



Shihlin Electric General Inverters SL3 Series
Simple instruction

V1.01-05

Compact

SL3-021-0.4K ~ 2.2K
SL3-043-0.4K ~ 2.2K

Thank you for choosing Shihlin inverters SL3 series.

These instructions will explain the use and precautions of the product. Please read the instructions carefully before installation and use the inverter correctly and safely.

1) Safety Instructions

Safety Instructions	
✓	Please contact the professionals to install, operate, maintain and inspect the product
✓	The safety level could be classified as "Warning" and "Caution".
⚠	Warning: the incorrect operation may cause hazardous situation, and accordingly lead to death or serious injury.
⚠	Caution: the incorrect operation may cause hazardous situation, and accordingly lead to general or minor injury or damage of the object.

Warning	
✓	The front cover plate and the wiring board should not be opened when the inverter is powered on. In addition, the inverter should not be operated when the front cover plate and the wiring board are demounted. Otherwise, the electric shock may be caused due to contacting with the high-voltage terminal and the charging part.
✓	If the wiring needs to be changed or inspection is required, the power supply of the inverter should be turned off first. There is still high voltage inside the inverter before the LED display of the inverter is turned off. Therefore, please don't touch the internal circuit and parts.
✓	The inverter must be earthed correctly.
✓	Please don't operate with the wet hand, don't touch the heat sink, and don't plug and unplug the cable; or electric shock may be caused.
✓	Do not replace the cooling fan when the inverter is powered on, otherwise the risk may occur. It is dangerous to replace the cooling fan when the inverter is powered on.

Caution	
✓	Voltage applied to each terminal must be the one specified in the user manual; otherwise, failure or damage may be caused.
✓	Do not operate a voltage-resistant test for the parts inside the inverter because semiconductors in inverter may be easily damaged due to high-voltage breakdown.
✓	Do not touch the inverter because the temperature of the inverter is very high when it is powered on or right after disconnecting the power supply, only built-in keypad is touchable, otherwise, scalds may occur.
✓	Failure or damage may be caused due to wrong wiring.
✓	Do not reverse the polarities (+, -) by mistake, otherwise failure or damage may be caused.
✓	Please install the inverter on nonflammable walls without holes (to avoid contacting with the cooling fin of the inverter from the back). If the inverter is installed on or close to flammable objects it may cause a fire.
✓	Please disconnect the inverter from power supply in case of failure. Overload current passes through the inverter continuously may cause a fire.

2) Product Model

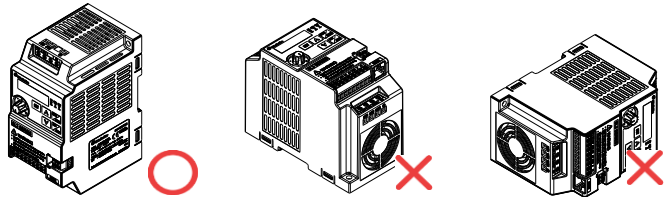
SL3-043-0.75K-xy			
Series category	Voltage level	Capacity	Others
SL3 series	-043 : three phase 440V -021 : single phase 220V	0.75kW	None : General model -xy : Customize or specialize or region difference

3) Installation Environment

Ambient temperature	-10 ~ +40°C (non-freezing)
Ambient humidity	Below 90%Rh (non-condensing).
Storage temperature	-20 ~ +65°C.
Surrounding environment	Indoor, no corrosive gas, no flammable gas, no flammable powder.
Altitude	Altitude below 2000 meters, when altitude is above 1,000 m, derate the rated current 2% per 100 m
Vibration	Below 5.9m/s² (0.6G).
Grade of protection	IP20
The degree of pollution	2

4) Installation and Wiring

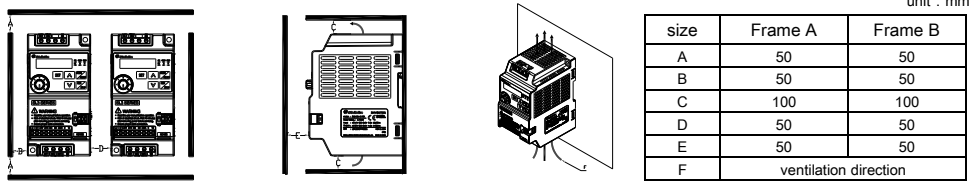
➤ Please install the inverter vertically in order not to reduce the heat dissipation effect:



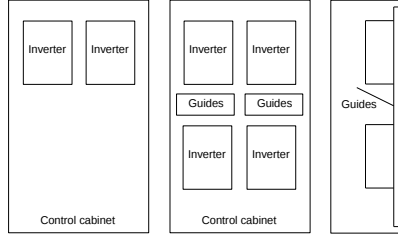
(a) Vertical arrangement (b) Horizontal arrangement (c) Level arrangement

➤ Please follow the installation restrictions shown below to ensure enough ventilation space for inverter cooling and wiring space:

• Single or side by side installation :

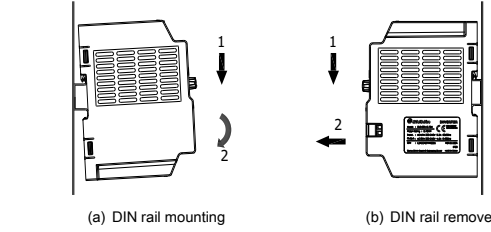


• Arrangement of multiple inverters :

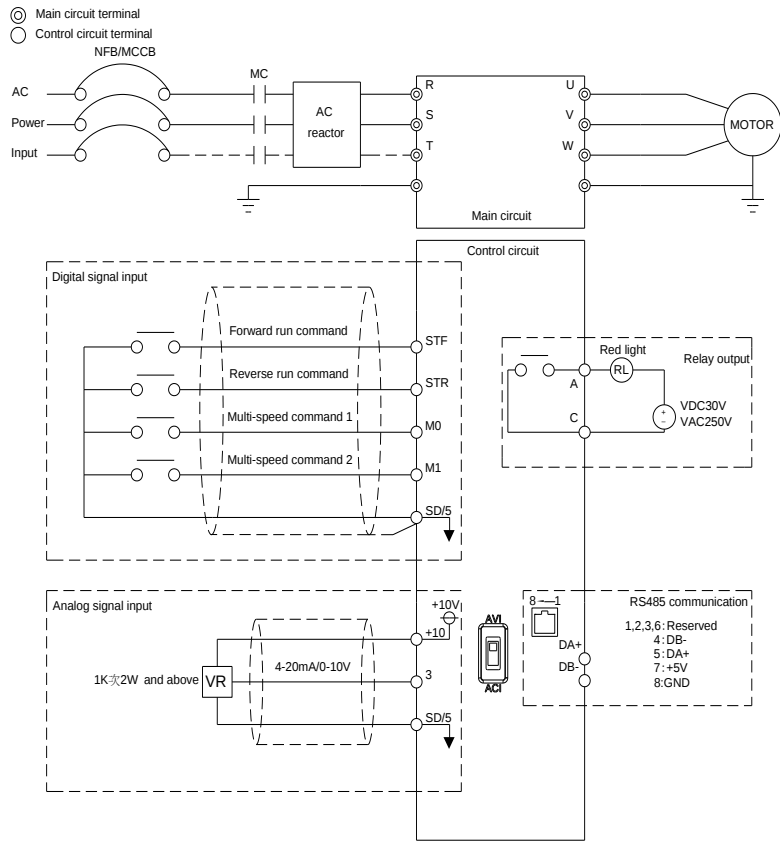


(a) Horizontal arrangement (b) Vertical arrangement

• Din rail installation :



5) Terminal Connection Diagrams

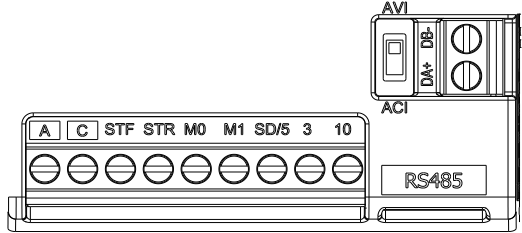


6) Main Circuit Wiring and Terminal Specification

Inverter model	Terminal screw specifications	Tightening torque(Kgf.cm)	Recommended wiring specification(mm²)			Recommended wiring specification (AWG)		
			R、S、T	U、V、W	Grounding Cable	R、S、T	U、V、W	Grounding Cable
SL3-021-0.4K	M2.5	2.5-3.5	2.5	2.5	2.5	14	14	14
SL3-021-0.75K			2.5	2.5	2.5	14	14	14
SL3-021-1.5K			2.5	2.5	2.5	14	14	14
SL3-021-2.2K	M3	4-6	4	4	4	12	12	12
SL3-043-0.4K			1.5	1.5	1.5	16	16	16
SL3-043-0.75K			2.5	2.5	2.5	14	14	14
SL3-043-1.5K			2.5	2.5	2.5	14	14	14
SL3-043-2.2K			2.5	2.5	2.5	14	14	14

7) Control Terminal

➤ Arrangement of control terminal



➤ Control terminal description

Terminal type	Terminal name	Function instructions	Terminal specifications
Switch signal input	STF	These four terminals are multifunction digital input	Input impedance: 2.4 kΩ Action current: 3mA(when 24VDC) Maximum frequency: 1kHz
	STR		
	M0		
	M1		
Analog signal input	10	+10.5±0.5V	Maximum current:10mA
	3	0~10V/4~20mA	Input impedance:10kΩ 0-10V for 235Ω 4-20mA)
Relay output	A	Multi-function relay output terminals. A-C is normally open contact, C is common terminal.	Maximum voltage:30VDC or 250VAC Maximum current: Resistor load 5A NO Inductance load 2A NO(cosΦ=0.4)
	C		
Communication terminal	RJ45	RS-485, optical coupling isolation RJ45 and "DA+/DB-" can't work at the same time	Bit rate: up to 38400bps Distance: up to 500m
	DA+		
	DB-		
Common terminal	SD/5	Common terminal for terminal STF、STR、M0、M1、3	---

Note1 : When connecting control terminal to external devices, please pay attention to the voltage and current specifications of terminals to avoid damaging the inverter.
Note2 : The function of the control terminal is decided by inverter parameters, please refer to Instruction Manual for setting.
Note3 : Please pay attention to polarity when connect to external power and devices.

➤ Wiring method

• Wire connection
For the control circuit wiring, strip off the sheath of a cable, and use it with a blade terminal. For a single wire, strip off the sheath of the wire and apply directly.
Insert the blade terminal or the single wire into a socket of the terminal.
(1) Strip off the sheath for the below length. If the length of the sheath peeled is too long, a short circuit may occur with neighboring wires. If the length is too short, wires might come off.
Wire the stripped cable after twisting it to prevent it from becoming loose. In addition, do not solder it.

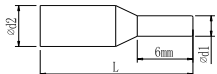


(2) Crimp the blade terminal.
Insert wires to a blade terminal, and check that the wires come out for about 0 to 0.5 mm from a sleeve.
Check the condition of the blade terminal after crimping. Do not use a blade terminal of which the crimping is inappropriate, or the face is damaged.



• Please do use blade terminals with insulation sleeve. Blade terminals commercially available:

Cable gauge (mm²)	Blade terminals model	L (mm)	d1 (mm)	d2 (mm)	Manufacturer	Tool type
0.3	AI 0.25-6 WH	10.5	0.8	2	Phoenix Contact Co., Ltd.	CRIMPFOX 6
0.5	AI 0.5-6 WH	12	1.1	2.5		
0.75	AI 0.75-6 GY	12	1.3	2.8		
0.75(for two wires)	AI-TWIN 2×0.75-6 GY	12	1.3	2.8		



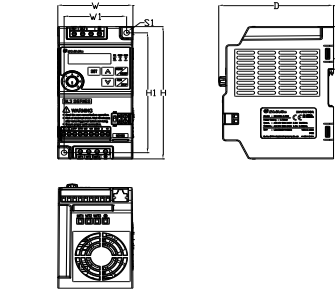
Note1: Please Use a small flathead screw driver (tip thickness: 0.6mm, width:3.0mm). If a flathead screwdriver with a narrow tip is used, terminal block maybe damaged.
Note2: Tightening torque is 2.12~3.18kgf.cm, too large tightening torque can cause crew slippage, too little tightening torque can cause a short circuit or malfunction.

➤ Wiring Precautions

- After wiring, wire offcuts must not be left in the inverter.
Wire offcuts can cause an alarm, failure or malfunction. Always keep the inverter clean. When drilling mounting holes in an enclosure etc., please make sure no metal scraps enter the inverter.
- To prevent a malfunction due to noise, keep the signal cables 10 cm (3.94 inches) or more away from the power cables, and keep it away from the input/output side.
- Set the voltage/current input switch correctly. Incorrect setting may cause a fault, failure or malfunction.

8) Appearance and Dimensions

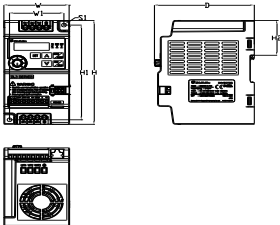
➤ Frame A



Model	W	W1	H	H1	H2	D	S1
SL3-021-0.4K	68	56	132	120	42.5	104	5
SL3-021-0.75K							(tighten torque
SL3-021-1.5K							20~25kgf.cm)

unit : mm

► Frame B



Model	W	W1	H	H1	H2	D	S1
SL3-021-2.2K	72	59.5	142	129.5	42.5	110	5
SL3-043-0.4K							(tighten torque
SL3-043-0.75K							20~25kgf.cm)
SL3-043-1.5K							
SL3-043-2.2K							

unit : mm

9) Optional Equipment

Category	Name	Description	Order code
Keypad	DU06	LED display	SNKDU06
	DU08S	LED display	SNKDU08S
	DU10	LED display	SNKDU10
	PU301	LED display	SNKPU301
	PU302	LED display	SNKPU302

10) Parameter group

► System Parameter Group 00

Group	No.	Name	Setting Range	Default	User Setting
00-00	P.90	Inverter model	Read only	---	
00-01	P.188	Firmware version	Read only	---	
00-02	P.996 ~ P.999	Parameter restoration	0: Off	0	
			1: Clear alarm history (P.996=1)		
			2: Reset inverter (P.997=1)		
			3: Restore all parameters to default (P.998=1)		
			4: Restore some parameters to default 1 (P.999=1)		
			5: Restore some parameters to default 2 (P.999=2)		
00-03	P.77	Selection of parameters write protection	0: Parameters can be written only when the motor stops.	0	
			1: Parameters cannot be written.		
			2: Parameters can also be written when the motor is running.		
			3: Parameters cannot be read when in password protection.		
			0~65535		
			2~65535		
00-04	P.294	Password parameter	0~65535	0	
			2~65535		
			0: When inverter starts, built-in keypad enters monitor mode automatically, screen displays output frequency (with slip compensation).		
			1: When inverter starts, built-in keypad displays target frequency.		
			2: When inverter starts, built-in keypad enters monitor mode automatically, screen displays steady state output frequency		
			3: When inverter starts, built-in keypad enters monitor mode automatically, screen displays current pressure and feedback pressure of the constant pressure system in percentage		
00-05	P.110	Built-in keypad monitor selection	4: When inverter starts, built-in keypad doesn't enter monitor mode but enter the previous mode before power off	2	
			5: When inverter starts, built-in keypad enters monitor mode automatically, screen displays current pressure and feedback pressure of the constant pressure system		
			0: Output AC voltage (V)		
			1: DC bus voltage. (V)		
			2: Inverter temperature rising accumulation rate (%)		
			3: Target pressure of the constant pressure system (%)		
00-07	P.161	Multi-function display	4: Feedback pressure of the constant pressure system (%)	0	
			5: Running frequency (Hz)		
			6: Electronic thermal accumulation rate (%)		
			7: Reserved		
			8: Signal value (mA) of 3-5 input terminals (mAV).		
			9: Output power (kW).		
			10: Reserved		
			11: Forward reverse rotation signal. 1: forward rotation 2: reverse rotation 0: stop.		
			12: NTC temperature (°C)		

Group	No.	Name	Setting Range	Default	User Setting
00-07	P.161	Multi-function display	13: Motor electronic thermal accumulation rate (%)	0	
			14~18: Reserved		
			19: Digital terminal input state		
			20: Digital terminal output state		
			21: Actual working carrier frequency		
00-08	P.37	Speed display	0: Display output frequency(not mechanical speed)	0	
			0.1~5000.0		
			1~50000		
00-09	P.259	Speed display unit selection	X0: Speed display unit is 1	1	
			X1: Speed display unit is 0.1		
00-10	P.59	Keypad frequency setting selection	XXX0: Use up down button on built-in or external keypad to set frequency	0	
			XXX1: Use keypad knob on external keypad to set frequency		
			XXX2: Use keypad knob on built-in keypad to set frequency		
			X0XX: Frequency set by the up down button on built-in keypad will be automatically stored within 30s		
			X1XX: Frequency set by the up down button on built-in keypad will be automatically stored within 10s		
			X2XX: Frequency set by the up down button on built-in keypad will not be automatically stored		
			0XXX: Set frequency will work immediately when use up down button on built-in keypad		
			1XXX: Set frequency will work after pressing SET when use up down button on built-in keypad		
			1~15kHz		
			0: Off		
00-11	P.72	Carrier frequency	1: When 00-11(P.72)<5, Soft-PWM is on(only apply to V/F control)	5 kHz	
			2: When 00-11(P.72) > 9, if the IGBT temperature is high, carrier frequency will decrease automatically, when temperature go back to normal, carrier frequency go back to 00-11(P.72) value		
00-12	P.31	Soft-PWM carrier function selection	0: Off	0	
			1: When 00-11(P.72)<5, Soft-PWM is on(only apply to V/F control)		
00-13	P.71	Idling brake / DC brake	2: When 00-11(P.72) > 9, if the IGBT temperature is high, carrier frequency will decrease automatically, when temperature go back to normal, carrier frequency go back to 00-11(P.72) value	1	
			0: Idling brake		
00-14	P.75	Stop function selection	1: DC brake	1	
			0: Press STOP button and inverter stop running in PU and H2 mode		
00-15	P.78	Prevent forward/reverse rotation selection	1: Press STOP button and inverter stop running in all mode.	0	
			0: Forward/reverse rotation are both permitted		
00-16	P.79	Operation mode selection	1: Prevent reverse rotation (Giving reverse signal decelerates and stops the motor).	0	
			2: Prevent forward rotation (Giving forward signal decelerates and stops the motor).		
			0: "PU mode", "external mode" and "Jog mode" are interchangeable.		
			1: "PU mode" and "JOG mode" are interchangeable.		
			2: "External mode" only		
			3: "Communication mode" only		
			4: "Combined mode 1"		
			5: "Combined mode 2"		
00-17	P.97	Second target frequency selection	6: "Combined mode 3"	0	
			7: "Combined mode 4"		
00-19	P.35	Communication mode selection	8: "Combined mode 5"	0	
			0: Frequency set by built-in keypad		
00-21	P.300	Motor control mode selection	1: Frequency set by RS485 communication	0	
			2: Frequency set by analog input		
00-24	P.189	50Hz/60Hz switch selection	0: In communication mode, run signal and frequency is given by communication.	0	
			1: In communication mode, run signal and frequency is given by external signal.		
00-25	P.990	Parameter display mode setting	0: Induction motor V/F control	0	
			1. Reserved		
00-26	P.189	50Hz/60Hz switch selection	2. Reserved	0	
			0: Frequency related parameter default value is 60Hz.		
00-27	P.189	50Hz/60Hz switch selection	1: Frequency related parameter default value is 50Hz.	1	
			0: Parameter is displayed in "group mode"		
00-28	P.990	Parameter display mode setting	1: Parameter is displayed in "P parameter mode"	0	

► Basic Parameter Group 01

Group	No.	Name	Setting Range	Default	User Setting
01-00	P.1	Maximum frequency	0.00 ~ 01-02 (P.18) Hz	120.00Hz	
01-01	P.2	Minimum frequency	0 ~ 120.00Hz	0.00Hz	
01-02	P.18	High-speed maximum frequency	01-00 (P.1) ~ 599.00Hz	120.00Hz	
01-03	P.3	Base frequency	50Hz system setting: 0 ~ 599.00Hz	50.00Hz	
			60Hz system setting: 0 ~ 599.00Hz	60.00Hz	
01-04	P.19	Base voltage	0 ~ 1000.0V	99999	
			99999: Change according to the input voltage	99999	
01-05	P.29	Acceleration/deceleration curve selection	0: Linear acceleration /deceleration curve	0	
			1: S shape acceleration /deceleration curve 1		
			2: S shape acceleration /deceleration curve 2		
01-06	P.7	Acceleration time	3: S shape acceleration /deceleration curve 3	5.00s	
01-07	P.8	Deceleration time	0 ~ 360.00s/0 ~ 3600.0s	5.00s	
01-08	P.21	Acceleration/deceleration time increments	0: Time increment is 0.01s	0	
			1: Time increment is 0.1s		
01-09	P.20	Acceleration/deceleration reference frequency	50Hz system setting: 1.00 ~ 599.00Hz	50.00Hz	
			60Hz system setting: 1.00 ~ 599.00Hz	60.00Hz	
01-10	P.0	Torque boost	0 ~ 30.0% : 0.75K and under	6.0%	
			0 ~ 30.0% : 1.5K ~ 2.2K	4.0%	
01-11	P.13	Starting frequency	0 ~ 60.00Hz	0.5Hz	

Group	No.	Name	Setting Range	Default	User Setting
01-12	P.14	Load pattern selection	0: For constant torque loads (conveyor belt, etc.)	0	
			1: For variable torque loads (fans and pumps, etc.)		
			2, 3: For Lifting loads		
			4: Multipoint V/F curve		
			5~13: Special two-point V/F curve		
01-13	P.15	JOG frequency	0 ~ 599.00Hz	5.00Hz	
01-14	P.16	JOG Acc/ Dec time	0 ~ 360.00s/0 ~ 3600.0s	0.50s	
01-15	P.28	Output frequency filter time	0 ~ 31	0	
01-16	P.91	Frequency jump 1A	0 ~ 599.00Hz	99999	
			99999: Off		
01-17	P.92	Frequency jump 1B	0 ~ 599.00Hz	99999	
			99999: Off		
01-18	P.93	Frequency jump 2A	0 ~ 599.00Hz	99999	
			99999: Off		
01-19	P.94	Frequency jump 2B	0 ~ 599.00Hz	99999	
			99999: Off		
01-20	P.95	Frequency jump 3A	0 ~ 599.00Hz	99999	
			99999: Off		
01-21	P.96	Frequency jump 3B	0 ~ 599.00Hz	99999	
			99999: Off		
01-22	P.44	Second acceleration time	0 ~ 360.00s/0 ~ 3600.0s	99999	
			99999: Off		
01-23	P.45	Second deceleration time	0 ~ 360.00s/0 ~ 3600.0s	99999	
			99999: Off		
01-24	P.46	Second torque boost	0 ~ 30.0%	99999	
			99999: Off		
01-25	P.47	Second base frequency	0 ~ 599.00Hz	99999	
			99999: Off		
01-26	P.98	Middle frequency 1	0 ~ 599.00Hz	3.00Hz	
01-27	P.99	Output voltage 1 of middle frequency	0 ~ 100.0%	10.0%	
01-28	P.162	Middle frequency 2	0 ~ 599.00Hz	99999	
			99999: Off		
01-29	P.163	Output voltage 2 of middle frequency	0 ~ 100.0%	0.0%	
01-30	P.164	Middle frequency 3	0 ~ 599.00Hz	99999	
			99999: Off		
01-31	P.165	Output voltage 3 of middle frequency	0 ~ 100.0%	0.0%	
01-32	P.166	Middle frequency 4	0 ~ 599.00Hz	99999	
			99999: Off		
01-33	P.167	Output voltage 4 of middle frequency	0 ~ 100.0%	0.0%	
01-34	P.168	Middle frequency 5	0 ~ 599.00Hz	99999	
			99999: Off		
01-35	P.169	Output voltage 5 of middle frequency	0 ~ 100.0%	0.0%	
01-36	P.255	S curve time at the beginning of acceleration	0 ~ 25.00s/0 ~ 250.0s	0.20s	
01-37	P.256	S curve time at the end of acceleration	0 ~ 25.00s/0 ~ 250.0s	99999	
			99999: Off		
01-38	P.257	S curve time at the beginning of deceleration	0 ~ 25.00s/0 ~ 250.0s	99999	
			99999: Off		
01-39	P.258	S curve time at the end of deceleration	0 ~ 25.00s/0 ~ 250.0s	99999	
			99999: Off		
01-40	P.219	Remote function acc/dec time selection	0 : Use default acc/dec time (same as regular mode)	0	
			1 : Use second acc/dec time		

Group	No.	Name	Setting Range	Default	User Setting
02-61	P.141	Polarity of percentage corresponds to terminal 3-5 current/ voltage signal	0~11	0	
02-62	P.76	Keypad knob on inverter minimum value	0~599.00Hz	0.00Hz	
02-63	P.204	PWM signal duty cycle	0: automatically detects the period of input PWM pulse 1~1000ms: set the PWM duty cycle value input into terminal STF	0	

➤ Digital Input/ Output Parameter Group 03

Group	No.	Name	Setting Range	Default	User Setting
03-00	P.83	Terminal STF input function	0: STF(Inverter runs forward)	0	
			1: STR(Inverter runs reverse)		
			2: RL(Multi-speed low speed)		
			3: RM(Multi-speed medium speed)		
			4: RH(Multi-speed high speed)		
			5: Reserved		
			6: External thermal relay actuate		
			7: MRS(Stops inverter output immediately)		
			8: RT(Inverter second function)		
			9: EXT(External JOG)		
			10 : STF+EXJ		
			11 : STR+EXJ		
			12 : STF+RT		
			13 : STR+RT		
			14 : STF+RL		
			15 : STR+RL		
			16 : STF+RM		
			17 : STR+RM		
			18 : STF+RH		
			19 : STR+RH		
			20 : STF+RL+RM		
			21 : STR+RL+RM		
			22 : STF+RT+RL		
			23 : STR+RT+RL		
			24 : STF+RT+RM		
			25 : STR+RT+RM		
			26 : STF+RT+RL+RM		
			27 : STR+RT+RL+RM		
			28: RUN(Inverter runs forward)	0	
			29: STF/STR(use with RUN signal, when ON, motor runs reverse ; when OFF, motor runs forward)		
			30: RES(External reset function)		
			31: STOP(Use as three line control with RUN signal and STF-STR signal)		
			32: REX(Extend multi-speed to 16 levels)		
			33: PO(In "external mode", run programmed operation)		
			34: RES_E (External reset, valid only when alarm.)		
			35: MPO (In "external mode" run manual cycle operation.)		
			36: TRI(Triangle wave function)		
			37 : Reserved		
			38 : Reserved		
			39: STF/STR +STOP (Use with RUN signal, when ON, motor runs reverse, when OFF, motor stops then runs forward.)		
			40: P_MRS (Stops inverter output immediately by pulse signal input)		
			41: PWM set frequency (Only valid with terminal STF and parameter 03-00(P.83))		
			42 : Reserved		
			43: RUN_EN (Enable digital input terminal operation)		
			44: PID_OFF (Enable digital input terminal turning off PID)		
			45: Second frequency command source mode		
03-01	P.84	Terminal STR input function	Same as 03-00	1	
03-03	P.80	Terminal M0 input function	Same as 03-00	2	
03-04	P.81	Terminal M1 input function	Same as 03-00	3	
03-11	P.85	Terminal A-C output function	0: RUN(Output when inverter running)	5	
			1: SU(Output when reach target frequency)		
			2: FU(Output when reach 03-21 03-22 value)		
			3: OL(Output when overload)		
			4: OMD(Output when output current is zero)		
			5: ALARM(Output when alarm)		
			6: PO1(Output when in program operation step)		
			7: PO2(Output when in program operation cycle)		
			8: PO3(Output when in program operation pause)		
			9~10 : Reserved		
			11 : OMD1(Output when output current is zero 1)		
			12 : OL2(Output when over torque)		
			13~16 : Reserved		
			17: RY(Output when inverter is powered on and no alarm)		
			18: Output when it's time for maintenance		
			19-40: Reserved		
03-14	P.87	Digital input logic	0~15	0	
03-15	P.88	Digital output logic	0 : Terminal A-C output positive logic 2 : Terminal A-C output negative logic	0	
03-16	P.120	Output signal delay time	0~3600.0s	0.0s	
03-17	P.157	Digital input terminal filter time	0~2000	4	
03-18	P.158	Digital input terminal enable when power on	0: When power on digital terminals work directly 1: When power on digital terminals work after switch off then on	0	
03-20	P.41	Output frequency detection sensitivity	0~100.0%	10.0%	
03-21	P.42	Output frequency detection for forward rotation	0~599.00Hz	6.00Hz	

Group	No.	Name	Setting Range	Default	User Setting
03-22	P.43	Output frequency detection for reverse rotation	0~599.00Hz 99999: Same as the setting of 03-21(P.42)	99999	
03-23	P.62	Zero current detection level	0~200.0% 99999: Off	5.0%	
03-24	P.63	Zero current detection time	0.05~100.00s 99999: Off	0.50s	

➤ Multi-speed Parameter Group 04

Group	No.	Name	Setting Range	Default	User Setting
04-00	P.4	Speed 1 (high speed)	0~599.00Hz	60.00Hz	
04-01	P.5	Speed 2 (medium speed)	0~599.00Hz	30.00Hz	
04-02	P.6	Speed 3 (low speed)	0~599.00Hz	10.00Hz	
04-03	P.24	Speed 4	0~599.00Hz	99999	
			99999: Off		
04-04	P.25	Speed 5	Same as 04-03	99999	
04-05	P.26	Speed 6	Same as 04-03	99999	
04-06	P.27	Speed 7	Same as 04-03	99999	
04-07	P.142	Speed 8	0~599.00Hz	0.00Hz	
04-08	P.143	Speed 9	Same as 04-03	99999	
04-09	P.144	Speed 10	Same as 04-03	99999	
04-10	P.145	Speed 11	Same as 04-03	99999	
04-11	P.146	Speed 12	Same as 04-03	99999	
04-12	P.147	Speed 13	Same as 04-03	99999	
04-13	P.148	Speed 14	Same as 04-03	99999	
04-14	P.149	Speed 15	Same as 04-03	99999	
04-15	P.100	Programmed operation minute / second selection	0: Select minute as the time increment.	1	
			1: Select second as the time increment.		
04-16	P.121	Run direction in each section	0~255	0	
04-17	P.122	Programmed operation cycle selection	0:Off	0	
			1~8: Start cycle from the set section.		
04-18	P.123	Programmed operation acceleration / deceleration time setting selection	0: Acceleration time is 01-06(P.7), deceleration time is 01-07(P.8).	0	
			1: Acceleration and deceleration time is set by 04-35(P.111)~04-42(P.118).		
04-19	P.131	Programmed operation mode speed 1	0~599.00Hz	0.00Hz	
04-20	P.132	Programmed operation mode speed 2	0~599.00Hz	0.00Hz	
04-21	P.133	Programmed operation mode speed 3	0~599.00Hz	0.00Hz	
04-22	P.134	Programmed operation mode speed 4	0~599.00Hz	0.00Hz	
04-23	P.135	Programmed operation mode speed 5	0~599.00Hz	0.00Hz	
04-24	P.136	Programmed operation mode speed 6	0~599.00Hz	0.00Hz	
04-25	P.137	Programmed operation mode speed 7	0~599.00Hz	0.00Hz	
04-26	P.138	Programmed operation mode speed 8	0~599.00Hz	0.00Hz	
04-27	P.101	Programmed operation mode speed 1 operating time	0~6000.0s	0.0s	
04-28	P.102	Programmed operation mode speed 2 operating time	0~6000.0s	0.0s	
04-29	P.103	Programmed operation mode speed 3 operating time	0~6000.0s	0.0s	
04-30	P.104	Programmed operation mode speed 4 operating time	0~6000.0s	0.0s	
04-31	P.105	Programmed operation mode speed 5 operating time	0~6000.0s	0.0s	
04-32	P.106	Programmed operation mode speed 6 operating time	0~6000.0s	0.0s	
04-33	P.107	Programmed operation mode speed 7 operating time	0~6000.0s	0.0s	
04-34	P.108	Programmed operation mode speed 8 operating time	0~6000.0s	0.0s	
04-35	P.111	Programmed operation mode speed 1 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-36	P.112	Programmed operation mode speed 2 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-37	P.113	Programmed operation mode speed 3 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-38	P.114	Programmed operation mode speed 4 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-39	P.115	Programmed operation mode speed 5 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-40	P.116	Programmed operation mode speed 6 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-41	P.117	Programmed operation mode speed 7 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	
04-42	P.118	Programmed operation mode speed 8 Acc/Dec time	0~600.00s/0~6000.0s	0.00s	

➤ Motor Parameter Group 05

Group	No.	Name	Setting Range	Default	User Setting
05-01	P.302	Motor rated power	0~160.00kW	0.00kW	
05-02	P.303	Motor poles	0~48	4	
05-03	P.304	Motor rated voltage	0~510V	380V/ 440V	
				220V	
05-04	P.305	Motor rated frequency	50Hz system : 0~599.00Hz	50.00Hz	
			60Hz system : 0~599.00Hz	60.00Hz	
05-05	P.306	Motor rated current	0~500.0A	According to kw	

Group	No.	Name	Setting Range	Default	User Setting
05-06	P.307	Motor rated rotation speed	50Hz system:0~9998r/min	1410r/min	
			60Hz system: 0~9998r/min	1710r/min	
05-07	P.308	Motor excitation current	0~500.0A	According to kw	
05-08	P.309	IM motor stator resistance	0~99.98Ω	According to kw	

➤ Protection Parameter Group 06

Group	No.	Name	Setting Range	Default	User Setting
06-00	P.9	Electronic thermal relay capacity	0~500.00A	0.0	
06-01	P.22	Stall prevention operation level	0~200.0%	150.0%	
06-02	P.23	Stall prevention operation level correction factor	0~200.0%	99999	
			99999: Stall prevention operation level is the setting value of 06-01(P.22).		
06-03	P.66	Stall prevention operation reduction starting frequency	50Hz system: 0~599.00Hz	50.00Hz	
06-08	P.155	Over torque detection level	60Hz system: 0~599.00Hz	60.00Hz	
			0~200.0%	0.0%	
06-09	P.156	Over torque detection time	0~60.0s	1.0s	
06-10	P.260	Action when detect over torque	0: OL2 alarm will not be reported after over torque detection, and inverter keeps running.	1	
			1: OL2 alarm will be reported after over torque detection, and inverter stops.		
06-13	P.281	Input phase loss protection	0: Off	0	
			1: When input phase loss, built-in keypad shows IPF alarm and inverter stops		
06-17	P.261	Maintenance alarm function	0: Off	0	
			1~9998day: Used to set the time for maintenance alarm output signal		
06-18	P.280	Short circuit protection function	X0: Turn off short circuit to ground detect when inverter start	10	
			X1: Short circuit to ground detect when inverter start		
			0X: Turn off output short circuit, 1X: When output short circuit, built-in keypad shows SCP alarm and inverter stops		
06-27	P.292	Total inverter operation time (minutes)	0~1439 min	0min	
06-28	P.293	Total inverter operation time (days)	0~9999 day	0day	
06-29	P.296	Total inverter power on time (minutes)	0~1439min	0min	
06-30	P.297	Total inverter power on time (days)	0~9999day	0day	
06-40	P.288	Alarm record code query	Choose 0~12 recorded alarm	0	
06-41	P.289	Alarm record code display	Read only	Read only	
06-42	P.290	Alarm record message query	Choose 0~10 recorded alarm	0	
06-43	P.291	Alarm record message display	Read only	Read only	

➤ Communication Parameter Group 07

Group	No.	Name	Setting Range	Default	User Setting
07-00	P.33	Communication protocol selection	0: Modbus protocol 1: Shihlin protocol	1	
07-01	P.36	Inverter communication station number	0 ~ 254	0	
07-02	P.32	Serial communication baud rate	0: Baud rate:4800bps 1: Baud rate:9600bps 2: Baud rate:19200bps 3: Baud rate:38400bps	1	
07-03	P.48	Data length	0 : 8bit 1 : 7bit	0	
07-04	P.49	Stop bit length	0 : 1bit 1 : 2bit	0	
07-05	P.50	Parity check selection	0: No parity check 1: Odd 2: Even	0	
07-06	P.51	CR/LF selection	1: CR only 2: Both CR and LF	1	
07-07	P.154	Modbus communication format	0: 1, 7, N, 2 (Modbus, ASCII) 1: 1, 7, E, 1 (Modbus, ASCII) 2: 1, 7, O, 1 (Modbus, ASCII) 3: 1, 8, N, 2 (Modbus, RTU) 4: 1, 8, E, 1 (Modbus, RTU) 5: 1, 8, O, 1 (Modbus, RTU) 6: 1, 8, N, 1 (Modbus, RTU)	4	
07-08	P.52	Number of communication retries	0 ~ 10	1	
07-09	P.53	Communication interval allowed time	0~999.8s: Checking communication timeout with the set value 99999: No timeout check	99999	
07-10	P.153	Communication alarm action	0: Alarm and stop freely 1: No alarm and continuing to operation	1	
07-11	P.34	EEPROM write-in selection	0: When writing parameters in communication mode, write in RAM and EEPROM 1: When writing parameters through communication, only write into RAM	0	

PID Parameter Group 08					
Group	No.	Name	Setting Range	Default	User Setting
08-00	P.170	PID function selection	0: Off	0	
			2 : Parameter 08-03(P.225) as target value, terminal 3-5 current/voltage input as feedback source		
08-01	P.171	PID feedback control method	0: Negative feedback control. 1: Positive feedback control.	0	
08-03	P.225	PID target value from keypad	0 ~ 08-43 (P.251)	20.0%	
08-04	P.172	Proportional gain	1~100	20	
08-05	P.173	Integral time	0 ~ 100.0s	1.0s	
08-06	P.174	Differential time	0 ~ 10000ms	0ms	
08-07	P.175	Abnormal deviation	0~200.0%	0.0%	
08-08	P.176	Abnormal duration time	0 ~ 600.0s	30.0s	
08-09	P.177	Abnormal processing mode	0: Stop freely	0	
			1: Slow down to stop		
			2: Alarm and continue operation		
08-10	P.178	Sleep detection deviation	0 ~ 100.0%	0.0%	
08-11	P.179	Sleep detection duration time	0 ~ 255.0s	1.0s	
08-12	P.180	Wake-up level	0~200.0%	90.0%	
08-13	P.181	Stop level	0 ~ 120.00Hz	40.00Hz	
08-14	P.182	Upper integral limit	50Hz system:0 ~ 120.00Hz	50.00Hz	
			60Hz system:0 ~ 120.00Hz	60.00Hz	
08-15	P.183	Deceleration step length when stable	0 ~ 10.00Hz	0.50Hz	
08-18	P.223	Analog feedback signal bias	0 ~ 100.0%	0.0%	
08-19	P.224	Analog feedback signal gain	0 ~ 100.0%	100.0%	
08-43	P.251	PID pressure unit (Bar) setting	1.0~100.0	100.0	
08-45	P.253	Analog signal feedback loss detection time	0 ~ 600.0	0.0	
08-46	P.254	Analog signal feedback loss action selection	0 : Alarm AErr and inverter stop freely	0	
			1 : Slow down to stop then alarm AErr		
			2 : Alarm AErr and continue operation		

Application Parameter Group 10					
Group	No.	Name	Setting Range	Default	User Setting
10-00	P.10	DC brake operating frequency	0 ~ 120.00Hz	3.00Hz	
10-01	P.11	DC brake operating time	0 ~ 60.0s	0.5s	
10-02	P.12	DC brake operating voltage	0 ~ 30.0%	4.0%	
10-03	P.151	Zero-speed control function selection	0: Off. 1: DC voltage braking	0	
10-04	P.152	Voltage at zero-speed control	0 ~ 30.0%	5.0%	
10-05	P.242	DC brake before inverter start	0: Off 1: Before starting operate DC brake first.	0	
10-06	P.243	DC brake time before inverter start	0 ~ 60.0s	0.5s	
10-07	P.244	DC brake voltage before inverter start	0 ~ 30.0%	4.0%	
10-08	P.150	Restart mode selection	X0 : No frequency search. X1 : Reserved X2 : Decrease voltage mode 0X : Power on once. 1X : Start each time. 2X : Only instantaneous stop and restart	0	
10-09	P.57	Restart idling time	0 ~ 30.0s 99999: Off.	99999	
10-10	P.58	Restart rising time	0 ~ 60.0s : 10.0s	10.0s	
10-11	P.61	Remote control function	0: Off X1 : Remote control function, frequency save in memory X2 : Remote control function, frequency won't save X3 : Remote control function, frequency won't save, clear frequency setting every time STF/STR "turn off". X4: Remote control function, frequency save in memory every 5s 1X:Frequency command range 01-01(P.2)~01-00(P.1), frequency command value from RH,RM setting	0	
10-12	P.65	Auto reset function	0: Off. 1: When over-voltage, inverter will reset. 2: When over-current, inverter will reset. 3: When either over-voltage or over-current, inverter will reset. 4: When any alarm occurs, inverter will reset.	0	
10-13	P.67	Auto reset times	0: Off. 1 ~ 10: If the alarm exceeds 10-13(P.67) times, inverter will not reset.	0	
10-14	P.68	Auto reset waiting time	0 ~ 360.0s	6.0s	
10-15	P.69	Auto reset times count	Read only	0	
10-16	P.119	Forward and reverse rotation dead time	0 ~ 3000.0s	0.0s	
10-17	P.159	Energy-saving control function	0: Off. 1: Energy-saving mode.	0	
10-18	P.229	Dwell function selection	0: Off. 1: Backlash compensation function. 2: Acceleration and deceleration interrupt waiting function.	0	
10-19	P.230	Dwell frequency at acceleration	0 ~ 599.00Hz	1.00Hz	
10-20	P.231	Dwell time at acceleration	0 ~ 360.0s	0.5s	
10-21	P.232	Dwell frequency at deceleration	0 ~ 599.00Hz	1.00Hz	
10-22	P.233	Dwell time at deceleration	0 ~ 360.0s	0.5s	
10-23	P.234	Triangular wave function selection	0: Off. 1: If terminal function TRI is triggered, triangular wave function will on. 2: Triangular wave function is on at all time.	0	
10-24	P.235	Maximum amplitude	0 ~ 25.0%	10.0%	
10-25	P.236	Amplitude compensation at deceleration	0 ~ 50.0%	10.0%	
10-26	P.237	Amplitude compensation at acceleration	0 ~ 50.0%	10.0%	
10-27	P.238	Amplitude acceleration time	0 ~ 360.00s/0 ~ 3600.0s	10.00s	
10-28	P.239	Amplitude deceleration time	0 ~ 360.00s/0 ~ 3600.0s	10.00s	
10-46	P.268	Voltage stall level	220V : 155 ~ 400V	380V	
			440V : 310 ~ 800V	760V	

Group	No.	Name	Setting Range	Default	User Setting
10-55	P.226	Reciprocating machine function selection	0 : Off 1 : Turn on reciprocating machine function	0	
10-56	P.227	Reciprocating forward limit time	0~3600.0s	0.0s	
10-57	P.228	Reciprocating reverse limit time	0~3600.0s	0.0s	

Special Adjustment Parameter Group 13					
Group	No.	Name	Setting Range	Default	User Setting
13-00	P.89	Slip compensation coefficient	0 ~ 10	0	
13-01	P.246	Modulation coefficient	0.00 ~ 1.20	0.50	
13-03	P.286	High frequency vibration suppression factor	0 ~ 15	0	
13-04	P.283	Current detect method	0 ~ 2	2	

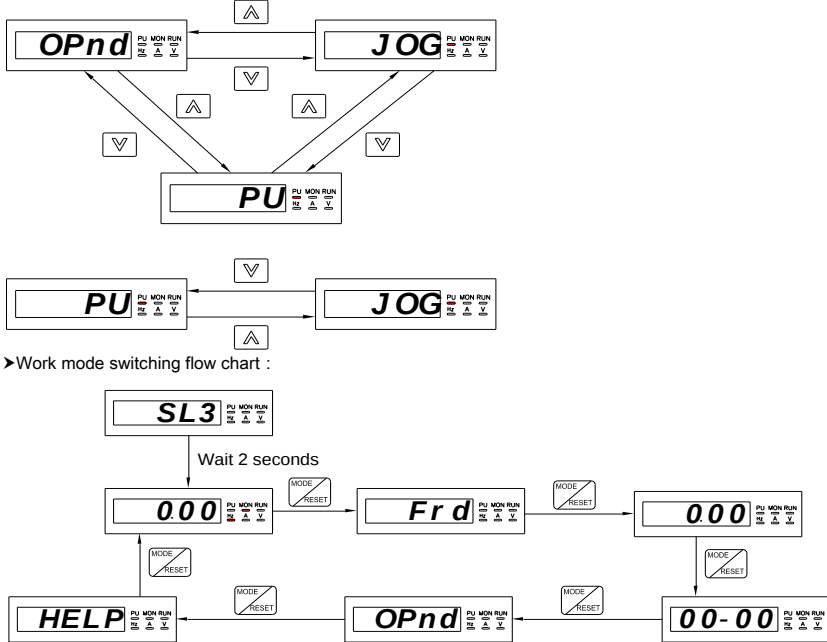
User Parameter Group 15					
Group	No.	Name	Setting Range	Default	User Setting
15-00	P.900	User registered parameter 1	P parameter mode: 0 ~ 399 Parameter group mode: 00-00~13-99	99999	
15-01	P.901	User registered parameter 2		99999	
15-02	P.902	User registered parameter 3		99999	
15-03	P.903	User registered parameter 4		99999	
15-04	P.904	User registered parameter 5		99999	
15-05	P.905	User registered parameter 6		99999	
15-06	P.906	User registered parameter 7		99999	
15-07	P.907	User registered parameter 8		99999	
15-08	P.908	User registered parameter 9		99999	
15-09	P.909	User registered parameter 10		99999	
15-10	P.910	User registered parameter 11		99999	
15-11	P.911	User registered parameter 12		99999	
15-12	P.912	User registered parameter 13		99999	
15-13	P.913	User registered parameter 14		99999	
15-14	P.914	User registered parameter 15		99999	
15-15	P.915	User registered parameter 16		99999	
15-16	P.916	User registered parameter 17		99999	
15-17	P.917	User registered parameter 18		99999	
15-18	P.918	User registered parameter 19		99999	
15-19	P.919	User registered parameter 20		99999	

11) Switching Parameter Mode

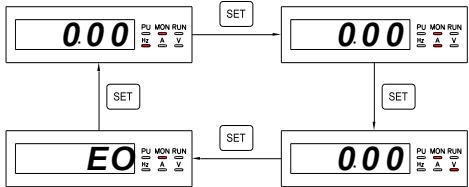
- SL3 series classify parameters according to functions, and default displayed as "Group Mode" ;
- If users prefer to display as "P.xxx" mode, please set parameter 00-25 as "1", and parameters will be displayed as "Traditional P Mode".

12) Parameter Setting Flow chart

➤ Operation mode switching flow chart :



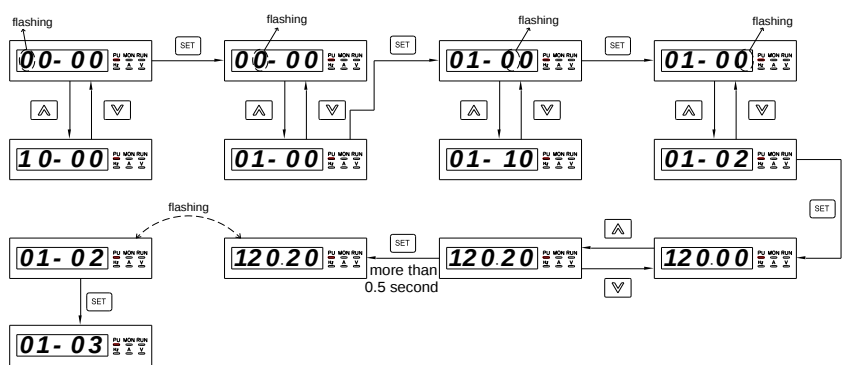
➤Monitor mode switching flow chart :



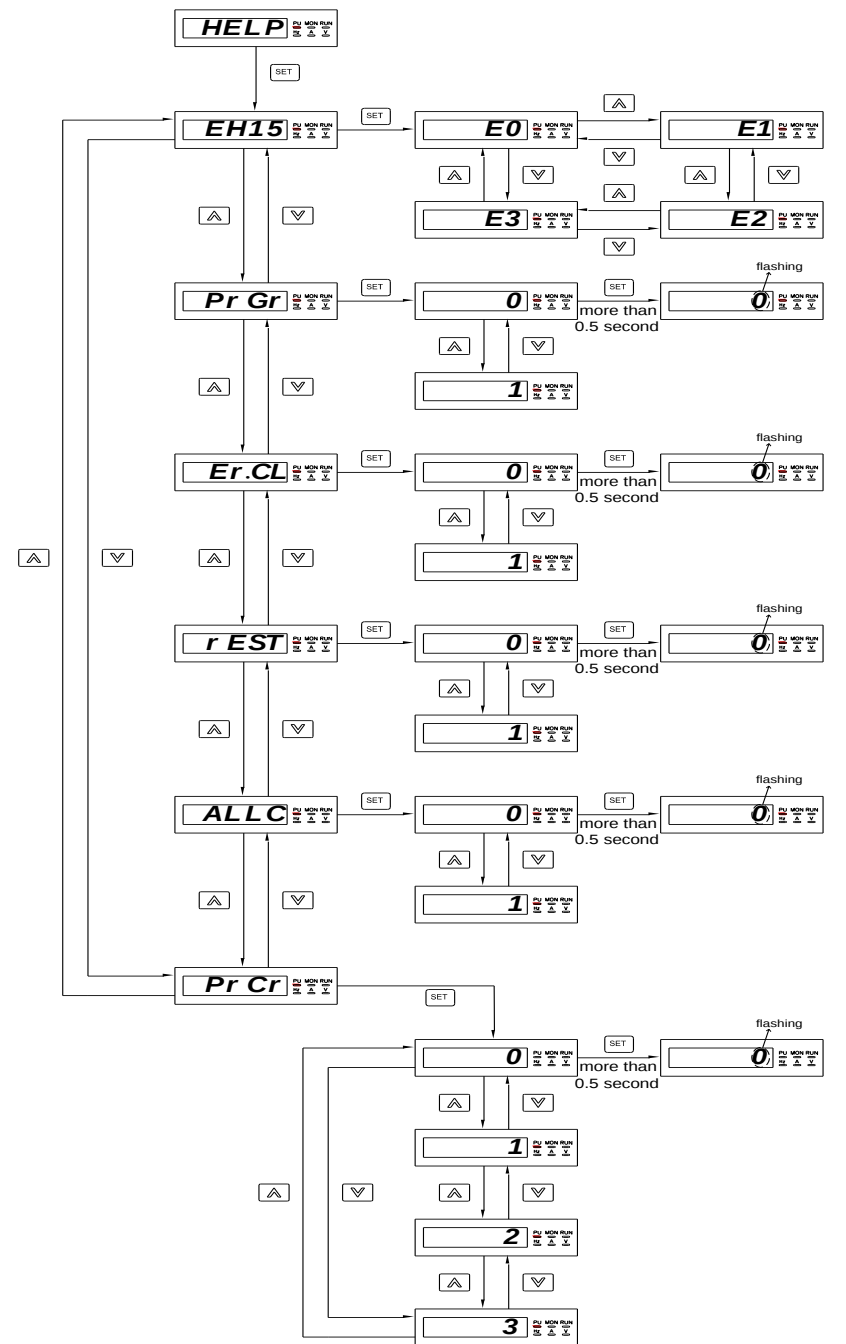
➤Frequency setting flow chart :



➤Parameter setting flow chart :



➤HELP mode flow chart :



13) Others

➤To improve our products, the parameters and contents may be modified, please contact the agent or refer to Shihlin websites (<http://automation.seec.com.tw/>) to download the latest version.

