NK120G Variable Frequency Drive

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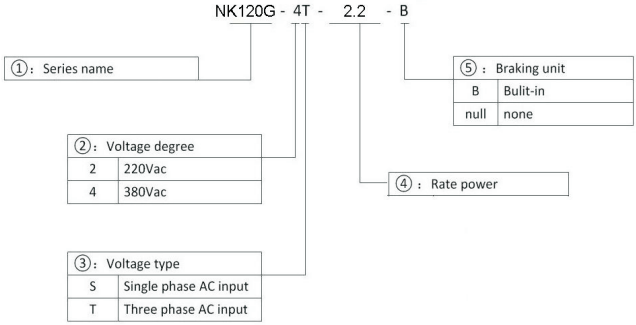
1. Product information



Functions of the terminals

Terminal name	Function
R、S、T	3phase power input
L、N	2phase power input
(+)、PB	Connect braking resistor
U、V、W	3phase output
⏚	Earth terminal (PE)

Type	Terminal name	Function	Specification
Digital input	+24V	+24V power	24V±10%, isolated to GND
	DI1～DI4	Digital input terminals 1～4	Input specification:24V，5mA
	HDI	high-speed pulse input or digital input	Pulse input frequency range:0～20KHz High power level voltage:24V
	COM	+24V power or out power	Isolated to GND
Digital output	DO	Collector outputs, public terminal COM	Out connect voltage:0～24V
	HDO	High-speed pulse output or collector outputs, public terminal COM	Pulse output frequency range:0～50KHz
	COM	DO,HDO public terminal	Isolated to GND
Analog input	+10V	+10V output support	Output voltage:10V, output current range:0～50mA （If potentiometer connected between +10V and GND, resist of potentiometer should not be lower than 2k）
	AI11～AI2	Analog input terminal	Input voltage selection Input voltage range:0V～10V Input current range:0/4～20mA
	GND	Analog earth	Isolated to GND
Analog output	AO1～AO2	Analog output terminal	Output voltage selection Output voltage range:0V～10V Output current range:0/4～20mA
	GND	Analog earth	Isolated to GND

Type	Terminal name	Function	Specification
Relay output	T1A/TIB/TIC	Relay output	T1A-T1B:always close T1A-T1C:always open Contractor capability:250VAC/3A，30VDC/1A
	T2A/T2B/T2C	Relay output	T2A-T2B: always close T2A-T2C:always open Contractor capability:250VAC/3A，30VDC/1A
Communication interface	485+/485-	communication interface	communication interface

Indicator and buttons on keypad

Name		meaning
Hz	Frequency LED	The unit of the current displayed parameter is Hz.
A	Current LED	The unit of the current displayed parameter is A.
V	Voltage LED	The unit of the current displayed parameter is V.
%	Percentage LED	The current displayed parameter is a percentage.
RUN	Run status LED	On: The inverter is running. Off: The inverter stopped. Blinking: The inverter is in dormant state.
F/R	Forward/Reverse LED	On: The inverter is in the reverse running state. Off: The inverter is in the forward running state or stopped.
LO/RE	Run command reference LED	Off: keypad run command reference mode Blinking: terminal run command reference mode On: communication run command reference mode
TUNE	Self identification / Alarm LED	Off: no fault alarm Quick blinking: fault alarm Slow blinking: motor under self identification On: torque control mode

Button

Button	Name	Function
ESC	Programming/ Exit key	Enter or exit the 1st level menu; Return to the 1st level menu from the 2nd level menu; Return to the 2nd level menu from the 3rd level menu.
MF	Multi-function key	Operate according to multi-function selection [2]
RUN	Run key	In the keypad run command reference mode, the key is used for start control of the inverter. After setting the parameter self-identification, the key is used to start the inverter for parameter self-identification.
ENT	Enter key	After function group confirmation of the 1st level menu, enter the 2nd level menu; After function group confirmation of the 2nd level menu, enter the 3rd level menu;

		After function parameters setting confirmation of the 3rd level menu, return to the 2nd level menu; In password verification state, the password input is completed.
	Right-shift key	Function group edit step[1] selection in the 1st/2nd level menu; Function parameters settings edit step selection in the 3rd level menu; In stop parameter display status, running parameter display status and fault display state, display parameters selection; Edit bit selection in password verification state.
	Stop/Reset key	In keypad run command reference mode, the key is used for stop control of the inverter; In other run command reference modes, the key is used for stop protection of the inverter[3]; At fault or stop state, the key is used as a reset key to clear the fault alarm information.
	UP key	Increase function group in the 1st/2nd level menu progressively; Increase function parameters settings in the 3rd level menu progressively; Increase the set frequency progressively.
	DOWN key	Decrease function group in the 1st/2nd level menu progressively; Decrease function parameters settings in the 3rd level menu progressively; Decrease the set frequency progressively.
	Potentiometer	Adjust the frequency; Adjust the torque.

3. Parameter Table

Function code	Name	Detailed of parameters	Default value	Attr
F00 Group Basic function				
F00.00	Motor control mode	0:speed sensorless vector control 1:reserved 2:V/F control	2	☆
F00.01	Run command channel	0: keypad run command channel (LED off) 1: terminal running command channel (LED on) 2: 485 run command channel (LED flickering)	0	○
F00.02	Main frequency source X	0:Digital setting(pre-set frequency F00.09,UP/DOWN change, no power down memory) 1:Digital setting(pre-set frequency F00.09,UP/DOWN change, with power down memory) 2:AI1 3:AI2 4:keypad potentiometer AI0 5:high speed pulse input(DI5)	0	☆

Function code	Name	Detailed of parameters	Default value	Attr
		6:multi-step speed 7:simple PLC 8:PID 9:485 communication		
F00.03	Auxiliary frequency source Y	Same as F00.02main frequency	0	☆
F00.04	Reference object of Y frequency source	0: relative to the max. frequency 1: relative to frequency source X	0	○
F00.05	Frequency source selection	Unit: frequency source selection 0: main 1: main and auxiliary operation (decided by ten) 2: main<--> auxiliary 3: main<-->main and auxiliary operation 4:auxiliary<-->main and auxiliary operation Ten: main and auxiliary operation relationship 0:main + auxiliary 1:main- auxiliary 2:max 3:min	00	○
F00.06	Max. frequency	50.00Hz～500.00Hz	50.00	☆
F00.07	Upper limit frequency	F00.08～F00.06 (Max. frequency)	50.00	○
F00.08	Lower limit frequency	0.00Hz～F00.07 (upper limit of running frequency)	0.00	○
F00.09	Frequency pre-setting	0.00Hz～F00.06 (Max. frequency)	50.00	○
F00.10	Run direction	0: positive 1: reverse	0	○
F00.11	Carrier frequency	0.5kHz～16.0kHz	6.0	○
F00.12	Carrier frequency adjusted according to temperature	0:no 1:yes	1	○
F00.13	Motor selection	0:motor 1 1:motor 2	0	☆
F00.14	ACC time 1	0.00s～650.00s(F00.16=2) 0.0s～6500.0s(F00.16=1) 0s～65000s(F00.16=0)	20.0	○
F00.15	DEC time 1	0.00s～650.00s(F00.16=2) 0.0s～6500.0s(F00.16=1) 0s～65000s(F00.16=0)	20.0	○
F00.16	Unit of ACC/DEC time	0:1s 1:0.1s 2:0.01s	1	☆
F00.17	Auxiliary frequency source Y range	0%～150%	100	○
F00.18	Upper limit frequency source	0:F00.07set 1:AI1 2:AI2 3:keypad potentiometerAI0	0	☆

Function code	Name	Detailed of parameters	Default value	Attr
		4:high speed pulse input 5:485 communication		
F00.19	Upper limit frequency offset	0.00Hz～max frequencyF00.06	0.00	○
F00.20	Superimposed auxiliary frequency source offset	0.00Hz～max frequencyF00.06	0.00	○
F00.21	Decimal point of frequency instruction	1:0.1Hz 2:0.01Hz	2	☆
F00.22	Digital setting frequency memory selection	0: save memory 1:not save memory	0	○
F00.23	Basis frequency of ACC/DEC time	0:Max frequency（F00.06） 1:setting frequency 2:100Hz	0	☆
F00.24	Basis frequency of running frequency UP/DOWN	0:running frequency 1:setting frequency	0	☆
F00.25	Command source binding frequency source	Unit: keypad command, binding frequency source selection 0: no binding 1: digital setting frequency 2:AI1 3:AI2 4:keypad potentiometer AI0 5:high speed pulse input（DI5） 6:multi-step speed 7:simple PLC 8:PID 9:485 communication Ten: Terminal command binding frequency source selection Hundreds:communication command binding frequency source selection	000	○
F00.26	Serial communication protocol selection	0:Modbus-RTU protocol 1:reserved	0	☆
F01 Group Motor 1 parameters				
F01.00	G/Ptype	0:G type 1:P type	0	☆
F01.01	Motor type	0: normal asynchronous motor 1: change frequency asynchronous motor	0	☆
F01.02	Rated power of asynchronous motor	Depend on model		☆
F01.03	Rated frequency of asynchronous motor	0.01Hz～ (Max. frequency)F00.06	50.00	☆
F01.04	Rated speed of asynchronous motor	1rpm～65535rpm	1460	☆
F01.05	Rated voltage of asynchronous motor	1V～2000V	380	☆
F01.06	Rated current of	0.01A～655.35A	9.00	☆

Function code	Name	Detailed of parameters	Default value	Attr
	asynchronous motor			
F01.07	Stator resistance of asynchronous motor	0.001Ω～65.535Ω	1.204	☆
F01.08	Rotor resistance of asynchronous motor	0.001Ω～65.535Ω	0.908	☆
F01.09	Inductance of asynchronous motor	0.01mH～655.35mH	5.28	☆
F01.10	Mutual inductance of asynchronous motor	0.1mH～6553.5mH	158.6	☆
F01.11	Non-load current of asynchronous motor	0.01A～F01.03	4.24	☆
F01.12	Motor parameters autotuning	0: no actuation 1: dynamic autotuning 1 2: static autotuning 3: : dynamic autotuning	0	☆
F02 Group Start and stop control				
F02.00	Start mode	0: start at the starting frequency 1: start after rotating speed tracking 2: Pre excitation	0	○
F02.01	Start delay time	0.0s～1000.0s	0.0	○
F02.02	Starting frequency	0.00Hz～10.00Hz	0.00	○
F02.03	Hold time of starting frequency	0.0s～100.0s	0.0	☆
F02.04	Start DC braking/Pre excitation current	0%～100%	0	☆
F02.05	Start DC braking/Pre excitation time	0.0s～100.0s	0.0	☆
F02.06	ACC and DEC mode	0: linear type 1: S curve A 2: S curve B	0	☆
F02.07	Terminal DI1 characteristic selection after power on	0: invalid 1:valid	0	☆
F02.08	Restart after power off	0: invalid 1:valid	0	☆
F02.09	Waiting time for restart	0.0s～100.0s	0.0	☆
F02.10	Stop mode	0: decelerate to stop 1: coast to stop	0	○
F02.11	Dead time of FWD/REV	0.0s～3000.0s	0.0	○
F02.12	Starting frequency before stop DC braking	0.00Hz～max frequency F00.06	0.00	○
F02.13	Waiting time before stop DC braking	0s～100.0s	0.0	○
F02.14	Stop DC braking current	0.0%～100%	0	○
F02.15	Stop DC braking time	0.0s～100.0s	0.0	○
F02.16	Braking use rate	0%～100%	100	○

Function code	Name	Detailed of parameters	Default value	Attr
F02.17	Delay time of dormancy	0.0～6500.0s	0.0	○
F02.18	Actuation when running frequency is less than lower limit frequency	0: run at lower limit frequency 1: stop 2: 0 speed run	0	○
F02.19	Delay time of dormancy wake up	0.0s～6500.0s	0.0	○
F02.20	Speed track mode	0:start from stop frequency 1:start from working frequency 2: start from max frequency	0	☆
F02.21	Quick or slow speed track	1～100	20	○
F02.22	Speed track KP	0～1000	500	○
F02.23	Speed track KI	0～1000	800	○
F02.24	Speed track current	30%～200%	100	☆
F02.25	Speed track low limit	10～100%	30	☆
F02.26	Speed track voltage rise time	5～30	11	☆
F02.27	Demagnetizing time	0.00～5.00s	1.00	☆
F02.28	S curve first phase time rate	0.0%～(100.0%-F06.29)	30.0	☆
F02.29	S curve final phase time rate	0.0%～(100.0%-F06.28)	30.0	☆
F03 Group V/F control				
F03.00	V/F curve	0: straight line V/F curve 1: multi-dots V/F curve 2: square V/F curve 3: 1.2^{th} V/F curve 4: 1.4^{th} V/F curve 6: 1.6^{th} V/F curve 8: 1.8^{th} V/F curve 10: VF total separate mode 11: VF half separate mode	0	☆
F03.01	Torque compensation	0.0%:automatic 0.1%～30.0% VF separate invalid	1.0	○
F03.02	Torque compensation cut-off frequency	0.00Hz～ max frequency F00.06	50.00	☆
F03.03	V/F frequency 1	0.00Hz～F03.05	0.00	☆
F03.04	V/F voltage 1	0.0%～100.0%	0.0	☆
F03.05	V/F frequency 2	F03.03～F03.07	0.00	☆
F03.06	V/F voltage 2	0.0%～100.0%	0.0	☆
F03.07	V/F frequency 3	F03.05～motor rated voltage(F01.03)	0.00	☆
F03.08	V/F voltage 3	0.0%～100.0%	0.0	☆
F03.09	Slip compensation gain	0.0%～200.0%	0.0	○
F03.10	VF over excitation gain	0～200	64	○
F03.11	Oscillation suppression gain	0～100	0	○

Function code	Name	Detailed of parameters	Default value	Attr
F03.12	Oscillation suppression gain mode	0～4	3	☆
F03.13	VF separate voltage source	0:digital setting（F03.14） 1:AI1 2:AI2 3:keypad potentiometer setting AI0 4:HDI high speed pulse setting（DI5） 5:multi-step 6:simple PLC 7:PID 8:communication setting 100.0% refer to motor rated voltage	0	○
F03.14	VF separate voltage source setting	0V～motor rated voltage F01.05	0	○
F03.15	VF separate voltage ACC time	0.0s～1000.0s It means time from 0v to motor rated voltage	0.0	○
F03.16	VF separate voltage DEC time	0.0s～1000.0s It means time from motor rated voltage to 0v	0.0	○
F03.17	VF separate stop model	0:frequency/voltage reduce to 0 separately 1:voltage reduce to 0, than frequency reduce	0	☆
F03.18	Over current stall action current	50～200%	130	☆
F03.19	Over current stall suppression enable	0:invalid 1:valid	1	☆
F03.20	Over current stall suppression gain	0～100	20	○
F03.21	Current compensation coefficient of double speed over-current stall action	50～200%	50	☆
F03.22	Overvoltage stall action voltage	200.0v～2000.0v set according to model 220V:380V 380V:760V	760.0	☆
F03.23	Overvoltage stall enable	0:invalid 1:valid	1	☆
F03.24	Overvoltage stall suppression frequency gain	0～100	30	○
F03.25	Overvoltage stall suppression voltage gain	0～100	30	○
F03.26	Overvoltage stall max frequency rise limit	0～50Hz	5	☆
F03.27	Slip compensation time constant	0.1～10.0s	0.5	○
F03.28	On line torque compensation gain	80%～150%	100	☆
F03.29	AI1 or AI2 input current and voltage selection	Unit place: 0:AI1 voltage valid	00	☆

Function code	Name	Detailed of parameters	Default value	Attr
		1:AI1 current valid ten place: 0:AI2 voltage valid 1:AI2 current valid		
F04 Group Motor 1 Vector control				
F04.00	Speed loop proportional gain 1	1～100	30	○
F04.01	Integral time of speed loop 1	0.01s～10.00s	0.50	○
F04.02	Switch frequency1	0.00～F02.05	5.00	○
F04.03	Speed loop proportional gain 2	1～100	20	○
F04.04	Integral time of speed loop 2	0.01s～10.00s	1.00	○
F04.05	Switch frequency2	F02.02～ max frequency F00.06	10.00	○
F04.06	Slip gain of vector control	50%～200%	100	○
F04.07	SVC Speed feedback filtering time	0.000s～1.000s	0.050	○
F04.08	Overexcitation gain of vector control	0～200	64	○
F04.09	Speed control (drive) torque max limit digital setting	0.0%～200.0%	150.0	○
F04.10	Speed control (drive) torque max limit source	0:F04.09 set 1:AI1 2:AI2 3:keypad potentiometer setting AI0 4:HDI high speed pulse setting 5:communication setting 6:min(AI1，AI2) 7:MAX(AI1,AI2) 1-7 Full scale corresponding to F04.09	0	○
F04.11	Speed control (braking) torque max limit source	0:F04.12 set 1:AI1 2:AI2 3:keypad potentiometer setting AI0 4:HDI high speed pulse setting 5:communication setting 6:min(AI1，AI2) 7:MAX(AI1,AI2) 1-7 Full scale corresponding toF04.12	0	○
F04.12	Speed control (braking) torque max limit digital setting	0.0%～200.0%	150.0	○
F04.13	Proportional gain of excitation regulation	0～60000	2000	○
F04.14	Integral gain of	0～60000	1300	○

Function code	Name	Detailed of parameters	Default value	Attr
	excitation regulation			
F04.15	Proportional gain of torque regulation	0～60000	2000	○
F04.16	Integral gain of torque regulation	0～60000	1300	○
F04.17	Integral attribute of speed loop	Unit place:integral separation 0: Integral always valid 1: speed loop integral separation	0	○
F04.18	Vector control mode weak magnetic mode selection	0:no weak magnetic 1:direct calculate 2:Automatic adjust	0	○
F04.19	Over modulation enable selection	0:forbid 1:enable	0	○
F04.20	Maximum output voltage coefficient	100%～110%	105	☆
F04.21	Maximum torque coefficient in weak magnetic region	50%～200%	100	○
F04.22	Selection of generation (braking) torque enabling under speed model	0:disable 1:enable	0	○
F05 Group Keypad and display				
F05.00	reserved	0～65535	0	●
F05.01	Parameter initialization	0: no actuation 1: restore default value, not include motor parameters 2: clear fault records	0	☆
F05.02	reserved	0～65535	0	●
F05.03	User password	0～65535	0	○
F05.04	Functions of MF key	0: MF invalid 1:switch between keypad command and remote command 2:FWD/REV switch 3:FWD jog 4: REV jog	0	☆
F05.05	Stop function of STOP/RERST key	0: only valid for keypad control 1: valid for all control modes	1	○
F05.06	Rotating speed display correction	0.0001～6.5000	1.0000	○
F05.07	Linear speed display correction	0.0001～6.5000	1.0000	○
F05.08	Displayed parameters 1 when running	0000～FFFF BIT0: running frequency (Hz) BIT1: set frequency (Hz) BIT2: bus voltage (V on) BIT3: output voltage (V) BIT4: output current (A)	0x001F	○

Function code	Name	Detailed of parameters	Default value	Attr
		BIT5: output power （kW） BIT6: output torque （%） BIT7: DI output state BIT8: DO output state BIT9: AI1 voltage (v) BIT10: AI2 voltage (v) BIT11: potentiometer AI0 voltage (v) BIT12: Count value BIT13: Length value Pulse HDI frequency BIT14: running speed display BIT15:PID set		
F05.09	Displayed parameters 2 when running	0000～FFFF BIT0: PID feedback BIT1: PLC stage BIT2: high speed pulse input pulse frequency (kHz) BIT3: running frequency 2 （Hz) BIT4:Remaining run time BIT5: AI1 voltage before correction BIT6: AI2 voltage before correction BIT7: potentiometer AI0 voltage before correction BIT8: linear speed BIT9: current power on time BIT10: current running time Bit11:high speed pulse input pulse frequency, unit:1Hz Bit12: communication set Bit13: encoder feedback speed Bit14: main frequency X diplay Bit15auxiliary frequency Y display	0x0000	○
F05.10	LED display at stop	0000～FFFF Bit00: set frequency (Hz) Bit01: bus voltage (V) Bit02:DI input state Bit03:DO output state Bit04: AI1 voltage (v) Bit05: AI2 voltage (v) Bit06:potentiometer AI0 voltage (v) BIT07: Count value BIT08: Length value Bit09:PLC stage Bit10: load speed Bit11:PID set Bit12: high speed pulse input pulse frequency (kHz)	0x0033	○
F05.11	Software version 1	v0.0x	0.00	●
F05.12	Software version 2	v0.0x	0.00	●

Function code	Name	Detailed of parameters	Default value	Attr
F05.13	Product name	cT120	0	●
F05.14	Inverter module radiator temperature	0.0℃～100.0℃	0	●
F05.15	Cumulative running time	0h～65535h	0	●
F05.16	Load speed display decimal places	Unit place:B00.14 decimal places 0:0 1:1 2:2 3:3 Ten place:B00.19/B00.2 decimal places 1:1 2:2	21	○
F05.17	Cumulative power on time	0h～65535h	0	●
F05.18	Cumulative power consumption	0～65535°	0	●
		F06Group Input terminals		
F06.00	Functions of DI1 terminal	0: invalid 1: forward running 2: reverse running 3: Three line operation control 4: forward jogging 5: reverse jogging 6：terminal UP 7：terminal DOWN 8: coast to stop 9: fault reset 10: run pause 11: external fault constant open input 12: multi-step speed terminal 1 13: multi-step speed terminal 2 14: multi-step speed terminal 3 15: multi-step speed terminal 4 16: ACC/DEC selection 1 17: ACC/DEC selection 2 18: frequency source switch 19: UP/DOWN setting clear (terminal, keypad) 20: running command switch 21: ACC/DEC forbid 22: PID pause 23: PLC reset 24: wobble pause 25: counter input 26: counter reset 27: length count input 28: length reset 29: torque control forbid 30: high speed pulse (pulse) frequency input	1	☆
F06.01	Functions of DI2 terminal		4	☆
F06.02	Functions of DI3 terminal		9	☆
F06.03	Functions of DI4 terminal		12	☆
F06.04	Functions of DI5 terminal		13	☆
F06.05	reserved		0	☆
F06.06	reserved		0	☆
F06.07	reserved		0	☆
F06.08	reserved		0	☆

Function code	Name	Detailed of parameters	Default value	Attr
		(only valid to DI5) 31:reserved 32:Immediate DC braking 33:external fault constant open input 34: frequency set being valid terminal (if terminal set as this function. The terminal will be used to control what time the frequency change setting start to work) 35:negative PID direction 36: external stop terminal 1 (under keypad control mode, use this terminal to stop as the STOP key on keypad 37: control command switch terminals 2 (switch between terminal control and communication control) 38:PID integral pause 39:X setting and pre-setting switch 40:Y setting and pre-setting switch 41:motor selection terminal 1 42:reserved 43:PID parameter switch terminal 44: user define fault 1 45: user define fault 2 46:speed control/ torque control switch 47: emergency stop 48: external stop terminal 2 (under any control mode, this terminal can be used to stop as DEC time 4 49:DEC DC braking 50:this running time to 0 51:two/three wire mode switch 52: forbid REV 53～59:reserved		
F06.09	reserved		0	☆
F06.10	DI filter time	0.000s～1.000s	0.010	○
F06.11	Terminal control running mode	0: two-wire control mode 1 1: two-wire control mode 2 2: three-wire control mode 1 3: three-wire control mode 2	0	☆
F06.12	Termial UP/DOWN change rate every s	0.001Hz/s～65.535Hz/s	1.000	○
F06.13	Curve 1 minimum input	0.00V～F06.15	0.00	○
F06.14	Curve 1 minimum input corresponding setting	-100.0%～100.0%	0.0	○
F06.15	Curve 1 maximum input	F06.13～10.00V	10.00	○
F06.16	Curve 1 maximum input corresponding setting	-100.0%～100.0%	100.0	○
F06.17	AI1 filter time	0.00s～10.00s	0.10	○

Function code	Name	Detailed of parameters	Default value	Attr
F06.18	Curve 2 minimum input	0.00V～F06.20	0.00	○
F06.19	Curve2 minimum input corresponding setting	-100.0%～100.0%	0.0	○
F06.20	Curve 2 maximum input	F06.18～10.00V	10.00	○
F06.21	Curve 2 maximum input corresponding setting	-100.0%～100.0%	100.0	○
F06.22	AI2filter time	0.00s～10.00s	0.10	○
F06.23	Curve 3 minimum input	-10,00V～F06.25	-10.00	○
F06.24	Curve 3 minimum input corresponding setting	-100.0%～100.0%	-100.0	○
F06.25	Curve 3 maximum input	F06.23～10.00V	10.00	○
F06.26	Curve 3 maximum input corresponding setting	-100.0%～100.0%	100.0	○
F06.27	Keypad potentiometer AI0 filter time	0.00s～10.00s	0.10	○
F06.28	PULSE minimum input	0.00kHz～F06.30	0.00	○
F06.29	PULSE minimum input corresponding setting	-100.0%～100.0%	0.0	○
F06.30	PULSE maximum input	F06.28～100.00kHz	50.00	○
F06.31	PULSEmaximum input setting	-100.0%～100.0%	100.0	○
F06.32	PULSE filt time	0.00s～10.00s	0.10	○
F06.33	AI setting curve selection	Unit place:AI1curve selection 1:curve1(2point, referF06.13～F06.16) 2:curve2(2point, referF06.18～F06.21) 3:curve3(2point, referF04.23～F06.26) 4:curve4(4point, referA08.00～A08.07) 5:curve5（4point, referA08.00～A08.15) Ten place:AI2curveselection, same as AI1 Hundred place: keypad potentiometer AI0curveselection, same as AI2	321	○
F06.34	AI lower than minimum input setting selection	Unit place:AI1lower than minimum input setting selection 0: set minimum input correspondingly 1:0.0% Ten place:AI2lower than minimum input setting selection，same as AI1 Hundred place:keypad potentiometer AI0lower than minimum input setting selection，same as AI1	000	○
F06.35	DI1delay time	0.0s～3600.0s	0	○
F06.36	DI2delay time	0.0s～3600.0s	0	○
F06.37	DI3delay time	0.0s～3600.0s	0	○
F06.38	DI1-DI5input terminal valid selection	0:high level 1:low level Unit place:DI1	00000	☆

Function code	Name	Detailed of parameters	Default value	Attr
		Ten place:DI2 hundred place:DI3 Thousand place:DI4 Ten thousand place:DI5（HDO）		
F06.39	AI2 input signal selection	0: voltage signal 1: current signal	0	☆
F06.40	AI1terminal function selection（as DI）	0～59	0	☆
F06.41	AI2terminal function selection（as DI）	0～59	0	☆
F06.42	Keypad potentiometer AI0terminal function selection（as DI）	0～59	0	☆
F06.43	A1 as DI valid state selection	0:high level 1:low level unit place:AI1 ten place:AI2 hundred place:keypad potentiometer AI0	000	☆
F07 Group Output terminals				
F07.00	HDO output mode	0：pulse output 1：switch output	0	○
F07.01	HDOswitch output selection	0: no output 1: running 2: fault output 3: frequency level detection FDT output 4: frequency arrival 5: zero speed running 1 (no output at stop) 6: motor over load pre-alarm 7: inverter over load pre-alarm 8: set count value arrival 9: specified count value arrival 10:length arrival 11:simple PLC cycle is completed 12:running time arrival 13: frequency is limited 14: torque is limited 15: ready to run 16:AI1>AI2 17:upper limit frequency arrival 18:lower limit frequency arrival（related to running） 19:under voltage state output 20: communication set 21:location finished（reserved） 22:location approach（reserved） 23:zero speed running 2 (output at stop) 24:power on time arrive	0	○
F07.02	Relay T1 output selection		2	○
F07.03	Relay T2 output selection		0	○
F07.04	D0 output selection		1	○

Function code	Name	Detailed of parameters	Default value	Attr
		25:frequency level detection FDT2 output 26:frequency arrive 1 output 27: frequency arrive 2 output 28: current arrive 1 output 29: current arrive 2 output 30: time arrive output 31: AI1 input out of limit 32: loss load 33: REV running 34: 0 current state 35: module temperature arrive 36: output current over limit 37: lower frequency arrive (not related to running) 38: fault output (all faults) 39: motor over heat pre-alarm 40: current running time arrive 41: fault output (free stop faults and not output under voltage		
F07.05	reserved	reserved	4	○
F07.06	HDO pulse output selection	0: running frequency 1: set frequency	0	○
F07.07	AO1output selection	2: output current 3:output torque 4:output power 5:output voltage 6:high speed pulse output（100.0% corresponding to 100.0kHz） 7:AI1 8:AI2 9:potentiometerAI0 10:length 11:count value 12:communication set 13:motor speed 14:output current（100.0% corresponding to 1000.0A） 15:output voltage（100.0% corresponding to 1000.0V） 16:motor output torque (true value, percentage of rated current relative to motor) 17: inverter output torque (true value, percentage of rated current relative to inverter)	0	○
F07.08	reserved	reserved		○
F07.09	HDO pulse output max frequency	0.01kHz～100.00kHz	50.00	○

Function code	Name	Detailed of parameters	Default value	Attr
F07.10	AO1bias coefficient	-100.0%～100.0%	1.00	○
F07.11	AO1 gain	-10.00～10.00	0.0	○
F07.12	reserved	reserved		○
F07.13	reserved	reserved		○
F07.14	HDO switch output delay time	0.0s～3600.0s	0.0	○
F07.15	Relay 1 output delay time	0.0s～3600.0s	0.0	○
F07.16	Relay 2 output delay time	0.0s～3600.0s	0.0	○
F07.17	DO output delay time	0.0s～3600.0s	0.0	○
F07.18	reserved	0.0s～3600.0s	0.0	○
F07.19	DO output terminal valid state selection	0-positive logic 1:negative logic unit place:HDO ten place: relay 1 hundred place: relay 2 thousand place:DO ten thousand place:reserved	00000	○
F07.20	AO1output signal selection	0:voltage signal 1:current signal	0	○
F08 Group Fault and protection				
F08.00	Motor overload protection selection	0：permit 1：forbid	1	○
F08.01	Motor overload pre-alarm coefficient	50%～100%	1.00	○
F08.02	Motor overload pre-alarm detection time	0.20～10.00	80	○
F08.03	Motor overload pre-alarm act selection	0: no detection 1: overload warning is valid in running, continue to run 2: overload warning is valid in running, alarm (OL3) and stop 3: overload warning is valid in constant speed running, continue to run after detection 4: overload warning is valid in constant speed running, alarm (E.oL3) and stop after detection	1.00	○
F08.04	Over-voltage stall gain	0～100	1	○
F08.05	Over-voltage stall protection voltage	200.0～2000.0v set according to different models 220V:--V 380V:760V	0	○
F08.06	Over-current stall gain	0～100	760.0	☆
F08.07	Over-current stall protection current	100%～200%	20	○
F08.08	Instant stop not stop	0～100	150	☆

Function code	Name	Detailed of parameters	Default value	Attr
	gain Kp			
F08.09	Instant stop not stop Integral coefficient Ki	0～100	40	○
F08.10	Instant stop not stop act DEC time	0.0～300.0s	30	○
F08.11	Input phase loss / contactor protection	Unit place: input phase loss protection selection Ten place: contactor protection selection 0: disabled 1: enabled	20.0	☆
F08.12	Output phase loss protection selection	0: disabled 1: enabled	11	○
F08.13	Automatic reset times	0～20	1	○
F08.14	Automatic reset interval	0.1s～100.0s	0	○
F08.15	Motor overload pre-alarm coefficient	50%～100%	1.0	○
F08.16	First fault type	0: no fault 1:reserved 2:reserved 3:reserved 4: ACC overcurrent (E.oC1) 5: DEC overcurrent (E.oC2) 6: constant speed overcurrent (E.oC3) 7: ACC overvoltage (E.oU1) 8: DEC overvoltage (E.oU2) 9: constant speed overvoltage (E.oU3) 10: bus undervoltage fault (E.Lv) 11: motor overload (E.oL1) 12: inverter overload (E.oL2) 13: input side phase loss (E.ILF) 14: output side phase loss (E.oLF) 15: rectifier radiator overheating (E.oH1) 16: inverter radiator overheating (E.oH2) 17: external fault (E.EF) 18: communication failure (E.485) 19: current detection fault（E.ItE） 20: motor parameter learning fault（E.AUt） 21:EEFROM operation fault（E.EEP） 22: PID disconnection fault (E.PIDE) 23:（braking unit fault (E.bC） 24:run time arrival （E.ENd） 25:electric overload（E.oL3） 26:keypad communication fault（E.FCE） 27: parameter upload fault（E.UFE） 28: parameter download fault（E.dNE） 29:reserved	0	●
F08.17	Second fault type		0	●
F08.18	Third fault type (latest fault)		0	●

Function code	Name	Detailed of parameters	Default value	Attr
		30:reserved 31:reserved 32:earth fault 1（E.EAH1） 33:earth fault 2（E.EAH2） 34:speed bias fault（E.dEU） 35:mis-adjust fault（E.Sto） 36: under load fault（E.LL） 37:reserved 38:Buffer resistance overload fault（E.BoL） 39:contactor fault (E.CEr) 40:quick limit third fault(E.CBC) 41:switch motor while running (E.CrP) 42:user define fault 1(E.uD1) 43:user difin fault 2(E.uD2) 44:power on time arrive (E.PTo)		
F08.19	Frequency at third fault		0.00	●
F08.20	Current at third fault		0.00	●
F08.21	Bus voltage at third fault		0.0	●
F08.22	Input terminal status at third fault		0	●
F08.23	Output terminal status at third fault		0	●
F08.24	Inverter status at third fault		0	●
F08.25	Third fault time (count from latest power on)		0	●
F08.26	Third fault time (count from latest start running)		0.0	●
F08.27	Frequency at second fault		0.00	●
F08.28	Current at second fault		0.00	●
F08.29	Bus voltage at second fault		0.0	●
F08.30	Input terminal status at second fault		0	●
F08.31	Output terminal status at second fault		0	●
F08.32	Inverter status at second fault		0	●
F08.33	Second fault time (count from latest power on)		0	●
F08.34	Second fault time (count from latest start running)		0.0	●

Function code	Name	Detailed of parameters	Default value	Attr
F08.35	Frequency at first fault		0.00	●
F08.36	Current at first fault		0.00	●
F08.37	Bus voltage at first fault		0.0	●
F08.38	Input terminal status at first fault		0	●
F08.39	Output terminal status at first fault		0	●
F08.40	Inverter status at first fault		0	●
F08.41	First fault time (count from latest power on)		0	●
F08.42	First fault time (count from latest start running)		0.0	●
F08.43	Power one earth protection selection	0:invalid 1:valid	1	○
F08.44	Braking start voltage	200.0～2000.0v set according different models 220V:360V 380V:690V	690.0	○
F08.45	DO act selection while fault automatic reset period	0:not act 1:act	0	○
F08.46	Fault protection act selection 1	Unit place: motor over load（E.oL1） 0:free stop 1:stop as stop mode 2:continue running Ten place: input phase loss（E.ILF） hundred place: output phase loss（E.oLF） Thousand: external fault (E.EF) Ten thousand: communication failure (E.485)	00000	○
F08.47	Fault protection act selection 2	Unit place: encoder fault（E.PGL） 0:free stop Ten place:reserved 0:free stop 1:stop as stop mode Ten place:reserved Thousand place:reserved Ten thousand place:running time arrive（E.ENd）	00000	○
F08.48	Fault protection act selection 3	Unit place: user define fault 1（E.uD1） 0:free stop 1:stop as stop mode 2:continue running Ten place: user define fault 1（E.uD2） 0:free stop 1:stop as stop mode 2:continue running ten place:power on time arrive（E.PTo） 0:free stop	00000	○

Function code	Name	Detailed of parameters	Default value	Attr
		1:stop as stop mode 2:continue running Thousand place:reserved 0:free stop 1:DEC stop 2: DEC to 7% of motor rated frequency and run. Automatic back to set frequency if not loss load Ten thousand place: PID feedback disconnect fault（E.PIdE） 0:free stop 1:stop as stop mode 2:continue running		
F08.49	Fault protection act selection 4	Unit place:too big speed bias（E.dEU） 0:free stop 1:stop as stop mode 2:continue running ten place:reserved hundred place:reserved	000	○
F08.50	reserved			
F08.51	Continue running (while fault) frequency selection	0:running as current frequency 1:running as set frequency 2:running as upper limit frequency 3:running as lower limit 4:running as abnormal standby frequency	0	○
F08.52	Abnormal standby frequency setting	0.0%～100.0%(current aim frequency)	100	○
F08.53	Motor temperature sensor types	0:no temperature sensor 1:PT100 2:PT1000	0	○
F08.54	Motor over heat protection value	0℃～200℃	110	○
F08.55	Motor over heat pre alarm value	0℃～200℃	90	○
F08.56	Instant stop not stop act selection	0:invalid 1:DEC 2:DEC to stop	0	☆
F08.57	Judging voltage for suspended stop instant stop act	80.0%～100.0%	85.0	☆
F08.58	Judging time for instant stop not stop voltage rise	0.0s～100.0s	0.5	☆
F08.59	Judging voltage for instant stop not stop act	60.0%～100.0%(standard bus voltage)	80.0	○
F08.60	Loss load protection selection	0:invalid 1:valid	0	○
F08.61	Detection lever for loss load	0.0～100.0%	10.0	○

Function code	Name	Detailed of parameters	Default value	Attr
F08.62	Detection time for loss load	0.0～60.0s	1.0	○
F08.63	reserved	0～65536	0	●
F08.64	Over speed detection value	0.0%～50.0%(max frequency)	20.0	○
F08.65	Over speed detection time	0.0s:no detection 0.1～60.0s	1.0	○
F08.66	Detection value for too big speed bias	0.0%～50.0%(max frequency)	20.0	○
F08.67	Detection time for too big speed bias	0.0s: no detection 0.1～60.0s	5.0	○
F08.68	Over current basis setting	0～max frequency max frequency output highest voltage value	37.50	☆

Troubleshooting list

Code	Type	Reason	Solution
E.oC1	ACC running over current	1. The acceleration is too fast 2. The grid voltage is too low 3. The inverter power is too small	1. Increase the ACC time 2. Check the input power 3. Select the inverter of larger power
E.oC2	DEC running over current	1. The deceleration is too fast 2. Load inertia torque is too large 3. The inverter power is too small	1. Increase the DEC time 2. Add the appropriate energy consumption braking components 3. Select the inverter of larger power
E.oC3	Constant speed running over current	1. Load sudden change or abnormal 2. The grid voltage is too low 3. The inverter power is too small	1. Check load or decrease load sudden change 2. Check the input power 3. Select the inverter of larger power
E.oU1	ACC running over voltage	1. The input voltage is abnormal 2. After instantaneous power failure, restart the rotating motor	1. Check the input power 2. Avoid restart at stop
E.oU2	DEC running over voltage	1. The deceleration is too fast 2. The load inertia is too large 3. The input voltage is abnormal	1. Increase the DEC time 2. Add the appropriate energy consumption braking components 3. Check the input power
E.oU3	Constant speed running over voltage	1. The input voltage has changed abnormally 2. The load inertia is too large	1. Install the input reactor 2. Add the appropriate energy consumption braking components
E.Lv	Bus under voltage	The grid voltage is too low	Check the grid input power

Code	Type	Reason	Solution
E.oL1	Motor overload	1. The grid voltage is too low 2. The motor rated current is not set correctly 3. Motor stall or load sudden change 4. Motor power is much larger than load power	1. Check the grid voltage 2. Reset the motor rated current 3. Check the load and adjust the torque boost 4. Select the appropriate motor
E.oL2	Inverter overload	1. The acceleration is too fast 2. Restart the rotating motor 3. The grid voltage is too low 4. The load is too large	1. Reduce the acceleration speed 2. Avoid restart at stop 3. Check the grid voltage 4. Select the inverter of larger power
E.ILF	Input phase loss	Input R, S, T phase loss	1. Check the input power 2. Check the installation and wiring
E.OLF	Output phase loss	1. Output U, V, W phase loss 2. Serious asymmetry of load three-phase	1. Check the output wiring 2. Check the motor and cable
E.oH1	Rectifier module overheating	1. Instantaneous over current of the inverter 2. Phase or ground short circuit of output three phases 3. The duct is blocked or the fan is damaged 4. The ambient temperature is too high 5. The wiring or connectors of the control board is loose 6. The auxiliary power supply is damaged and the drive voltage is under voltage 7. The power module bridge is conducted 8. The control board is abnormal	1. Refer to over current solutions 2. Redistribution 3. Dredge the duct or replace the fan 4. Reduce the ambient temperature 5. Check and reconnect 6. Ask for service 7. Ask for service 8. Ask for service
E.oH2	Inverter module overheating		
E.EF	External fault	SI external fault input terminal operation	1. Check the external device input
E.485	Communication fault	1. Incorrect baud rate setting 2. Communication error when using serial communication 3. Communication interruption for a long time	1. Set the appropriate baud rate 2. Press the STOP/RESET key to reset and ask for service 3. Check the wiring of communication interfaces
E.ITE	Current detection circuit	1. The connector of the control	1. Check the connector

Code	Type	Reason	Solution
	fault	board is in poor connection 2. The auxiliary power supply is damaged 3. Hall device is damaged 4. Amplifier circuit is abnormal	and reconnect 2. Ask for service 3. Ask for service 4. Ask for service
E.AUT	Motor autotuning fault	1. The motor capacity does not match with the inverter capacity 2. Incorrect setting of motor rating parameters 3. The deviation between autotuning parameters and standard parameters is too large 4. Autotuning timeout	1. Replace the drive model 2. Set the rated parameters according to the motor name plate 3. Make the motor at no load and re-identification 4. Check the motor wiring and parameters setting
E.EEP	EEPROM read and write fault	1. Control parameters read and write error 2.EEPROM damaged	1. Press the STOP/RESET key to reset and ask for service 2. Ask for service
E.PIDE	PID feedback disconnection	1.PID feedback disconnection 2.PID feedback source disappears	1. Check the PID feedback signal cable 2. Check the PID feedback source
E.bC	Braking unit fault	1. Braking wiring fault or braking tube damaged 2. The external braking resistance is too small	1. Check the braking unit and replace a new braking tube 2. Increase the braking resistance
E.END	Running time arrival	User trial time arrival	Ask for service
E.oL3	Overload pre-warning	1. The load is too heavy 2. Inverter per-warning as setting	1. Select a larger power inverter 2. Check load and Pre-warning setting
E.FCE	Keypad Communication fault	1. Keypad wire not good 2. Keypad wire too long or broken 3. Communication part of keypad or main board have electric problem	1. Check keypad wire 2. Check if there is disturb 3. Change hardware,ask for service
E.UFE	Parameter up load wrongly	4. Keypad wire not good 5. Keypad wire too long or broken 6. Communication part of keypad or main board have electric problem	4. Check keypad wire 5. Check if there is disturb 6. Change hardware,ask for service
E.dNE	Parameter down load wrongly	7. Keypad wire not good 8. Keypad wire too long or	7. Check keypad wire 8. Check if there is disturb

Code	Type	Reason	Solution
		broken 9. Communication part of keypad or main board have electric problem	9. Change hardware,ask for service
E.EAH1	Earth fault 1	1. Inverter output short connect to earth 2. Current detection circuit fault	1. Check motor wire Change hall, change control board
E.dEU	Speed bias fault	1. Load too heavy or blocked Control parameter setting not right	1. Check load is normal Check detection time and control parameters
E.Sto	Stall fault	1. Load is abnormal or inverter not connect motor 2. Synchronous motor control parameters not right. Self start not right.	1. Check load Check control parameters, add stall detection time
E.LL	Under load fault	Inverter prewarning as setting value	Check load and prewarning setting value

Note: if still can not settle down problem, please contact after-sales department