

## 6 Frame Reversible Electric Honey Extractor – Customer Instructions

### Basic guide

- After unpacking, check that the rotation cage spins freely and that there is no damage to the unit.
- Plug in the main power.
- Before extraction, please secure the extractor to the ground or some platform if possible.

### To Begin Extracting.

- Place uncapped honey frames into the cages, trying to achieve a balanced load
- Press the FWD button and its light should illuminate (the extractor baskets will spin anti clockwise) or press REV and the light will flash (the extractor basket will spin clockwise). Dial up to the desired speed (0-1400rpm) allowing the motor to get up to speed as you increase the knob setting.
- The cage will begin to spin and the individual cages containing the honey frames will swing to one side automatically as the revs increase.
- To view RPM, press the set button till the Hz and A light are illuminated at the same time.
- Before reversing, turn the speed knob back to 0 before and wait till the cage has stopped spinning.
- **IF THE UNIT STARTS TO VIBRATE, STOP, REARRANGE FRAMES TO BALANCE LOAD AND/OR REDUCE SPEED**

### Maintenance

- There is 1 grease nipple under the machine. This needs a small amount of grease approximately every 20-30 hours of use. Do not apply too much grease.



Further Programming of the controller is available in the detailed instructions on the next pages.

Any questions, please don't hesitate to get in touch with the team at Beequip NZ

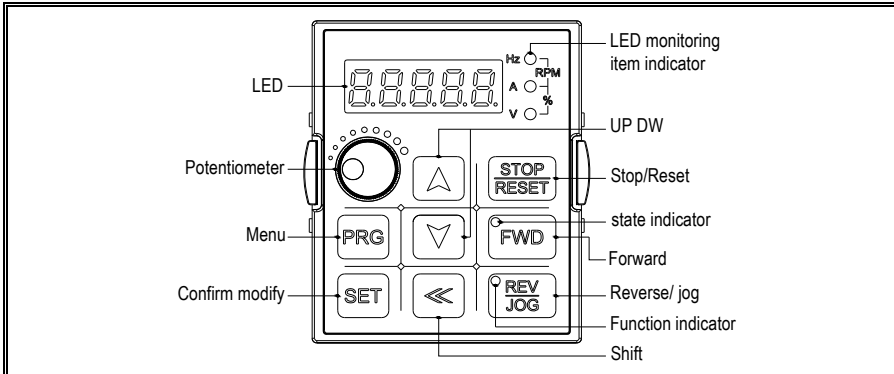
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# Chapter 3: Keyboard and Operation

## 3.1 Keyboard layout and function specification



Key	Key name	Key functions
	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 monitoring interface.
	Confirm/modify key	Press to modify parameter while in menu interface. Press again to confirm after 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 monitoring state (While given frequency or PID or given
	Shift key	Select digit of function no modified by up/down key; Select parameter digits modified by up/down key. Change LED monitoring items while standby or running
	Forward key	While run/stop is controlled by keyboard, press this key, the inverter forward rotate.
	Reverse/ jog 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 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 is not solved)
	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 value.
	%	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 indicators	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 AC70 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

Code function	Function name	Setting range and definition	Factory default	property	Communication code
E-00	Control method selection	0: Open loop vector control without PG 1: V/F control mode	1	○	100H
E-01	Running control command channel selection	0: Operator keypad 1: External terminal control 2: RS485 Communications port control	0	○	101H
E-02	Frequency reference given main channel selection	0: Operator keypad digital given 1: Potentiometer of keypad 2: Terminal VS1 analog voltage 0-10V 3: Terminal AS analog current signal 4~20mA 4: Reserve 5: Reserve 6: RS485 communication port 7: Up and Down control 8: General PID operation 9: Constant pressure PID control 10: Program running 11: Swing frequency run 12: Terminal selection:	1	○	102H
E-03	Frequency reference given auxiliary channel selection	0: Operator keypad digital 1: Potentiometer of keypad 2: Terminal VS1 analog voltage 0-10V 3: Terminal AS analog current signal 4~20mA 4: Reserve 5: Reserve 6: RS485 communication port 7: Up and Down control 8: General PID operation 9: Constant pressure PID control 10: Program running	0	○	103H

E-04	Frequency reference given channel gain	0.01 ~ 5.00	1.00	○	104H
E-05	Frequency reference given channel combination mode	0: Main channel is valid, auxiliary channel is invalid. 1: Auxiliary channel valid, main channel invalid 2: Both channel is valid if non zero value, 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	Upper LED monitor selection	0: Frequency Given 1: Output frequency 2: Output current 3: Input voltage	0	●	106H
E-07	Reserve	4: Output voltage 5: Machine speed 6: PID given given 7: PID feedback value		●	107H
E-08	REV/JOG key of keypad function selection	0: Reverse 1: Jog	0	●	108H
E-09	Maximum frequency	0.01 ~ 600.00Hz	50.00Hz	○	109H
E-10	Upper limit frequency	lower limit frequency ~ maximum frequency	50.00Hz	●	10AH
E-11	Lower limit frequency	0.00 ~ Upper limit frequency	0.00Hz	●	10BH
E-12	Lower limit frequency running mode	0: Stop 1: running with lower limit frequency	1	●	10CH
E-13	Acceleration time 1	0.1 ~ 6500.0s	※	●	10DH
E-14	Deceleration time 1	0.1 ~ 6500.0s	※	●	10EH

E-15	Acceleration /deceleration mode selection	<b>LED unit digit: decelerate /decelerate mode.</b> 0: linear accelerate 1: S curve <b>LED tens digit:</b> <b>Accelerate/decelerate time datum point.</b> 0: Motor rated frequency 1: Maximum frequency <b>LED hundreds digit:</b> <b>Equidistance stop function</b> 0: Disable 1: Enable <b>LED Thousands digit:</b> 0: Disable 1: Enable	0000	●	10FH
E-16	Frequency given by digital keypad	lower limit frequency~Upper limit frequency		●	110H
E-17	V/F curve mode	0: Constant torque curve 1: Descend torque curve (1.5 power curve) 2: Descend torque curve (1.7 Power curve) 3: Descend torque curve (2.0 Square curve) 4: User define curve	0	○	111H
E-18	Torque boost	0.0%~25.0%	※	●	112H
E-19	Filter time constant	0.01~99.99	※	●	113H
E-20	Carrier frequency	0.7KHz~15.0KHz	※	●	114H
E-21	Carrier characteristic	<b>LED unit Digit: Associate of carrier frequency and output frequency configure.</b> 0: Output frequency associate is disabled. 1: Output frequency associate is enabled. <b>LED tens digit: Associate of carrier frequency and module temperature configure.</b> 0: Module temperature associate is disabled. 1: Module temperature associate is enabled. <b>LED Hundreds digit: PWM mode selection</b> 0: Fixed PWM mode 2: Random PWM mode 1 <b>LED Thousands digit: Inhibition of shock</b> 0: Inhibition of shock is disabled 1: Inhibition of shock is enabled	1010	●	115H
E-22	V/F slip compensation	0%~200%	100%	○	116H

E-23	Energy saving mode selection	<b>LED unit digit: Auto energy saving selection</b> 0: disable 1: enable <b>LED tens digit: V/F slip compensation</b> 0: Disable 1: Enable <b>LED hundreds digit: Reserve</b> <b>LED thousands digit: Overmodulation</b> 0: Overmodulation allow 1: Overmodulation not allow	1000	○	117H
E-24	Voltage auto regulation function	0: Disable 1: Enable in full process 2: Disable only in deceleration	2	●	118H
E-25	Jog frequency	0.50Hz ~ upper limit frequency	5.00Hz	●	119H
E-26	Jog acceleration time	0.1 ~ 6500.0s	2.0s	●	11AH
E-27	Jog deceleration time	0.1 ~ 6500.0s	2.0s	●	11BH
E-28	Starting frequency	0.00 ~ 60.00Hz	0.50Hz	○	11CH
E-29	Starting frequency holding time	0.0 ~ 20.0s	0.0s	○	11DH
E-30	Starting mode selection	<b>LED unit digit: Starting mode selection.</b> 0: Starts from starting frequency 1: DC braking first, and then start from starting frequency 2: Restart after speed search <b>LED tens digit: Reserve</b> <b>LED Hundreds digit: Speed search direction</b> 0: Speed search performs only in running direction 1: bi-direction speed search <b>LED Thousands digit: Speed search mode</b> 0: Software speed search 1: Hardware speed search	※000	○	11EH
E-31	Power off restart selection	0: Disalbe 1: Enalbe	0	●	11FH
E-32	Power off restart waiting time	0.0 ~ 10.0s	0.5s	●	120H
E-33	Free stop frequency	0.00 ~ 60.00Hz	0.00Hz	●	121H
E-34	Stop mode	0: Deceleration stop 1: Free stop	0	●	122H
E-35	DC braking current	0 ~ 150%	50%	●	123H
E-36	DC braking time when stop	0.0 ~ 30.0s	0.0s	●	124H
E-37	DC braking starting frequency when stop	0.00 ~ 60.00Hz	0.00Hz	●	125H

E-38	DC braking time when start	0.0~10.0s	0.0s	●	126H
E-39	Jump frequency 1	0.00~600.0Hz(Fmax)	0.00Hz	●	127H
E-40	Jump frequency 2	0.00~600.0Hz(Fmax)	0.00Hz	●	128H
E-41	Jump frequency 3	0.00~600.0Hz(Fmax)	0.00Hz	●	129H
E-42	Jump frequency range	0.00~5.00Hz	0.00Hz	●	12AH
E-43	Number of auto restart attempts	0: Disable 1~3: Enable	0	●	12BH
E-44	Fault auto reset waiting time	0.1~20.0s	1.0s	●	12CH
E-45	Machine warm up time	0.0~6500s	0.0s	●	12DH
E-46	Running direction selection	0: Consistent with the default direction 1: Opposite to the default direction 2: Reverse running forbidden.	0	○	12EH
E-47	FOR/REV dead zone time	0.0~10.0s	0.0s	●	12FH
E-48	Cooling fans running selection	0: Fan runs when switch on. 1: Fan runs or not relates with temperature during inverter stop mode, fan runs when inverter running. 2: Fan stop during inverter stop mode, running if not relates with temperature during inverter ruing	※	●	130H
E-49	Inverter protecting mode selection	<b>LED unit digit: Overvoltage protecting selection during deceleration</b> 0: Disable 1 Enable <b>LED ten digit: Output phase missing protection</b> 0: Disable 1 Enable <b>LED hundred digit: Input phase missing protection</b> 0: Disable 1 Enable <b>LED thousand digit: Inverter overload, over heat protect mode selection.</b> 0: Free stop 1: Running with current limit	0※11	●	131H
E-50	Coefficient value of electronic thermal	30%~120% (disable for value less than 30)	0%	●	132H
E-51	Stall protecting current limit value	100%~250%	160 G 120 P	●	133H
E-52	Stall protecting DC bus voltage threshold value	105~160%	138%	●	134H
E-53	Dynamic braking and decelerating over voltage suppression threshold voltage	105~160%	130%	●	135H
E-54	Ratio of dynamic braking	0~100%	100%	●	136H
E-55	DC bus under voltage protecting value	60~90%	65%	●	137H
E-56	Reserve				138H
E-57	Reserve				139H



E-58	Reserve				13AH
E-59	Rotation speed display scale factor	0.1~2000.0%	100.0%	●	13BH
E-60	Ratio of inverter output voltage	50~110%	100%	○	13CH
E-61	G/P type setting	0: type 1: type	0	○	13DH
E-62	Speed search stabilizing keeping time	0.200~10.000s	0.600s	●	13EH
E-63	Parameters change protection	0: All the parameters changing is allowed 1: Only keyboard digital given parameter changing allowed 2: All the parameters prohibit changing	0	●	13FH
E-64	Parameter initialization	0: Null 1: Restores to factory default setting value 2: Clear fault record 3: Transfer parameters of inverter to keypad and save. 4: Transfer parameters saved of keypad to inverter	0	○	140H
E-65	Factory password	0~9999	0	●	141H
E-66	Information inquiry	0: Null operation 1: State monitoring inquiry 2: Fault information inquiry	0	●	142H
E-67	Interference suppression selection	<b>LED unit digit: Overvoltage interference suppression</b> 0: Disable 1: Enable <b>LED ten digital: SC interference suppression</b> 0: Disable 1: SC interference suppression 1 2: SC interference suppression 2 <b>LED hundred digital: over current interference suppression</b> 0: Disable 1: Over current interference suppression 1 2: Over current interference suppression 2 <b>LED thousand digital: over current in deceleration suppression</b> 0: Disable 1: Enable 2: Enable frequency reducing for protecting over current.	0001	●	143H

### External terminal parameters

Code function	Function name	Setting range and define	Factory default	property	Communication code
F-01	Input signal selection 1 ( X1 )	0: Invalid 1: Forward jog operation 2: Reverse jog operation 3: Free stop 4: Fault reset	27	<input type="radio"/>	201H
F-02	Input signal selection2 ( X2 )	5: Multi steps speed control 1 6: Multi steps speed control 2 7: Multi steps speed control 3 8: Multi steps speed control 4 9: UP/Down running frequency increasing UP	28	<input type="radio"/>	202H
F-03	Input signal selection 3 ( X3 )	10:UP/Downrunning frequency decreasing DW 11: Three wire operation control D (X) 12: PID control cancel 13: External fault alarm	1	<input type="radio"/>	203H
F-04	Input signal selection 4 ( X4 )	14:Acceleration/deceleration time selection terminal 1. 15:Acceleration/deceleration time selection terminal 2 16: Frequency main channel selection terminal 1	2	<input type="radio"/>	204H
F-05	Input signal selection 5 (X5 )	17: Frequency main channel selection terminal 2 18: Frequency main channel selection terminal 3 19: Frequency main channel selection terminal 4	3	<input type="radio"/>	205H
F-06	Input signal selection 6 ( X6 )	20: Program running pause 21: Program restart 22: Timer trigger terminal 23: Timer reset terminal 24: Counter reset terminal 25:Counter clock input terminal 26:Only terminal control channel is enabled selection 27: Forward running 28: Reverse running	4	<input type="radio"/>	206H

F-07	Input signal respond mode selection	<p><b>LED unit digit: Free stop terminal recover mode</b>  0: Recover to original command with speed search function.  1: Don't recover to original command after free stop terminal disconnecting.  2: Recover to original command without speed search function.</p> <p><b>LED ten digit: UP and DW terminal control starting frequency setting</b>  0: Runs with UP/DW terminal adjusting without save the frequency record after power loss.  1: Run to last stop moment frequency and then perform UP/DW adjusting.  2: Runs to preset frequency [ F-70 ] first, and then execute UP/DW adjusting.</p> <p><b>LED hundred digit: STOP/RESE of keypad effective range selection.</b>  0: STOP/RESE key valid only when under keypad control  1: STOP/RESE key valid under any run command source</p> <p><b>LED thousand digit: Terminal running mode selection after fault reset</b>  0: Start inverter running directly after power on in terminal control mode  1: Stop first and then start in terminal control mode.</p>	0001	○	207H
F-08	Terminal running control mode	<p><b>LED unit digit: rminimal control mode selection</b>  0: Standard running control mode  1: 2wire running control mode  2: 2 wire control mode 1  3: 3 wire control mode 2  4: 3 wire control mode 3  5: 3 wire control mode 4</p> <p><b>LED ten digit: serve</b>  <b>LED hundred digit: serve</b>  <b>LED thousand: Reserve</b></p>	0000	○	208H
F-09	1 step speed setting 1X	0.00Hz~upper limit frequency	30.00Hz	●	209H
F-10	2 step speed setting 2X		25.00Hz	●	20AH
F-11	3 step speed setting 3X		40.00Hz	●	20BH
F-12	4 step speed setting 4X		50.00Hz	●	20CH

F-13	5 step speed setting 5X		50.00Hz	●	20DH
F-14	6 step speed setting 6X		40.00Hz	●	20EH
F-15	7 step speed setting 7X		25.00Hz	●	20FH
F-16	8 step speed setting 8X		10.00Hz	●	210H
F-17	Reserve				211H
F-18	Reserve				212H
F-19	Speed search tracking speed	0.1~10.0%	0.2%	○	213H
F-20	Voltage stores time	0.10S~10.00S	0.60S	○	214H
F-21	Speed search respond current threshold value	10%~200%	120%	○	215H
F-22	Frequency reducing acceleration time	0.1~6500.0s	2.0s	●	216H
F-23	Frequency reducing acceleration time	0.1~6500.0s	0.3s	●	217H
F-24	Acceleration time 2	0.1~6500.0s	※	●	218H
F-25	Deceleration time 2		※	●	219H
F-26	Acceleration time 3		※	●	21AH
F-27	Deceleration time 3		※	●	21BH
F-28	Acceleration time 4		※	●	21CH
F-29	Deceleration time 4		※	●	21DH
F-30	Relay output terminal (TA, TB, TC)	0: Zero frequency (standby state) 1: Fault alarm 1. (Including fault auto reset period.) 2: Fault alarm 2. (Not includes fault auto reset period.) 3: Frequency arriving detection	1	●	21EH
F-31	Output terminal Y1	4: Frequency level detection 5: Running statuses 6: Reverse running 7: Under voltage of inverter 8: Overload pre-alarm 9: Output frequency reach upper limit frequency 10. Output frequency reach lower limit frequency 11. External fault stop 12. Timer times up 13. Counter reach maximum values 14. Counter reach setting values 15. PID feedback upper limit alarm	4	●	21FH

F-32	Output terminal Y2	16. PID feedback lower limit alarm 17. Sensor broken 18. Program running cycle completed 19. Program running step completed 20. Dynamic braking processing 21. Output terminal control by external 22. Fault alarm 1. (Including fault auto reset period, including fault-LU1)	7	●	220H
F-33	Frequency arriving detect bias	0.00~50.00Hz	1.00Hz	●	221H
F-34	Output frequency level detection	0.00~600.0Hz	30.00Hz	●	222H
F-35	Output frequency level detecting relay time	0.0~20.0s	0.0s	●	223H
F-36	Overload pre-alarm level	50~200%	150%	●	224H
F-37	Overload pre-alarm delay time	0.0~20.0s	1.0s	●	225H
F-38	Timer setting value	1~65000s	1s	●	226H
F-39	Counter maximum value	1~65000	1000	●	227H
F-40	Counter setting value	1~ Counter maximum value	100	●	228H
F-41	VS1 terminal input voltage lower limit	0.00V~ [F-42]	0.50V	●	229H
F-42	VS1 terminal input voltage upper limit	[F-41] ~10.00V	9.50V	●	22AH
F-43	VS1 terminal input voltage gain	0.01~5.00	1.00	●	22BH
F-44	Reserve				22CH
F-45	Reserve				22DH
F-46	Reserve				22EH
F-47	Reserve				22FH
F-48	Reserve				230H
F-49	Reserve				231H
F-50	AS terminal input current lower limit	0.00mA~ [F-51]	4.20mA	●	232H
F-51	AS terminal input current upper limit	[F-50] ~20.0mA	19.50mA	●	233H
F-52	AS terminal input current gain	0.01~5.00	1.00	●	234H
F-53	Reserve				235H
F-54	Reserve				236H
F-55	Reserve				237H
F-56	Input lower limit correspond setting frequency	0.00Hz~ [F-57]	0.00Hz	●	238H
F-57	Input upper limit correspond setting frequency	[F-56] ~maximum frequency	50.00Hz	●	239H

F-58	Input signal characteristic selection	<b>LED unit digit: VS1 input characteristic selection</b> 0: Positive characteristic 1: Negative characteristic <b>LED ten digit: AS input characteristic selection</b> 0: Positive characteristic 1: Negative characteristic <b>LED hundred digit: VS2 input characteristic selection</b> 0: Positive characteristic 1: Negative characteristic <b>LED thousand digit: Pulse input characteristic selection</b> 0: Positive characteristic 1: Negative characteristic	0000	●	23AH
F-59	Terminal analog input filtering time constant	0.01 ~ 5.00	0.50	●	23BH
F-60	Reserve	0: Output signal disable 1: Output frequency/speed 2: Output current 3: Given frequency/speed reference		●	23CH
F-61	Output terminal ( AO2 ) selection	4: PID given value 5: PID feedback value 6: DC bus voltage 7: Output voltage	3	●	23DH
F-62	Analog output signal selection	<b>LED unit digit: A02 output signal mode selection</b> 0: Frequency pulse train output 1: 0 ~ 20mA 2: 4 ~ 20mA 3: 0 ~ 10V <b>LED ten digit: Reserve</b> <b>LED hundred digit: Reserve</b> <b>LED thousand digit: Reserve</b>	0003	●	23EH
F-63	Reserve			●	23FH
F-64	AO2 output signal gain	25% ~ 500%	100%	●	240H
F-65	Reserve			●	241H
F-66	AO2 output signal zero adjust	-10.0% ~ 10.0%	0.0%	●	242H
F-67	Keyboard potentiometer Input voltage lower limit	0.00V ~ [F-68]	0.20V	●	243H
F-68	Keyboard potentiometer Input voltage upper limit	[F-67] ~ 5.50V	4.80V	●	244H
F-69	Keyboard potentiometer gain	0.00 ~ 5.00	1.00	●	245H
F-70	UP/DW terminal preset frequency	0.00Hz ~ upper limit frequency	0.00Hz	●	246H
F-71	UP/DW Power-off memorized frequency	0.00Hz ~ upper limit frequency	0.00Hz	○	247H

### Special function parameters

Code function	Function name	Setting range and define	Factory default	priority	Communication code
H-01	User setting voltage V1	0.0% ~ [H-03]	3.0%	○	301H
H-02	User setting frequency F1	0.0Hz~ [H-04]	1.00Hz	○	302H
H-03	User setting voltage V2	[H-01~H-05]	28.0%	○	303H
H-04	User setting frequency F2	[H-02~H-06]	10.00Hz	○	304H
H-05	User setting voltage V3	[H-03~H-07]	55.0%	○	305H
H-06	User setting frequency F3	[H-04~H-08]	25.00Hz	○	306H
H-07	User setting voltage V4	[H-05~H-09]	80.0%	○	307H
H-08	User setting frequency F4	[H-06~H-10]	37.50Hz	○	308H
H-09	User setting voltage V5	[H-07] ~100.0%	100.0%	○	309H
H-10	User setting frequency F5	[H-08] ~maximum frequency	50.00Hz	○	30AH
H-11	PID output characteristic	0: Positive characteristic 1: Negative characteristic	0	○	30BH
H-12	PID controller given signal sources	0: Keypad potentiometer 1: PID keypad digital given 2: External terminal VS1:0-10V 3: External terminal AS: 4~20mA 4: Reserve 5: Reserve 6: RS485 interface	1	○	30CH
H-13	PID controller feedback signal source	0: External terminal VS1:0-10V 1: External terminal AS: 4~20mA 2: Reserve 3: Reserve	1	○	30DH
H-14	PID preset frequency	0.00Hz~upper limit frequency	0.00Hz	○	30EH
H-15	PID preset frequency running time	0.0~6500.0s	0.0s	●	30FH
H-16	PID keypad digital given	0.0~100.0%	50.0%	●	310H
H-17	PID 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 constant I	0.1~100.0s	2.0s	●	314H
H-21	Differential gain D	0.0~10.0	0.0	●	315H
H-22	Sampling period	0.01~60.00s	0.10s	●	316H
H-23	PID control deviation limit	0.0~20.0%	0.0%	●	317H
H-24	Starting threshold value	0.0%~Sleep threshold value	0.0%	●	318H
H-25	Sleep threshold value	Starting threshold value~100.0%	100.0%	●	319H





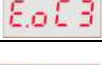

H-26	Alarm upper limit value	Alarm lower limit value~100.0%	100.0%	●	31AH
H-27	Alarm lower limit value	0.0%~Alarm upper limit value	0.0%	●	31BH
H-28	Sensor disconnection detection	0.0~20.0%	0.0%	●	31CH
H-29	Sensor disconnection alarm operation selection	0: continue running 1: Stop	0	●	31DH
H-30	Upper limit threshold	lower limit threshold~100.0%	100.0%	●	31EH
H-31	Lower limit threshold	0.0%~Upper limit threshold	0.0%	●	31FH
H-32	Program running mode	0: Single cycle running (time by second) 1: Continuous cycle running 2: single cycle, continuous running (time by second) 3: Single cycle running (time by minute) 4: Continuous cycle (time by minute) 5: Single cycle, continuous running (time by minute)	0	○	320H
H-33	Program run breakpoint restore mode selection	0: Running at the first step speed 1: Continue to run with breakpoint running frequency and retiming. 2: Continue to run with the breakpoint running frequency and residual time.	0	○	321H
H-34	Program running state power down memory selection	0: NO power down memory 1: power down memory	0	○	322H
H-35	1 step speed direction and accel/decel time	0: Forward; Acceleration time 1/Deceleration time 1	0	●	323H
H-36	2 step speed direction and accel/decel time	1: Forward; Acceleration time 1/Deceleration time 2	1	●	324H
H-37	3 step speed direction and accel/decel time	2: Forward; Acceleration time 1/Deceleration time 3	2	●	325H
H-38	4 step speed direction and accel/decel time	3: Forward; Acceleration time 1/Deceleration time 4	3	●	326H
H-39	5 step speed direction and accel/decel time	4: Reverse; Acceleration time 1/Deceleration time 1	4	●	327H
H-40	6 step speed direction and accel/decel time	5: Reverse; Acceleration time 1/Deceleration time 2	5	●	328H
H-41	7 step speed direction and accel/decel time	6: Reverse; Acceleration time 1/Deceleration time 3	6	●	329H
H-42	8 step speed direction and accel/decel time	7: Reverse; Acceleration time 1/Deceleration time 4	7	●	32AH
H-43	1 step speed running time T1	0.0~6000s(min)	10.0	●	32BH
H-44	2 step speed running time T2		10.0	●	32CH
H-45	3 step speed running time T3		10.0	●	32DH
H-46	4 step speed running time T4		10.0	●	32EH
H-47	5 step speed running time T5		10.0	●	32FH
H-48	6 step speed running time T6		10.0	●	330H
H-49	7 step speed running time T7		10.0	●	331H














H-50	8 step speed running time T8		10.0	●	332H
H-51	Differential frequency $\Delta f$ in swing frequency	0.00~20.00Hz	2.00Hz	●	333H
H-52	Motor rated power	0.4~1100.0KW	※	○	334H
H-53	Motor rated frequency	0.00~600.00Hz	50.00Hz	○	335H
H-54	Motor rated speed	0~18000RPM	※	○	336H
H-55	Motor rated voltage	0~1500V	※	○	337H
H-56	Motor rated current	0.1~1000.0A	※	○	338H
H-57	Motor no load current	0.01~650.00A	※	○	339H
H-58	Motor stator resistor	0.001~65.000 $\Omega$	※	○	33AH
H-59	Motor rotator resistor	0.001~65.000 $\Omega$	※	●	33BH
H-60	Motor stator inductance	0.1~6500.0mH	※	●	33CH
H-61	Motor rotator mutual inductance	0.1~6500.0mH	※	●	33DH
H-62	Motor auto tuning selection	0: Null operation. 1: Rotational motor auto tuning. 2: Stationary auto tuning	0	○	33EH
H-63	Motor magnetic saturation coefficient 1	0~9999	※	●	33FH
H-64	Motor magnetic saturation coefficient 2	0~9999	※	●	340H
H-65	Motor magnetic saturation coefficient 3	0~9999	※	●	341H
H-66	Linkage main station setting	0: Local machine configure as linkage slave station 1: Main station control mode 1. 2: Main station control mode 2.	0	●	342H
H-67	Local inverter address	1~247	1	●	343H
H-68	Data format	0: No check (N,8,1) 1: Even parity check(E,8,1) 2: Odd parity check (O,8,1) 3: No check (N,8,2)	3	○	344H
H-69	Baud rate	0: 1200bps 1: 2400bps 2: 4800bps 3: 9600bps 4: 19200bps 5: 38400bps	3	○	345H
H-70	Communication setting frequency ratio	0.00~20.00	1.00	●	346H
H-71	Time of communication time out	0.0~6500.0s	10.0s	●	347H

H-72	RS485 communication broken responding mode	<b>LED“0” digit: RS485 communication broken responding mode</b> 0.Give alarm and free stop 1.No alarm and continue running 2.No alarm but stop <b>LED “00” digit: Communicaitaion write operation mode.</b> 0: Reply for write opertaion 1: Noreply for write operation <b>LED “000” digit:: Reserve</b> <b>LED “0000” digit: Reserve</b>	0001	●	348H
H-73	Respond relay	0.000~1.000s	0.005s	●	349H
H-74	Instantaneous stop decel. respond voltage lower limit	0%~200%	20%	●	34AH
H-75	Instantaneous stop decel. respond voltage upper limit	0%~200%	90%	●	34BH
H-76	Instantaneous stop decel. gain	0.01~10.00	2.00	●	34CH
H-77	Voltage recover stability time	0.0~100.0s	2.0s	●	34DH
H-78	Torque compensation upper limit	0.00~60.00%	50.00%		34EH
H-79	Output terminal external control status	0~9999	0	●	34FH
H-80	Reserve				350H

# Chapter 5: Fault Information and Troubleshooting

Keyboard display	Fault code	Fault type	Possible causes	Treatment
	L.U.1	Too low voltage while stop	<ul style="list-style-type: none"> <li>● Power supply is too low</li> <li>● Voltage detection circuit is abnormal</li> </ul>	<ul style="list-style-type: none"> <li>● Check input power,clear fault.</li> <li>● Seek support from factory.</li> </ul>
	E.LU2	Too low voltage in run	<ul style="list-style-type: none"> <li>● Power supply is too low</li> <li>● Power capacitance is too small, or there is big impact current in the power grid.</li> <li>● Inner DC main contactor is not connect well</li> </ul>	<ul style="list-style-type: none"> <li>● Check input power,clear fault.</li> <li>● Improve power supply.</li> <li>● Seek support from factory.</li> </ul>
	E.oU1	Accel. over-voltage	<ul style="list-style-type: none"> <li>● Power voltage fluctuation over limit.</li> <li>● Start when motor is running .</li> </ul>	<ul style="list-style-type: none"> <li>● Detect power voltage and clear fault.</li> <li>● Restart motor until it completely stop,Set F1.00 as 1or2.</li> </ul>
	E.oU2	Decel. over-voltage	<ul style="list-style-type: none"> <li>● Deceleration time is too short.</li> <li>● Load potential energy or inertia is too large.</li> <li>● Power voltage fluctuation over limit.</li> </ul>	<ul style="list-style-type: none"> <li>● Prolong Deceleration time.</li> <li>● Reduce load inertia or improve inverter capacitance or add braking unit.</li> <li>● Detect power voltage and clear fault.</li> </ul>
	E.oU3	Constant speedover-voltage	<ul style="list-style-type: none"> <li>● Power voltage fluctuation over limit.</li> </ul>	<ul style="list-style-type: none"> <li>● Detect power voltage and clear fault.</li> <li>● Install input reactor.</li> </ul>
	E.oC1	Accel. over-current	<ul style="list-style-type: none"> <li>● Acceleration time is too short.</li> <li>● Start running motor.</li> <li>● V/F curve setting is not suitable.Or torque boost too high.</li> <li>● Inverter capacitance is too small.</li> </ul>	<ul style="list-style-type: none"> <li>● Prolong acc time.</li> <li>● Restart motor until it totally stop,Set F1.00 as 1or2.</li> <li>● Reset V/F curve or torque boost value.</li> <li>● Select inverter with right capacitance.</li> </ul>
	E.oC2	Decel. over-current	<ul style="list-style-type: none"> <li>● Deceleration time is too short.</li> <li>● Load potential energy or inertia is too large.</li> <li>● Power voltage fluctuation over limit.</li> </ul>	<ul style="list-style-type: none"> <li>● Prolong Deceleration time.</li> <li>● Connect external braking resistance or braking unit.</li> <li>● Select inverter with right capacitance.</li> </ul>
	E.oC3	Constant speedover-current	<ul style="list-style-type: none"> <li>● Sudden load change.</li> <li>● Power grid voltage is too low.</li> </ul>	<ul style="list-style-type: none"> <li>● Check load change and clear it.</li> <li>● Check input power,clear fault.</li> </ul>
	E.oL1	Motor over-load	<ul style="list-style-type: none"> <li>● V/F curve setting is not suitable. Or torque boost too high.</li> <li>● Power grid voltage is too low.</li> </ul>	<ul style="list-style-type: none"> <li>● Reset V/F curve or torque boost value.</li> <li>● Check input power,clear fault.</li> </ul>

			<ul style="list-style-type: none"> <li>● incorrect overload protection setting.</li> <li>● Locked-rotor run or too heavy load.</li> <li>● Universal motor long time low speed run.</li> </ul>	<ul style="list-style-type: none"> <li>● Unreasonable F5.06 setting.</li> <li>● Adjust load or select inverter with right capacitance.</li> <li>● If need long time low speed run, please choose special motor for inverter.</li> </ul>
E.oL2	E.oL2	Inverter over-load	<ul style="list-style-type: none"> <li>● Load is too heavy.</li> <li>● Acceleration time is too short.</li> <li>● Start running motor.</li> <li>● V/F curve setting is not suitable. Or torque boost too high.</li> </ul>	<ul style="list-style-type: none"> <li>● Select inverter with right capacitance.</li> <li>● Prolong acceleration time</li> <li>● Restart motor until it totally stop. Set F1.00 as 1or2.</li> <li>● Reset V/F curve or torque boost value.</li> </ul>
E. SC	E. SC	System abnormality	<ul style="list-style-type: none"> <li>● Acceleration time is too short.</li> <li>● Short circuit between inverter output phases or earth.</li> <li>● Module is damaged.</li> <li>● Electromagnetic disturb.</li> </ul>	<ul style="list-style-type: none"> <li>● Prolong acceleration time.</li> <li>● Check periphery equipments and restart after fault cleared.</li> <li>● Seek support from factory.</li> <li>● Check system wiring, earth, shield and deal as required.</li> </ul>
E.oH	E.oH	Inverter over-heat	<ul style="list-style-type: none"> <li>● Temperature is too high.</li> <li>● Air channel is blocked.</li> <li>● Fan connection parts is loose.</li> <li>● Fan is damaged.</li> <li>● Temperature detection circuit fault</li> </ul>	<ul style="list-style-type: none"> <li>● Make the environment meeting the requirement.</li> <li>● Clear the air channel.</li> <li>● Check and re-connect the wire</li> <li>● Change the same new fan.</li> <li>● Seek support from factory.</li> </ul>
E.TE1	E.TE1	Motor static detection fault	<ul style="list-style-type: none"> <li>● Detection overtime</li> <li>● Perform static detection while motor is running.</li> <li>● Capacitance difference is too big between motor and inverter.</li> <li>● Motor parameter setting mistake.</li> </ul>	<ul style="list-style-type: none"> <li>● Check motor connection wire.</li> <li>● Detect after motor stop totally.</li> <li>● Change inverter model.</li> <li>● Reset parameter according to nameplate.</li> </ul>
E.TE2	E.TE2	Motor rotation detection fault	<ul style="list-style-type: none"> <li>● Detect while motor is running.</li> <li>● Detect with load.</li> <li>● Detection overtime</li> <li>● Capacitance difference is too big between motor and inverter.</li> <li>● Motor parameter setting mistake.</li> </ul>	<ul style="list-style-type: none"> <li>● Detect after motor stop totally.</li> <li>● Re-detect without load.</li> <li>● Check motor connection wire.</li> <li>● Change inverter model.</li> <li>● Reset parameter according to nameplate.</li> </ul>
93SE	93SE	Memory fault	<ul style="list-style-type: none"> <li>● Electromagnetic disturb in memory period.</li> <li>● EEPROM damage.</li> </ul>	<ul style="list-style-type: none"> <li>● re-input and save.</li> <li>● Seek support from factory.</li> </ul>
L.IFE	LIFE	Reserved		<ul style="list-style-type: none"> <li>● Seek support from factory.</li> </ul>

	ERR2	Output phase missing	<ul style="list-style-type: none"> <li>● 3 phase output of inverter missing connection with motor</li> </ul>	<ul style="list-style-type: none"> <li>● Check wire between inverter and motor, earth and motor insulation.</li> </ul>
	ERR3	Current detection fault	<ul style="list-style-type: none"> <li>● Detect circuit fault.</li> <li>● Phase imbalance</li> </ul>	<ul style="list-style-type: none"> <li>● Seek for technic support.</li> <li>● Check motor and wiring.</li> </ul>
	ERR4	Inverter external fault	<ul style="list-style-type: none"> <li>● Peripheral equipment fault protection.</li> </ul>	<ul style="list-style-type: none"> <li>● Check peripheral equipment.</li> </ul>
	ERR5	Swing frequency fault	<ul style="list-style-type: none"> <li>● User not set right swing frequency running parameter.</li> </ul>	<ul style="list-style-type: none"> <li>● Set parameter again.</li> </ul>
	ERR6	Keyboard connect fault	<ul style="list-style-type: none"> <li>● Keyboard wire fault.</li> <li>● Keyboard component damage.</li> </ul>	<ul style="list-style-type: none"> <li>● Check keyboard wire</li> <li>● Seek support from factory.</li> </ul>
	E.CPE	Parameter copy fault	<ul style="list-style-type: none"> <li>● Parameter copy communication is fault.</li> <li>● Copy keyboard is not match the inverter.</li> </ul>	<ul style="list-style-type: none"> <li>● Check wire.</li> <li>● Select the specified external keyboard model.</li> </ul>
	E.CE	RS485 communication fault	<ul style="list-style-type: none"> <li>● Paut rate not right.</li> <li>● Communication connection not right.</li> <li>● Communication format not right.</li> </ul>	<ul style="list-style-type: none"> <li>● Set right Paut rate</li> <li>● Check communication wiring</li> <li>● Check Communication format</li> </ul>
	SEn	Feedback sensor fault	<ul style="list-style-type: none"> <li>● Alarm while PID analog value feedback signal is small than [H-28].</li> <li>● PID feedback wire problem.</li> <li>● Feedback sensor problem.</li> <li>● Feedback input circuit problem.</li> </ul>	<ul style="list-style-type: none"> <li>● Confirm sensor state,change it if problem</li> <li>● Check wiring.</li> <li>● Adjust feedback channel signal</li> </ul>
	E.PAn	Keyboard connect fault	<ul style="list-style-type: none"> <li>● Keyboard wire fault.</li> <li>● Keyboard component damage.</li> </ul>	<ul style="list-style-type: none"> <li>● Check keyboard wire</li> <li>● Seek support from factory.</li> </ul>
	E.EF	Inverter external fault	<ul style="list-style-type: none"> <li>● Peripheral equipment fault protection.</li> </ul>	<ul style="list-style-type: none"> <li>● Check peripheral equipment.</li> </ul>
	E.PAn	Keyboard connect fault	<ul style="list-style-type: none"> <li>● Keyboard wire fault.</li> <li>● Keyboard component damage.</li> </ul>	<ul style="list-style-type: none"> <li>● Check keyboard wire</li> <li>● Seek support from factory.</li> </ul>