefficient setting values	30%--120%(Less than 30 , the functional invalid)	0	●	132H
E-51	Stall protection current limitation values.	100%--250%	160	●	133H
E-52	Stall protection bus voltage values	110--150%	128%	●	134H
E-53	Energy-consumed braking action voltage values	110--150%	122%	●	135H
E-54	Energy-consumed braking action ratio	0--100%	80%	●	136H
E-55	Bus under-voltage protection values	60--90%	65%	●	137H
E-56	Motor rated voltage	100--1140V	※	○	138H
E-57	Motor rated current	0.1--1000A	※	○	139H
E-58	Motor rated frequency	25.00--400.0Hz	50.0	○	13AH
E-59	Motor rated rotating speed	0--65000	1460	●	13BH
E-60	Frequency inverter output voltage ratio	50--100%	100%	○	13CH
E-61	Reserved				
E-62	Speed tracking stability time	0.20--10.00 second	0.60	●	13EH
E-63	Parameters change protection	0:all parameters can be changed 1:only keyboard numbers setting can be change	0	●	13FH

		2:all the parameter forbid change			
E-64	Parameter initialization	0:No operation 1:reset factory setting 2:clear fault memory	0	○	140H
E-65	Factory password	0--9999	0	●	141H
E-66	Information inquiry ※	0:no operation 1:state monitoring inquiries 2:fault information inquiries	0	●	142H
E-67	Disturbance restrain	LED 0 digit:restrain over-voltage disturbance 0:invalid 1:valid LED 10 digit:restrain SC disturbance 0:invalid 1:valid LED 100 digit:restrain over-current disturbance 0:invalid 1:valid LED 1000 digit:reserved	0001	●	143H

※ Information see appendix

4.2 Exterior terminal parameters:

serial number	Function description	range of setting and meaning	Factory setting	Modification limitation	Communication coding
F-01	Input signal options 1(X1)	0:invalid 1: positive jog operation 2:Negative jog operation 3:free stop 4:fault reset 5:multi-step speed contol1 6:multi-step speed contol2 7:multi-step speed contol3 8:multi-step speed contol4 9:ascend/descent running frequency UP 10:ascend /descent	1	○	201H

F-02	Input signal options 2(X2)	running frequency DW 11:trilinear operation mode control 12:PID control cancel 13:exterior fault alarm 14:ACC and DECtime selection terminal 1 15:ACC and DECtime selection terminal 2 16:frequency setting channel selection terminal 1 17:frequency setting	2	○	202H
F-03	Input signal options 3(X3)	channel selection terminal 2 18:frequency setting channel selection terminal 3 19:frequency setting channel selection terminal 4	3	○	203H
F-04	Input signal options 4(X4)	20:program running suspension 21:program running restart 22:timer trigger terminal 23:timer reset terminal 24:timer Auto-Nulling terminal 25:Counter clock input terminal	4	○	204H
F-05	Reserved				
F-06	Reserved				
F-07	Input signal action mode selection	LED 0 digit:free stop restore mode 0:after the	100 1	○	207H

		disconnection,			
		restore the original order			
		1:after the			
		disconnection,			
		no restore the original order			
		LED 10 digit:UP/DW terminal control frequency setting 0:UP / DW terminals regulate after running 1:back to the last shutdown instantaneous frequency, then UP / DW regulate 2:First to [F-70], then UP / DW regulate LED 100 digit:keyboard STOP/RESET button effective range selection 0:only keyboard control effective 1:all control mode effective LED 1000 digit:after fault reset, terminal operation mode selection 0:terminal control can restart directly 1:terminal control ,first stop before startup			
F-08	Terminal operation control mode selection	0:standard operation control 1:double-line operation mode control 2:trilinear operation mode control.	0	○	208H
F-09	1 step speed setting 1X		20.00	●	209H
F-10	2 step speed setting 2X		10.00	●	20AH
F-11	3 step speed setting 3X		15.00	●	20BH
F-12	4 step speed setting 4X	0.00Hz--upper limit of frequency	20.00	●	20CH
F-13	5 step speed setting 5X		25.00	●	20DH
F-14	6 step speed setting 6X		30.00	●	20EH
F-15	7 step speed		35.0	●	20FH

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			0		
F-16	8 step speed setting 8X		40.00	●	210H
F-17	9 step speed setting 9X		45.00	●	211H
F-18	10 step speed setting 10X		50.00	●	212H
F-19	11 step speed setting 11X		30.00	●	213H
F-20	12 step speed setting 12X		35.00	●	214H
F-21	13 step speed setting 13X		40.00	●	215H
F-22	14 step speed setting 14X		45.00	●	216H
F-23	15 step speed setting 15X		50.00	●	217H
F-24	ACC time2	0.1--6500.0 second	※	●	218H
F-25	DECtime2		※	●	219H
F-26	ACC time3		※	●	21AH
F-27	DECtime3		※	●	21BH
F-28	ACC time4		※	●	21CH
F-29	DECtime4		※	●	21DH
F-30	Relay output terminal TA,TC	0:zero frequency (standby mode) 1:fault jump alarm	1	●	21EH

F-31	Output terminal Y	1(fault auto-restoration period alarm) 2:fault jump alarm 2(fault auto-restoration period no alarm 3:frequency arrive detection 4:frequency level signal detection 5:be operating 6:reversal operation 7:frequency undervoltage 8:overload pre-alarm 9:output frequency reach upper frequency limit 10:output frequency reach lower frequency limit 11:exterior fault clost-down 12:timer times up 13:Counter reach maximum value 14:Counter reach setting value 15:PID feedback quantity upper limit alarm 16:PID feedback quantity lower limit alarm 17:sensor disconnect 18:program operation cycle period ACComplish 19:program operation step ACComplish	4	●	21FH
F-32	Reserved				
F-33	Can be detected out frequency range	0.00--50.00Hz	1.00	●	221H
F-34	Output frequency detection range	0.00--400.0Hz	30.00	●	222H
F-35	Output frequency detection delay time	0.0--20.0 second	0.0	●	223H
F-36	Overload pre-alarm range	50--200%	150	●	224H
F-37	Overload pre-alarm delay time	0.0--20.0 second	1	●	225H
F-38	Timer setting values	1--65000 second	1	●	226H

F-39	Counter maximum value	1--65000	1000	●	227H
F-40	Counter setting value	1--Counter maximum value	100	●	228H
F-41	VS terminal input Voltage lower limit	0.00V-- [F-42]	0.50	●	229H
F-42	VS terminal input Voltage upper limit	[F-41] --10.00V	9.50	●	22AH
F-43	VS terminal input Voltage gain	0.01--5.00	1.00	●	22BH
F-44	Reserved				
F-45	Reserved				
F-46	Reserved				
F-47	Reserved				
F-48	Reserved				
F-49	Reserved				
F-50	AS terminal input current lower limit	0.00mA-- [F-51]	4.20	●	232H
F-51	AS terminal input current upper limit	[F-50] --20.0mA	19.50	●	233H
F-52	AS terminal input current gain	0.01--5.00	1.00	●	234H
F-53	Reserved				
F-54	Reserved				
F-55	Reserved				
F-56	Reserved				
F-57	Reserved				
F-58	Input signal characteristics selection	LED 0 digit:VS1 input characteristic selection 0:positive characteristic 1:negative characteristic LED 10 digit:AS input characteristic selection 0:positive characteristic 1:negative characteristic LED 100 digit: reserved LED 1000 digit: reserved	0000	●	23AH
F-59	Terminal analog input filter time constant	0.01--5.00 second	0.50	●	23BH
F-60	Reserved				

F-61	Output terminal(AO)selection	0:output signal close 1:output frequency/speed 2:output current 3:given frequency/speed 4:PID given quantity 5:PID feedback quantity 6:DC bus voltage 7:output voltage	3	●	23DH
F-62	(AO)output signal selection	0:frequency pulse output 1:0--20mA 2:4--20mA 3:0--10V	3	●	23EH
F-63	Reserved				
F-64	(AO)output signal gain	25%--200%	100	●	240H
F-65	Reserved				
F-66	(AO2)output signal zero adjustment	-10.0%--10.0%	0	●	242H
F-67	Keyboard potentiometer input voltage lower limit	0.00V-- [F-68]	0.20	●	243H
F-68	Keyboard potentiometer input voltage upper limit	[F-67] --5.50V	4.8	●	244H
F-69	Keyboard potentiometer gain	0.50--5.00	1.00	●	245H
F-70	UP/DW terminal preset frequency	0.00Hz--frequency upper limit	0.00	●	246H
F-71	Reserved				247H

4.3 Special functions parameter

Series number	Function description	Range of setting values and meaning	Factory setting	Modification limitation	Communication coding
H-01	Free-setting voltage V1	0.0% -- [H-03]	3.0	○	301H
H-02	Free-setting frequency F1	0.0Hz-- [H-04]	1.00	○	302H
H-03	Free-setting voltage V2	[H-01--H-05]	28.0	○	303H
H-04	Free-setting frequency F2	[H-02--H-06]	10.00	○	304H
H-05	Free-setting voltage V3	[H-03--H-07]	55.0	○	305H

H-06	Free-setting frequency F3	〔H-04--H-08〕	25.00	○	306H
H-07	Free-setting voltage V4	〔H-05--H-09〕	80.0	○	307H
H-08	Free-setting frequency F4	〔H-06--H-10〕	37.50	○	308H
H-09	Free-setting voltage V5	〔H-07〕--100.0%	100.0	○	309H
H-10	Free-setting frequency F5	〔 H-08 〕 --maximum frequency	50.00	○	30AH
H-11	PID output characteristic	0:positive characteristic 1:negative characteristic	0	○	30BH
H-12	PID controller given signal source	0:keyboard potentiometer 1:PID keyboard number given 2:exterior terminal VS:0--10V 3:exterior terminal AS:4--20mA 4:reserved 5: reserved 6:RS485 interface setting	1	○	30CH
H-13	PID controller feedback signal source	0:exterior terminal VS:0--10V 1:exterior terminal AS:4--20mA 2:reserved 3: reserved	1	○	30DH
H-14	PID preset frequency	0.00HZ--upper frequency limit	0.00	●	30EH
H-15	PID preset frequency operation time	0.1--6500.0 second	0.0	●	30FH
H-16	PID keyboard number given	0.0--100.0%	50.0	●	310H
H-17	Feedback channel gain	0.01--5.00	1.00	●	311H
H-18	Sensor maximum measuring range	1.0--100.0	100.0	●	312H
H-19	Proportion gain P	0.1--100.0	20.0	●	313H
H-20	integral time I	0.1--100.0 second	2.0	●	314H
H-21	Differential gain D	0.0--10.0	0.0	●	315H
H-22	Sampling period	0.01--60.00 second	0.10	●	316H
H-23	PID control deviation limit	0.0--20.0%	0.0	●	317H
H-24	Start Threshold	0.0%--dormancy Threshold	0.0	●	318H
H-25	Dormancy Threshold	Start threshold--100.0%	100.0	●	319H

H-26	Alarm upper limit value	Alarm lower limit value--100.0%	100.0	●	31AH
H-27	Alarm lower limit value	0.0%--Alarm upper limit value	0.0	●	31BH
H-28	Sensor disconnection detection values	0.0--20.0%	0.0	●	31CH
H-29	Sensor disconnection alarm operation selection	0:continued operation 1:stop	0	●	31DH
H-30	Upper limit demarcative values	lower limit demarcative values--100.0%	100.0	●	31EH
H-31	lower limit demarcative value	0.0%--upper limit demarcative values	0.0	●	31FH
H-32	Program run mode	0:single cycle (time in seconds) 1:continuous cycle (time in seconds) 2:single cycle, continuous running (time in seconds) 3:single cycle (time in minute) 4:continuous cycle (time in minute) 5:single cycle,continuous running (time in minute)	0	○	320H
H-33	Program breakpoint restore mode selection	0:operation ACCording to the first step speed 1:re-timing and running ACCording to the be interrupted running frequency 2:running ACCording to the residue time after being interrupted running frequency	0	○	321H
H-34	In program run state,power off storage selection	0:Power off without storage 1:Power off with storage	0	○	322H
H-35	1st step speed direction and ACC&DECtime	0:FWD:ACC time 1/DECtime 1 1:FWD:ACC time 2/DECtime 2 2:FWD:ACC time 3/DECtime 3	0	●	323H

H-36	2nd step speed direction and ACC&DEC time		1	●	324H
H-37	3rd step speed direction and ACC&DEC time		2	●	325H
H-38	4th step speed direction and ACC&DEC time		3	●	326H
H-39	5th step speed direction and ACC&DEC time		4	●	327H
H-40	6th step speed direction and ACC&DEC time		5	●	328H
H-41	7th step speed direction and ACC&DEC time	3:FWD:ACC time 4/DECtime 4	6	●	329H
H-42	8th step speed direction and ACC&DEC time	4:REV:ACC time 1/DECtime 1 5:REV:ACC time	7	●	32AH
H-43	9th step speed direction and ACC&DEC time	2/DECtime 2 6:REV:ACC time 3/DECtime 3 7:REV:ACC time	0	●	32BH
H-44	10th step speed direction and ACC&DEC time	4/DECtime 4	1	●	32CH
H-45	11th step speed direction and ACC&DEC time		2	●	32DH
H-46	12th step speed direction and ACC&DEC time		3	●	32EH
H-47	13th step speed direction and ACC&DEC time		4	●	32FH
H-48	14th step speed direction and ACC&DEC time		5	●	330H
H-49	15th step speed direction and ACC&DEC time		6	●	331H
H-50	1st step speed operation time T1		10.0	●	332H
H-51	2nd step speed operation time T2	0.0—6000 second(minute)	10.0	●	333H
H-52	3rd step speed operation time T3		10.0	●	334H
H-53	4th step speed		10.0	●	335H

	operation time T4				
H-54	5th step speed operation time T5		10.0	●	336H
H-55	6th step speed operation time T6		10.0	●	337H
H-56	7th step speed operation time T7		10.0	●	338H
H-57	8th step speed operation time T8		10.0	●	339H
H-58	9th step speed operation time T9		10.0	●	33AH
H-59	10th step speed operation time T10		10.0	●	33BH
H-60	11th step speed operation time T11		10.0	●	33CH
H-61	12th step speed operation time T12		10.0	●	33DH
H-62	13th step speed operation time T13		10.0	●	33EH
H-63	14th step speed operation time T14		10.0	●	33FH
H-64	15th step speed operation time T15		10.0	●	340H
H-65	Differential frequency△f in swing frequency operation	0.00--20.00Hz	2.00	●	341H
H-66	Linkage main station setting	0:this machine is linkage slave station 1: main station mode 1 2: main station mode 2	0	●	342H
H-67	Machine addresses	1--247	1	●	343H
H-68	Data format	0:non verifying （N,8,1） 1:even verifying （E,8,1） 2:odd verifying （O,8,1）	3	○	344H
H-69	Baud rate	0:1200 bps 1:2400bps 2:4800 bps 3:9600bps 4:19200bps	3	○	345H
H-70	Communication setting frequency ratio	0.01--5.00	1.00	●	346H
H-71	Communications timeout time	0.0--6500.0 second	10.0	●	347H
H-72	RS485	0:stop	0	●	348H

		Communication disconnection action mode	1:Continued operation			
H-73	Response delayed	0.001--1.000 second	0.005	●	349H
H-74	Moment stop DECvoltage lower	0%--200%	20%	●	34AH
H-75	Moment stop DECvoltage upper	0%--200%	90%	●	34BH
H-76	Moment stop DECbenefit	0.01--10.00	2.00	●	34CH
H-77	Voltage recover steady time	0.0--100.0s	2.0s	●	34DH
H-78	reserved				34EH
H-79	reserved				34FH
H-80	reserved				350H

Chapter 5: Fault Information and Troubleshooting

Fault code	Type of fault	Possible fault reason	Troubleshooting
S.C	System fault	1.ACC time is set too short 2.Frequency inverter output phase or grounding short circuit. 3.Module failure. 4.Disturbance.	1.Lengthen ACC time. 2.Chect the peripheral device，reset after troubleshooting. 3.Ask for technical support. 4. Check peripheral device,grounding line,shield line grounding condition,distance condition of terminals and control machine.
o.C.1	ACC over current	1.ACC time is too short. 2. Restart the machine in running when momentary stop occurs.. 3. V/F curve setup is not suitable or torque is boosted too high 4.Frequency inverter capacity is too low.	1. lengthen ACC time. 2.restart after the machine totally stop or set［E-30］as"2". 3. Reset V/F curve or torque boost value. 4. Select frequency inverter with proper capacity.
o.C.2	DEC over current	1.DEC time is too short. 2.Potential load or inertia is too big. 3. Frequency inverter capacity is too low..	1.Lengthen DEC time 2.Connect external resistor or braking unit. 3.Select frequency inverter with proper capacity.
o.C.3	Over current at constant speed	1.Load change suddenly. 2.Network voltage is relatively low.	1. Check the load change condition and eliminate it. 2.Check the input power.
o.U.1	ACC over voltage	1.Supply voltage overrun. 2. Restart the machine in running（no tracking start）.	1.Check the network voltage，troubleshooting. 2. Restart after the machine totally stop or set［E-30］as"2".
o.U.2	DEC over voltage	1.DEC time is too short. 2. Potential load or inertia is too big.. 3. Supply voltage overrun.	1. Lengthen DEC time. 2. DECrease potential load, or amplify the frequency inverter capacity, or install more braking unit. 3.Check the network voltage，troubleshooting.

o.U.3	Over voltage at constant speed	1.Supply voltage overrun. 2.Input voltage is abnormal	1.Check the network voltage，troubleshooting. 2.Install input reactor.
o.U.4	Close down over voltage	1.Supply voltage overrun.	1. Check the network voltage，troubleshooting. 2. Ask for technical support.
o.L.1	Machine overload	1. V/F curve setup or torque boost is not suitable 2. Network voltage is relatively low. 3. Machine overload protection parameter is set improperly. 4.Machine block rotor operation or heavy load. 5.Universal machine low speed with heavy load works for a long time.	1. Reset V/F curve or torque boost value. 2.Check the input power. 3.Check［E-57］ setting. 4.Adjust load or select and use frequency inverter with matching capacity grade. 5. When requiring long term low speed work, please use special motor for frequency inverter.
o.L.2	Frequency inverter over load	1.Heavy load . 2.ACC time is set too short. 3. Restart the machine in running when momentary stop occurs.. 4. V/F curve setup or torque boost is not suitable	1. Select frequency inverter with proper capacity. 2. Lengthen ACC time. 3. Restart after the motor completely stop or set［E-30］ as"2". 4. Reset V/F curve or torque boost value.
o.H.	Frequency inverter inner overheat	1. Too high ambient temperature. 2. Damaged fan. 3. Blocked air duct. 4.Carry wave frequency is too big.	1. Ameliorate periphery environment. 2.Replace fan. 3. Clear air duct，improve the frequency inverter periphery ventilation and dissipation environment. 4.Check［E-20］and［E-21］setting.
LU1	Over voltage of supply power at stop	1.Supply power is too low. 2.Voltage detection circuit abnormal.	1.check the supply voltage and troubleshooting. 2. Ask for technical support.
LU2	Over voltage of supply power at	1.Supply power is too low. 2.Capacity of power	1. Check the supply voltage and troubleshooting.

	running	network is too small，or instantaneous surge current inside power network is too big. 3.DC main contactor inside the frequency inverter not close.	2.Improve power supply system. 3. Ask for technical support.
SEn	Feedback sensor fault	In PID running mode, when the analog feedback channel is selected, the feedback signal is lower than 〔H-28〕setting value, alarm	1. Check wiring and re-wire again. 2. Adjust the feedback signal input type.
Err1	Open-phase at input side	Open-phase in frequency inverter three phase input power Phase.	Check three phase input power and three phase input power wiring
Err2	Output grounding	Frequency inverter has device grounding short circuit at the output side.	Check peripheral device ,grounding line,machine insulation.
Err3	Current detecting fault	1.Detecting circuit fault. 2.Damaged HALL component.	1. Ask for technical support.2. Ask for technical support.
Err4	Frequency inverter exterior fault	Exterior exterminal action.	Check exterior device.
Err5	Swing frequency running parameters setting error	User set the swing running parameter not correctly.	Reset the swing frequency running parameters.
Err6	Keyboard communication fault	1.Keyboard wiring fault. 2.Keyboar communication component damaged.	1.Check the keyboard wiring. 2.Ask for technical support.
93SE	Memorizer fault	1. Read/write error of keyboard control parameters. 2. EPROM is damaged.	1.Frequency inverter re-electrify. 2.Ask for technical support.
LIFE	Reserved	--	1.Ask for technical support.

Chapter 6: Overhaul and Maintenance

During frequency inverter normal operation, except for daily inspections, periodic (such as machine overhaul or inspections at least every six months as required) inspections must be performed according to the following table, to preven t trouble before it happens.

Inspection period	Inspection part	Inspection items	Inspection content	Inspection methods	Criteria
At any time	Display	LED display	If display is abnormal or not?	Vision	No abnormal
At any time	Cooling system	Fan	If there is abnormal vibration or abnormal noise.	Visual examination and listening	No abnormal
At any time	Noumenon	Surrounding environment	Temperature，humidity，dust，harmful gas	Visual examination，smelling，feeling	By 2-1 term
At any time	Input terminal	Voltage	If input, output voltage is abnormal	Detect R、S、T and U、V、W terminal	according to the standards regulation
periodic	Main circuit	panorama	If the fastener loosen , whether having the hot shot trail , whether having discharging or not phenomenon , dust are too much, if the wind way is blocked up	Visual,, tighten，clean	No abnormal
		Electrolitic capacitor	If surface is abnormal	Visual	No abnormal
		Wire conductive bar	Whether loosen	Visual	No abnormal
		Terminal	Whether the bolt or screw loosen	tighten	No abnormal

During the examination, not allowed to dismantle or rock a component for no reason, even pull off a connector assembly. Otherwise, it can not run or enter malfunction display state. And it will bring faults of the component,even damage

the host switch component IGBT module. When needing measurement, user should pay attention to various different meters which may reach very different measurement results. Pointer voltmeter is recommended to use to measure input voltage. Rectifier voltmeter is recommended to use to measure output voltage. Pliers galvanometer is recommended to use to measure input and output current. And electrodynamics wattmeter is recommended to use to measure power.

If the frequency inverter is not in use immediately after purchased, and need to be temporarily stored or long-term stored up, pls obey belowing rules:

1 Frequency inverter should be stored in the place with standard temperature range、 fine ventilation and no humidity、 dust or metal dust.

2 If frequency inverter has not been put into use yet for more than 1 year, user should carry on charging testing to restore the characteristic of the inner main circuit filter capacitor. During charging, user can use the pressure regulator to elevate slowly the input voltage of the frequency inverter to the rated input voltage. The charging time should be above 1-2 hours. At least test once every year as narrated above.

3 Frequency inverters are not allowed to be carried out the pressure testing, otherwise, it will lead to frequency inverter life lessening or damage. Before the insulation testing, user should use 500 MΩvolt megger measures the frequency inverter. Its insulation resistance should not smaller than 4MΩ

When using the general ohmmeters to measure current, the current in the input end will has imbalance phenomenon. Generally the difference within 50% is regular. If using general multimeter to measure the output three-phase voltage, due to being limited by the carry wave frequency disturbance and multimeter frequency response, the read data, which maybe inaccurate,can be for reference only.

In order to guarantee the frequency inverter stable operation, except for periodic maintenance, the inner component which bears long-term mechanical wear should be periodic replaced---including the cooling fan、 main circuit filter capacitor for energy caching and exchange、printed circuit board. In general continuous using, users can replace them according to below regulation. Also should according to the concrete conditions such as the usage environment、load condition and frequency inverter current situation.

Component name	Replace year criteria
Cooling fan	2—3 year
Filter capacitor	4—5 year

printed circuit board	8—10 year

Chapter 7: Quality Guarantee

This product quality guarantee is processed as the follows items:

Users can enjoy the following "three guarantee" service from the day of buying products if meeting products quality problem:

    1 We guarantee for repair, return and replacement for one month after delivery;

    2 We guarantee for repair and replacement for two months after delivery;

    3 We guarantee for repair for three months after delivery;

    4 When product is exported to abroad, we guarantee for repair for three months after reaching customer.

No matter where you purchase products, you can enjoy lifelong paid service. The agency, dealer, provider can provide "three guarantee" service after being authorized by our company.

When quality problem appears, our company only undertakes "three guarantee" service as the 11.1 and 11.2 responsibilities above. If user needs more responsibility guarantee, please insure the product by cooperation with the insurance company.

The malfunctions, caused by the reasons mentioned as below, can only enjoy the paid service even if the product under warranty,

    1 The malfunctions caused by misoperations which are not in compliance with this user manual;

    2 The malfunctions caused by unauthorized transform or over-range operation.

    3 User has not paid off the payment according to the contract;；

    4 The malfunctions caused by the earthquake, fire, flood, lightning, or abnormal voltage, etc;

As for the "three guarantee" service, the product must be returned back to our company and can only be replaced or mend after responsibility belonging confirmed.
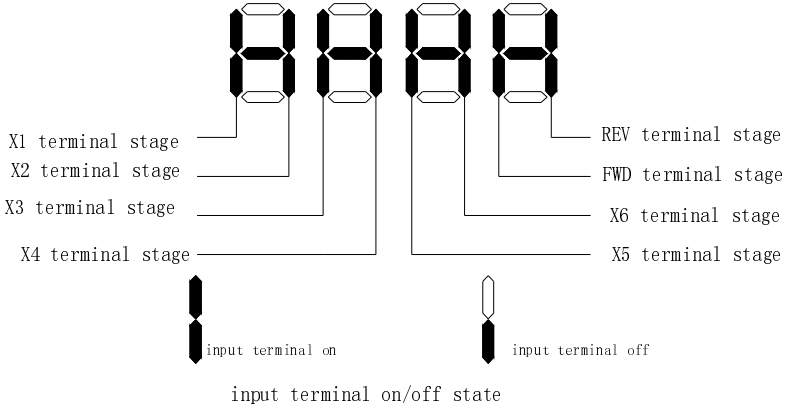
Appendix

1.Monitor inquiry

Select this function to enter monitoring menu（group C parameters），and inquire each state parameters of the frequency inverter. In the monitoring state, you can long press (1 second) PRG key and directly enter the state of the group C parameters which namely is the state monitoring.
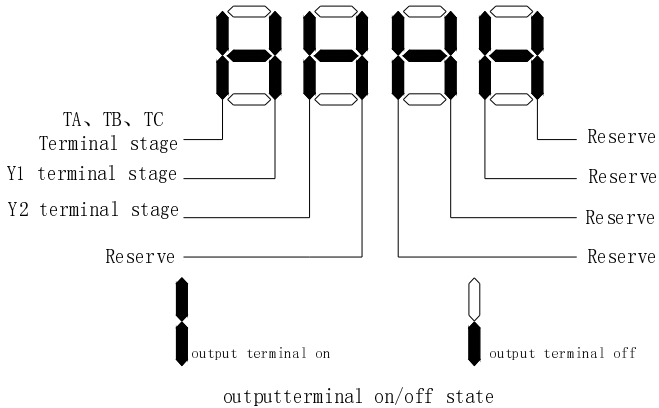
Monitoring code	Content	Units	Communication code
C-1	Given frequency	0.01HZ	C01H
C-2	Output frequency	0.01HZ	C02H
C-3	Output current	0.1A	C03H
C-4	Input voltage	V	C04H
C-5	Output voltage	V	C05H
C-6	Mechanical speed	RPM	C06H
C-7	PID given quantitative	%	C07H
C-8	PID feedback quantitative	%	C08H
C-9	Module temperature	℃	C09H
C-10	Accumulative operation time	hour	C0AH
C-11	Accumulative operation time after latest power on	Min	C0BH
C-12	Output current percentage	%	C0CH
C-13	Step operation remainder time percentage	%	C0DH
C-14	Input terminals connect/disconnect status	See belowing diagram	C0EH
C-15	Input terminals connect/disconnect status	See belowing diagram	C0FH
C-16	Terminal VS1 input value	0.1v	C10H
C-17	Terminal AS input value	0.1mA	C11H
C-18	Terminal VS2 input value	0.1v	C12H
C-19	Terminal pulse input value	※	C13H
C-20	Counter record	※	C14H
C-21	DC bus voltage	V	C15H
C-22	Analog output A01	0.01V	C16H
C-23	Frequency/voltage/current	※	C17H

	outputA02		
C-24	Reserved	--	C18H
C-25	Inverter power grade	Kw	C19H
C-26	Inverter rated voltage	V	C1AH
C-27	Inverter rated current	0.1A	C1BH
C-28	Software version	※	C1CH

Input terminal connect/disconnect state schematic diagram

X1 terminal stage
X2 terminal stage
X3 terminal stage
X4 terminal stage

REV terminal stage
FWD terminal stage
X6 terminal stage
X5 terminal stage

input terminal on input terminal off

input terminal on/off state

Output terminal connect/disconnect state schematic diagram

TA、TB、TC
Terminal stage
Y1 terminal stage
Y2 terminal stage
Reserve

Reserve
Reserve
Reserve
Reserve

output terminal on output terminal off

outputterminal on/off state

2.Fault information inquiry

After inquiry setting, can set LED display below information circularly by the keyboard **up/down** keys.

Serial number	Definition	Remark	Communication code
Er.01	The latest fault information	For details, pls see fault information code table	E01H
Er.02	The cumulative running time before the latest fault	Units：hour	E02H
Er.03	Output frequency while the latest fault	Units：Hz	E03H
Er.04	DC bus voltage while the latest fault	Units：V	E04H
Er.05	Output current while the latest fault	Units：A	E05H
Er.06	Output voltage while the latest fault	Units：V	E06H
Er.07	Module temperature while the latest fault	Units：℃	E07H
Er.08	Running direction while the latest fault	0.Forward 1.reverse	E08H
Er.09	Running status while the latest fault	0.close down 1.stable speed 2.acceleration 3.deceleration	E09H
Er.10	Protection status while the latest fault	0. Normal 1.only voltage amplitude limit 2. only current amplitude limit 3.both voltage and current amplitude limit	E0AH
Er.11	Input terminal status while the latest fault	See above chart	E0BH
Er.12	Output terminal status while the latest fault	See above chart	E0CH
Er.13	The latest one fault information		E0DH
Er.14	The latest two fault information		E0EH
Er.15	The latest three fault Information		E0FH