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APP	ENDIX I: BL-U SERIES INTEGRATED CONTROLLER SIMPLE WIRING SOLUTION

BL-U series Integrated Controller Test Commissioning:



Parameter List		Setup Medhod		
	Parameter No.	Name	Use BL Sync-machine	Use Non-BL Sync-machine
	F5-00	Motor Type		Set motor type (0:sync- outer rotor, 1:async machine, 2:sync-inner rotor)
	F5-01	Poles	In blue-light	Follow motor nameplate
erate	F5-02	Sync Frequency	machine input,	Follow motor nameplate
Gen	F5-03	Rated Power	these parameters	Follow motor nameplate
matic	F5-04	Rated Speed	can generate	Follow motor nameplate
Autor	F5-08	Motor rated current	automatically, see	Follow motor nameplate
	F8-00	Encoder PPR	for detail	Follow motor nameplate
		for detail.	PG card type (0: Incremental encoder,	
	F8-U∠	PG card Type		1: Sine/Cosine encoder)
	F1-00	Car Speed	Base on site condition	
	F1-01	Motor Speed	Motor speed at elevator rated speed (calculated)	
lition	F5-09	No-Load Current	Only for asynchronc	bus machine, no-load excitation current,
Cond			normally set for 25%	%-40% of rated current.
Site			Only for asynchrono	ous machine, follow the nameplate.
uo pa	F5-10	Rated Slip	Calculation method: Rated Slip = rated frequency -(rated speed	
base	 	ļ	* poles/60)	
nput	F6-03	DirSel (direction select)	Select motor runnin	g direction
l laur		Dirsel (un ection select)	(0/1: Motor rotates	s anti- clockwise, car move down/up).
Mar			Load Compensation	: 1 enable; 0 Unable. If use incremental
	F9-11 Load Comp Enable	Load Comp Enable	encoder set this to 1; if use 1387 encoder at no-weighing	
				mode, set this to 0.

1. Parameter Need to set before Inspection Run:

When using Blue-Light Integrated Controller, if the traction machine is also made by Blue-Light, you only need to input the machine model number and encoder information on the machine name plate to finish the parameter setting of the machine.

The interface of the Blue-Light machine input is showing in figure 4.24(a). The input content has three parts, separated by ".". The first part is the model number (separated in 4 digits), the middle part is encoder resolution information, the last part is the PG model. The detail information is showing in figure 4.24(b)

For controller with software version of 0007 or above



Use [UP] or [DOWN] key to set the content of the pointed area, then press the [ENTER] key to confirm. The cursor is then moved to next bit. If the pointed area is not set, the cursor will not move even you press the [ENTER] key (Except the 4th number of the machine model, e.g. S1.0D- as the last number is empty, you can press the [ENTER] key directly to set the next bit).



The flow chart of the Blue-Light machine input is shown below in figure 4.25 (i.e. S0.75D)

2. Motor Initial Angle Tuning (Only for Synchronous Machine)

With hand operator:

For machines without attached steel rope and no load, please follow section 2.1 " Motor Initial Angle Tuning with no load". For machines attached with steel rope and have load, please follow section 2.2 "Motor Initial Angle Tuning with load".

No hand operator:

If use Blue-light synchronous machine, please follow section 2.3 to perform motor initial angle tuning without hand operator.

(The above 3 tuning method could achieve the same tuning purpose, please select one based on site condition.)

2.1 Motor Initial Angle Tuning with no load

For this tuning method, make sure the motor have no load and brake is released.

Procedures required before tuning:

1. Ensure synchronous motor (traction machine) has no load (DO NOT attach steel ropes);

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2. Connect running contactor output Y9 (J4-7) and COM3 (J4-6) to make it close;

3. Connect brake contactor output Y6 (J4-10) and COM3 (J4-6) to release the brake;

Set tuning method parameter FX-20 to "0" on digital operator (0: rotation tuning, 1: static tuning), after setting motor parameters (F5) and encoder parameters (F8) correctly, perform motor initial angle tuning based on the following procedures shown in Figure 7.3:



Display: Success or failure

Incremental Encoder: After pressing "Enter", tuning starts. Motor vibrate at beginning or runs forward / reverse a little, then it accelerates forward to a certain speed (facing to traction sheave, anticlockwise rotation is forward direction), after 20s of constant speed running, motor stops; Then it accelerates forward to a certain speed, and after 20s running in constant speed, it stops again; Then it accelerate forward to a certain speed in third time, and after 20s running in constant speed, it stops and indicates "Success". The whole tuning procedure lasts around 80s.

Sine/Cosine Encoder: After pressing "Enter", tuning starts. First, motor rotates to a firm position, then it rotates forward (facing to driving shaft, anticlockwise rotation is forward direction) in a constant speed, rotation speed and time depends on the pole number and initial position, it stops after maximum one round rotation, then it rotates to one position and remains for 2 s again, motor stops and indicates success. The whole tuning procedure lasts less than 20s.

Error Code	Definition	Possible Causes	Possible Solution
RF1	Rotation tuning error	 Motor with load; Motor phase is not correct; Encoder damage or wiring incorrect. 	 Make sure motor has no load; Correct the phase of motor; Check the encoder and wiring.
RF2	Auto tuning data error	 Motor parameter setting error; Encoder damaged or wiring incorrect; High interference. 	 Check motor parameter setting; Check encoder and its wiring; Reduce interference.
RF3	Z-phase pulse lost at tuning	 Encoder damaged; Encoder wiring is incorrect 	 Check encoder; Correct the wiring of encoder
RF4	Auto tuning result is not correct	 Motor parameter setting incorrect; Encoder and its wiring is incorrect; Auto tuning motor with loads; Speed circle P/I set too large. 	 Check motor parameter setting; Check encoder and its wiring; Make sure motor has no load; Reduce P/I parameter value.
RF5	Auto tuning UVW repeated input	The encoder UVW wire have short circuit or disconnected	Check the encoder and wiring
RF6	Motor cannot rotate normally	 Motor with load; Motor phase sequence is incorrect. 	 Make sure motor has no load; Check motor phase sequence.
Others Check controller for fault.		If drive has fault, it cannot perform auto tuning, and it will give fault code.	Check the drive is fault or not

Motor Initial Angle Rotation Tuning Fault List (Incremental Encoder, without load)

For controller with software version of 0007 or above

Motor Initial Angle Rotation Tuning Fault List (Sine/Cosine Encoder, without load)

Error Code	or Code Definition Possible Causes		Possible Solution
RF232	Motor does not rotate at auto tuning	 Encoder connection fault; Motor has load or brake close; Motor parameter input error; Motor & controller connection error. 	 Check encoder signal connection; Motor parameter input correct; Check motor/controller connection; Make sure motor has no load & brake open.
RF233 Motor rotate in wrong direction		Motor phase sequences does not match encoder	 Adjust motor phase sequence Adjust encoder A-, A+ or B-, B+
RF234	Encoder Z pulse signal error.	 No detection of Z pulse signal; Motor/Controller connection error. 	 Check wiring for Z pulse signal; Make sure motor has no load. Check motor/controller connection.

2.2 Motor Initial Angle Tuning with load

For this tuning method, tuning can be carried out with steel rope attached, but please make sure the following procedures are finished correctly before tuning:

- 1. Wiring in control cabinet is completely correct, and system under inspection state;
- 2. Set running parameter (F1), motor parameter (F5), encoder parameter (F8) correctly;
- **3.** All mechanical faults in hoistway are eliminated; cabin and counterweight locate at center of hoistway.

Set tuning method parameter FC-13 to "1" on digital operator (0: rotation tuning, 1: static tuning), perform motor initial angle tuning based on following procedures shown below:



Display: Success or failure

After pressing "Enter", tuning starts. When digital operator indicates "running", press jog up or down button, contactor KDY closes, motor will vibrate a little and give a noise, the duration depends on motor rated power and rated current, but no longer than 5s, this is static tuning period. (Make sure jog up or down button is pressed constantly, DO NOT release the button during this period.)Motor will then start and run in inspection speed, jog up or down, until digital operator indicates success, this is test running period. Finally, release the jog up or down button and finish the tuning procedure.

Please note the following items at motor static tuning:

- 1. To ensure safety, during tuning process, people are not allowed to stay in car/hoistway;
- 2. Press up or down jogging button can base on the current cabin position;
- **3.** The whole tuning procedures can be divided into two steps: static tuning and motor test run, make sure there is no gap between two steps. If no fault happens, before digital operator indicates success, press the jog up or down button constantly;
- 4. If car running direction is opposite to inspection run button, correct this through F6-03

2.3 Motor Initial Angle Tuning without Hand Operator

When using BL series integrated controller with Blue-light synchronous machine, just fill in the machine type at factory, every integrated controller will perform the corresponded angle tuning at factory, save site test time and maximize the site commissioning efficiency.

Note: At factory, integrated controller must fill in the related machine parameter (F5) and PG card parameter (F8), set tuning method to static tuning.



For controller with software version of 0007 or above

Error Code	Definition	Possible Causes	Possible Solution
RF235	Encoder Z pulse signal lost.	No encoder Z pulse signal detected after motor tuning for 7s.	If motor can running, check the encoder wiring; otherwise find out why motor cannot run.
RF236	Internal counting error.	Internal counting error.	 Check the parameter input Check motor/controller connection.
RF237	RF237 Motor is not held still Motor brake is not close or brake is too loose		Check motor brake.
RF238	Detection current is too small	Motor/Controller connection is incorrect.	Check motor/controller connection.
RF239 Tuning results have too After tuning 3 times, tuning results have large differences.		After tuning 3 times, tuning results have large differences.	Check motor and encoder wiring ground condition, then try again.
RF240-RF249	For incremental PG tuning, UVW signal error	The encoder UVW wires have wrong sequence or disconnection.	Check the UVW wiring with encoder
RF252	Auto tuning failed	Test run failed after auto tuning.	Check encoder feedback signal; Check power cable phase order.

Motor Initial Angle Tuning with load error code (same for section 2.2 & 2.3)

3. Inspection Running:

1. Things to check before inspection running in machine room.

- (1) Inspection switch in control cabinet is at "inspection" position, inspection switch on car top and cabin should be in "normal" position.
- (2) Safety circuit/door interlock circuit are normal, DO NOT short door interlock.
- (3) After power on, KJT emergency stop contactor in control cabinet, KMB door interlock contactor, KMC power contactor are closed, check if the controller is normal and parameter setting is correct, in LCD indicator, elevator state is "INSP".
- (4) Connect the brake to control cabinet properly.

2. Inspection running in machine room

When the conditions for inspection running in machine room are satisfied, press the Jog Up/Down button on the control cabinet, elevator will run up/down in set inspection speed. If car running direction is opposite to inspection run button, correct this through F6-03.

4. Hoistway Parameter Learning:

If have hand operator, please follow section 4.1, for learning without hand operator, please follow instructions in section 4.2. Both learning methods have same effect, choose one based on site condition. **Parameters need to set before hoistway parameter learning:**

Para No.	Name	Setup Method
F0-00	Total Floor	Set floor number based on actual site condition.
E0 02	Speed Deviation Set	Normally set 5 for synchronous machine, set 20 for asynchronous
F <i>3</i> -05		machine.

4.1 Perform Hoistway Parameter Learning with Hand Operator

Hoistway parameter self-learning means elevator runs at a self-learning speed and measures every floor height and record the position of every switch in the hoistway. As the floor position is the foundation for elevator normal running, braking and floor display. Therefore, before normal running, hoistway parameter self-learning must be performed. Before hoistway parameter self-learning, inspection running in full trip must be performed too; elevator must be able to run normally from bottom limit to top limit.

Hoistway parameter self-learning procedure is as follows:

- 1. Make sure elevator meets the conditions for safety running;
- **2.** Make sure all the switches in hoistway are installed and connected correctly, traveling cable and hoistway cable are connected correctly, and finish setting the HOP/display address;
- 3. Elevator in inspection mode, jog elevator down to the bottom limit (bottom limit is valid);
- 4. Enter elevator hoistway self-learning menu through digital operator, follow the learning procedures shown below in Figure 7.4



Figure 7.4 Hoistway Parameter Self-Learning Procedures

- **5.** The results of learning can be seen from hoistway position parameter U00-U69 under monitor menu with unit of meter, please check the switches position after hoistway learning.
- **6.** In self-learning process, if control system detects any abnormal phenomenon, self-learning will be terminated and give fault code, please refer to troubleshooting table in chapter 8, find out the reason and solve it accordingly, then start hoistway parameter self-learning again.

Note: When self-learning process stops, only when LCD indicator shows "success" on digital operator, self-learning is completed successfully.

After hoistway parameter self-learning is completed successfully, normal speed running can be carried out. Procedure as follows:

- 1. Switch elevator to attendant mode (Manual)
- 2. In floor selection parameter D0 through digital operator, target floor can be set (details refer to chapter 4.5 Commissioning Parameters Setup). Then it is possible to perform single floor traveling, double floor traveling, multi-floor traveling and full trip traveling test. Through D1 parameter interface, input door open / close instruction to control the door.
- 3. Make sure elevator can start, accelerate, decelerate, leveling normally in normal speed.
- 4. If running is abnormal, please check for parameters setting.

4.2 Hoistway parameter Learning without Hand Operator.

Integrated controller could also perform hoistway parameter learning without hand operator. Note: Before learning process, please make sure all switches in hoistway are installed correctly.



After making sure hoistway parameter learning is successful, elevator can test run in normal speed. Please follow section 4.1 for detail.

4.3 Hoistway Parameter Learning Fault Diagnosis

Hoistway Parameter Self-Learning Fault List

Error Code	Definition	Possible Solution
LER=0	System running error	Press "ESC" to exit learning, check fault record shown in table 8.1
LER=1	Pulse input phase reverse	Exchange phase A and phase B in encoder.
LER=2	Bottom terminal 1 switch input repeat.	Bottom terminal 1 switch installation error, causing multiple terminal switch input or bottom terminal 1 switch signal shake. Check related switches.
LER=3	Bottom terminal 1 switch signal lost (elevator >2.0m/s)	Bottom terminal 2 switch enable before bottom terminal 1 switch or bottom terminal 1 switch signal lost. Check related switches.
LER=4	Bottom terminal 2 switch signal repeat. (elevator >2.0m/s)	Bottom terminal 2 switch installation error, causing multiple terminal switch input or bottom terminal 2 switch signal shake. Check related switches.
LER=5	Bottom terminal 2 switch signal lost (elevator >2.0m/s)	Top terminal 2 switch enable before bottom terminal 2 switch or bottom terminal 2 switch signal lost.
LER=6	Top terminal 2 switch signal repeat. (elevator >2.0m/s)	Top terminal 2 switch installation error, causing multiple terminal switch input or top terminal 2 switch signal shake. Check related switches.
LER=8	Top terminal 2 switch signal lost (elevator >2.0m/s)	Top terminal 1 switch enable before top terminal 2 switch or top terminal 2 switch signal lost.
LER=9	Bottom terminal 1 switch signal lost	Top terminal 1 switch enable before bottom terminal 1 switch or bottom terminal 1 switch signal lost.
LER=10	Top terminal 1 switch signal repeat	Top terminal 1 switch installation error, causing multiple terminal switch input or top terminal 1 switch signal shake. Check related switches.
LER=11	Top terminal 1 switch signal lost	Top limit switch enable before top terminal 1 switch or top terminal 1 switch signal lost.
LER=12	Total floor setting error	Check total floor number match actual floor number. Check leveling inductor plates on every floor.
LER=14	Two leveling inductors cannot trigger together	Leveling inductor plate on this floor cannot cover both inductors or missing one leveling inductors.
LER=15	Press "ESC" in the middle of hoistway parameter learning process.	Cancel the learning by pressing "ESC".
LER=17	Up/Down leveling switch enable at same time	Wiring of two switches is parallel connection by mistake, or bottom limit switch is installed close to 1st floor leveling position.
LER=18	Hoistway data saving error	▲ Please contact supplier at once.
LER=19	Both leveling switch signal enable together when arrive at top limit switch.	Move up top limit switch.
LER=20	Bottom limit switch too high	Lower the bottom limit switch.
LER=21	When elevator reaches top limit switch, bottom terminal 1/2 switch is valid.	Check the switches position and their wirings.
LER=22	When elevator start from bottom limit switch, top terminal 1/2 switch is valid.	Check the switches position and their wirings.

Note: System has 2 top and 2 bottom terminal switches for elevator speed >2.0m/s

5. Start-up comfort level adjustment

5.1 Comfort level adjustment with weighing device

There are 3 weighing devices available for BL series integrated controller: 1. Blue-light CAN BUS weighing device; 2. -10V to 10V simulated signal output weighing device; 3. 0-10V simulated signal output weighing device.

Parameter F9-13 can be used to choose the weighing device.

Before adjust elevator start-up comfort level with weighing device, make sure the weighing device is tuned and it can respond the correct cabin load situation.

Adjustment method (See picture below for detail):

- **1)** With cabin no load, adjust F9-00 till car does not slip at empty load condition: When car has no load and brake open, if counter-weight goes down, then increase F9-00. Otherwise if car goes down then decrease F9-00. Normally F9-00 is set between 45% to 70%.
- **2)** Adjust F9-19 & F9-20: When elevator balance coordinator is 45%, if F6-03=0, then set F9-19 & F9-20 to -(50-45)=-5. If F6-03=1, then set F9-19 & F9-20 to (50-45)=5.
- **3)** After empty load adjustment, if full load condition is different, then adjust F9-21: When car has full load and brake open, if counter-weight goes down, then decrease F9-21. Otherwise if car goes down then increase F9-21.



Good comfort level could be achieve with adjustment shown above.

5.2 Start without Load Compensation Setup

When using BL3 series integrated controller with Sine/Cosine PG card, it is possible to achieve comfort start without load compensation by proper setup in FA group parameters. (It means elevator can reach the same effect of load compensation even without weighing device.)

- 1. Note for starting without load compensation:
 - a) PG card type, F8-02 is set to "1" (Sine/Cosine PG card)
 - **b)** Weighing compensation invalid, confirms F9-11 is set to "0" to disable weighing compensation and enable FA group parameters.

For controller with software version of 0007 or above

- c) Drive software version, confirm version is 0005 or above.
- **2.** Adjustment method for elevator starting without load compensation:
 - 1) Principles: As can be seen in figure 6.16 below, when brake open, based on the position feedback from Sine/Cosine PG card, system can calculates the necessary torque required for motor to remain the steady position under current load, and it gives corresponded torque at once to minimize the traction sheave movement and to achieve comfortable start.



Figure 6.16: Flowchart for elevator starting without load compensation

2) Parameters: Parameters related to function can be seen below in table 6.5.

Parameters	Display in Chinese	Factory	Fast Brake	Slow Brake	
No.	Display in English	Setting	Recommendation	Recommendation	
EA 00	启动段比例增益	20		KEEP	
FA-00	StratKP	50	NEEP		
EA 01	启动段积分增益	750	KEED	KEED	
FA -01	StratKI	750	NEEP	NEEP	
EA 09	无负载比例 1	2600	4800	3600	
FA -V0	PLKP1	3000	4800		
EA 00	无负载作用时间	900	700	KEEP	
FA -03	PLTime	300			
EA _11	无负载比例 1	800	KEED	KEED	
	PLKP2		NELF	NELF	
EA _12	无负载比例系数	125	KEEP	KEEP	
FA -12	PLKPMOD	125			
E2 00	提前开闸时间	0.5	0.9	1	
F2-00	Brake ON Time	0.5			
F0 00	最大补偿力矩	0	KEEP	KEEP	
F3-00	Max Torq Comp	0			
EQ 11	补偿使能		0	0	
F3-11	Load Comp Enable				

Table 6.5:	Elevator start without load com	pensation parameters list

For controller with software version of 0007 or above

3) Adjustment method: Main parameters used are FA-08, FA-09 and FA-11.

- **FA-09:** This parameter is the working time for starting without load compensation after brake opens, it must be set according to the actual brake opening time, if the time is too short, elevator will slip as this action will be over before brake fully opened; Also the value of F2-00 (brake opening time before running) must be 100ms longer than the value of FA-09, so that this action can finish before speed curve start.
- **FA-08 and FA-11:** Two gain parameters for the starting without load compensation action, these two parameters can be adjusted according to the elevator slipping condition and comfort level, if the slipping is too much please increase the value of FA-08; if the traction machine gets vibration, please reduce this value; during the period of torque keeping, if there is slight slipping or small back-and-forth movement on traction sheave, please increase the value of FA-11, if there is vibration, please reduce this value.

Note:

1. During commissioning, besides the mentioned 3 parameters, other FA group parameters can be kept with factory setting.

For different versions of program, the name of FA group parameters might be different, but their positions remain the same. As a result, only adjust FA-08, FA-09, FA-11 despite the operator version.
 The setting value of above parameters is just for reference, as the PG card is not same in different job side; please adjust above parameters based on site condition.

4. F9-00 is the pre-set torque when the starting without load compensation function is enabled. Generally there is no need to change its value, please keep it with factory setting (0)

6. Adjustment for Start/Brake Speed curve

Elevator running speed curve is shown below.



To achieve the maximum level of comfort, integrated controller must control the motor and make feedback speed strictly following the change of running curve. Proportional gain on the speed circle **F6-04** and integral gain **F6-05 or F7-05~F7-12** for PI section parameters also influence the motor tracking

For controller with software version of 0007 or above

ability to speed curve. Generally, increasing the proportion gain will improve the reaction of the system and promote the tracking speed. However, if proportion gain is set too big, it will cause system vibration with high frequency and large motor noise. Increasing integral gain can improve the system anti-interference/tracking ability and improve the leveling precision, but set integral gain too big will make system vibration, speed over adjustment and wave vibration.

Generally, it is recommended to first adjust proportion gain, increase it right before system vibration threshold. Then adjust the integral gain, enable system with quick reaction and no over adjustment.

Speed Loop PI Recommend Value:

Туре	Recommend Value
Proportional	700
Integral	260

If system performance is not perfect at start or stop period (low speed period), try to control in multi-section PI, detail can be seen in 6.19.2 in the complete user guide.

7. Elevator System Faults

Error Code	Definition	Possible Solution
	Door inter-lock faults: Door inter-lock circuit open at	Check the work condition of door vane and door interlock circuit.
Er2	elevator running	Roller should have enough space at both side of the vane.
Er3	Driver faults	Based on error code, check details in table 8.3
Er4	Elevator running in opposite direction with command	 Exchange phase "V" and "W" on motor Exchange phase "A" and "B", on encoder terminal block or change in parameter setup.
Er5	 System does not receive brake open feedback signal after output brake open command: 1. No X17/X15 feedback after Y6 output 0.5/2s. 2. X17/X15 enable when Y6 has no output. 	 Check the traction machine brake detection switch and wiring; If no feedback switch, should set feedback enable to OFF
Er6	During elevator running, leveling zone input signal X9, X10 is always on.	Check leveling zone signal circuit and induction switch
Er7	Inverter pulse not enough at elevator running.	Check the wiring from encoder to controller.
Er9	Contactor KDY output not matching feedback signal: 1. After Y9 output X16 no feedback in 0.4s. 2. X16 is enable when Y9 has no output.	Check the contactor KDY coil and output/feedback circuit wiring.
Er10	Safety circuit open, input X13, X29 is invalid.	Check all safety circuits.
Er11	Leveling switch signal missing: Elevator is running pass the floor, but there is not input at X9 /X10.	Check the leveling switches and its wiring.
Er12	Elevator pass top limit switch (X5 is invalid)	Check encoder, top limit switch including its position / wiring.
Er13	Elevator pass bottom limit switch (X6 is invalid)	Check encoder, bottom limit switch including its position / wiring.

For controller with software version of 0007 or above

Elevator System Fault List (Cont'd)

	Floor counter error from encoder deviation	1. Check encoder wiring and related circuits;
Er14	accumulation: after this error, elevator will return to	2. Check the leveling switch and related circuits;
	bottom floor in inspection speed for recalibration.	3. Possible reason: traction rope slip /door drive shake at start.
Er17	No drive output after running command.	Check parameters in controller or contact supplier.
	Floor number error: after this error, elevator will	Possible due to sudden nower drop & elevator slip. Check the
Er18	return to bottom floor in inspection speed for	encoder and its wiring
	recalibration.	
	The deceleration distance for target floor is not	1 Decrease "Least Speed" in user menu:
Er19	enough, elevator did not perform hoistway parameter	2 Do hoistway parameter learning again
	learning after changing terminal switch location.	
	When elevator reaches top/bottom floor and get	1 Check the braking resistor specification
Fr20	deceleration instruction, but elevator doesn't slow	2. Increase controller PL gain parameters.
2120	down; elevator did not perform hoistway parameter	3. Make elevator running curve more smooth
	learning after changing terminal switch location.	
		1. Check the traction rope for slip or car jam.
Er21	Single running time is over set time	2. Check related parameters in drive;
		3. Check value of parameter "Over Time".
Er22	Elevator has inspection signal input (X10 invalid) at	Check inspection switch and related circuits.
	elevator normal running.	
Er23	One of two leveling switch (X9, X10) is invalid at	Check leveling switches and wirings.
	elevator normal running.	
Er25	Heat sensor protection: Braking resistor or motor is	Check heat sensor circuit. If this error cannot reset in 90s, Y10
	over heat (X21 invalid).	relay on controller will output KMC contactor open signal.
Er26	Door inter-Lock contactor working state does not	Check door interlock contactor terminal & coil and their related
	match to its coil (X14, X30 input different)	terminal on controller.
Er27	Emergency stop contactor working state does not	Check emergency stop contactor terminal & coil and their
	match its coil state. (X13, X29 input different)	related terminal on controller.
Er28	Top/bottom terminal (1st or 2nd) switch fault. (X7 or	Check for terminal switches location and their wirings.
	X8 valid when elevator outside their floor)	
	Communication interference too much (In system or	1. Check system ground condition.
Er29	in duplex communication).	2. Check COP/LOP for possible damage that may influence CAN
	· ,	BUS communication.
		1. Run elevator in inspection mode, give door open command
Er30	Door open fault (car cannot open door)	and check Y4 for output signal.
		2. If Y4 has no output, need to check door open, close limit
		switch and related signal.
		Normally due to door not installed properly and short circuit
Er31	Door close fault (car cannot close door)	door interlock circuit. Check if door close and door interlock
		circuit are output at same time.
		A sudden power break may affect terminal/limit switches and
Er32	Floor number counting error.	cause floor number error. Elevator will then return to bottom
		floor for recalibration.
		KDY fault: KDY command not match feedback signal:
Er33	Motor star short circuited contactor fault	1. Y8 output, X11 has no feedback in 0.4s
		2. Y8 has not output, X11 is valid

8. Driver Faults

Error Code	Display	Definition	Possible Causes	Possible Solution
DF1	UV	DC bus under voltage (for 400V drive, 380V at UV protection)	 Phase lost on input supply; Instantaneous power lost; Excessive input voltage fluctuation; Loose terminals at input. 	 Check input power supply; Check input power cable terminals.
DF2	ov	DC bus over voltage (for 400V drive, 760V at OV protection)	 Too short deceleration time, Excessive motor regenerated energy; Supply voltage too high No connection to braking resistor. 	 Increase deceleration time; Connect brake resistor; Check power supply.
DF3	ОН	Heat sink overheated	 Excessively ambient temperature; Damaged cooling fan; Existence of heat source around. 	 Reduce ambient temperature; Remove heat source around; Check the fan and wiring.
DF4	IF	IPM fault	 IPM over current/short circuit; IPM over heat; Abnormal IPM control power (UV) 	 Check output short circuit; Check motor short circuit; Contact supplier.
DF5	ос	Over current	 Inverter output short circuit; Machine over-load; Accel/decel time too short. 	 Check motor short circuit; Check accel/decel time, slow down if needed.
DF6	CF	CUP faults	Too much interference.	Please contact supplier.
DF7	OS	Elevator over speed. The speed feedback exceeds the speed limit and last longer than set time.	 Max speed /last time set incorrect; Speed over-tuning; Encoder feedback incorrect. 	 Check speed limit setting; Check the P/I parameter; Check encoder
DF8	OE	speed over deviation. The speed deviation exceeds the allowable range and last longer than set time.	 System overload; Accel/decel time short; Parameter setting wrong; encoder cannot work properly. 	 reduce system load; Increase accel/decel time; Check the parameters; Check the encoder.
DF9	PGO	PG disconnect, did not receive encoder signal at operation.	 Encoder wiring break/ loose/ wrong; Encoder damaged. 	 check encoder wiring; Check encoder.
DF10	FF	Flash memory fault	Data fault at saving parameters.	Please contact supplier.
DF11	BF	Base block circuit error	 Wiring at X14 is incorrect; Setting electric level for X14 incorrect 	 Check the wiring at X14; Modify the parameters.
DF12	OL	Motor overload, current output exceed 150% (200%) rated value for 60s (10s).	 System load too heavy; System power rating too low. 	 Reduce system load; Change a more suitable controller.
DF13	МС	Controller main contactor MC not close after given close command for set time.	 Wrong wiring for MC contactor; MC contactor damaged. 	Try to reset the power, if this error come again, contact supplier for replacement.
DF14	BR	Brake unit fault	 Brake cable/elements issue External brake resistor disconnected 	 Check brake resistor; Replace the controller.
DF15	OF	Output phase lost	 Output cable break or loose terminal. Motor stator cable disconnect. 	 Check output cable/terminal; Check motor stator cable.
DF16	SCF	Current remains at elevator stop.	Controller damaged.	Change the controller.
DF17	SRF	Elevator slip after stop	 Brake/encoder loose; Encoder interference. 	 Fasten brake/encoder; Remove interference source.
DF18	UF	Signal U of encoder wire lost	Encoder damaged or wiring incorrect.	Check encoder and wirings
DF19	VF	Signal V of encoder wire lost	Encoder damaged or wiring incorrect.	Check encoder and wirings
DF20	WF	Signal W of encoder wire lost	Encoder damaged or wiring incorrect.	Check encoder and wirings
DF21	DF	Parameter setting error	Parameter setting error	Check parameter setting
DF22	SDF	Internal programmer check error	Internal data setting error	Please contact supplier

For controller with software version of 0007 or above

9. Parameters

U0 Monitoring Parameters

Para	Display (In Chinese)	Content	Danga	11
No.	Display (In English)	Content	Kange	Unit
110.00	下限位刻度	The location of bottom limit in hoistway. Data will	8	
00-00	Lower Limit	be recorded after finishing hoistway learning		
110.01	上限位刻度	The location of top limit in hoistway. Data will be	m	
00-01	Upper Limit	recorded after finishing hoistway learning $_{\circ}$		
	下端站1刻度	Location of bottom terminal switch 1 in hoistway.		
00-02	Lower Slowdown 1	Data will be recorded after finishing hoistway learning	m	
	下端站2刻度	Location of bottom terminal switch 2 in hoistway.		
U0-03	Lower Slowdown 2	Data will be recorded after finishing hoistway learning	m	
110.04	上端站1刻度	Location of top terminal switch 1 in hoistway. Data	m	
00-04	Upper Slowdown 1	will be recorded after finishing hoistway learning	111	
110.05	上端站2刻度	Location of top terminal switch 2 in hoistway. Data	m	
00-05	Upper Slowdown 2	will be recorded after finishing hoistway learning	111	
U0-06	1 层刻度 64 层刻度	The location of floor 1-64 switches in hoistway.	m	
 U0-69	Floor Data 164	learning		

U1 \sim U5 Monitoring Parameters

Para	Display (In Chinese)	Contont	Pango	Unit
No.	Display (In English)	Content	Range	Unit
U1-00	输入状态	Controller input data show in decimal type. It will be turned into binary type to show the logical		
01 00	Input Data	status of the input port.		
U1-01	输入状态指示	Input port data show in binary type .Each data		
	Input Bin	correspond to logical status of one input port.		
111.00	输入状态评价	Each line correspond to one input port, "On/Off" states the current port status, the following "n" value states the signal appraisal to input level.		
01-02	Input App	Value from "10" to "0" refers to interference condition from good (less interference) to bad (large interference)		
112-00	输出状态	Display the output port Y0-Y15 current status. The		
02-00	Output Data	Port without output (invalid) will be hidden.		
U3-00	轿厢信号	Display car input signal status. The valid input port		
	Car Input Data	input (invalid) will be hidden.		
114.00	运行次数	Show the elevator accumulated running times.) /	
04-00	Run Times	Adopts 10 digital decimal figures as indication	八	

For controller with software version of 0007 or above

U1~U5 Monitoring Parameters (Cont'd)

Para	Display (In Chinese)	Contont	Banga	llait
No.	Display (In English)	Content	Kange	Unit
114 01	运行时间	Show the elevator accumulated running hour.	小时	
04-01	Run Hours	Adopts 10 digital decimal figures as indication.	, 1 ,H1	
114.04	并联通讯1	Signal send appraisal for Duplex and group control.		
04-04	SendApp1	Large number means comm send more mistakes.		
U4-05	并联通讯 2	Signal receive appraisal for Duplex and group		
	ReceiveApp2	control. Large number means communication receive more mistakes.		
U4-06	电磁干扰评价	Appraise the value of interference strength at site. The big value refers to strong interference,"0"		
	Interfer Apprais	states no interference and good GND condition.		
114.07	编码器评价	The interference degree of encoder signal. When		
04-07	Encoder Apprais	signal weak with heavy interference.		
114.00	锁梯计数	The surrent elevator step times		
04-09	Lock Timer			
	控制软件版本	Show the elevator control software information.		
U5-00	CtrlSoftWare NO	Provide the current software version for factory maintenance and software upgrading.		
	驱动软件版本	Show the drive control software information.		
U5-01	DriveCodeVer	Provide the current software version for factory maintenance and software upgrading.		
	底层驱动版本	Show base drive control software information.		
U5-02	CpldEdition	Provide the current software version for factory maintenance and software upgrading.		

U3-00 Cabin Signal Content & Definition

Cabin signal	Symbol signal	Cabin terminal No.	Content
C00	IGM1	J3-4	door close 1 input
C01	IKM1	J2-4	door open 1 input
C02	IGM2	J5-4	door close 2 input
C03	IKM2	J4-4	door open 2 input
C04	GMV2	J10-6	door close limit 2 input
C05	KMV2	J10-5	door open limit 2 input
C06	GMV1	J9-3	door close limit 1 input
C07	KMV1	J9-2	door open limit 1 input
C08	SZY	J10-1	Special Use Input
C09	IGMYS	J6-4	door open delay input
C10	SZH	J9-10	Attendant input
C11			Empty (for Backup use)
C12	SZS	J10-2	Bypass drive input
C13	MZ	J9-6	Full-load input
C14	QZ	J9-8	Light-load input
C15	CZ	J9-5	Over-load input
C16	KZ (50%)	J9-9	50% Full-load (No-load) input
C17	KAB2	J9-7	Door safety plate 2
C18	KAB1	J9-4	Door safety plate 1

For controller with software version of 0007 or above

U6 Drive Monitoring Parameters List

Para	Display (In Chinese)	Content	Unit
No.	Display (In English)	content	onic
116.00	功率等级	Dated nower class	100/
08-00	Power	Rated power class	ĸvv
116 01	给定转速	Deference Speed	DDM
06-01	Ref Speed	- Reference speed	RPIVI
116.02	反馈转速	Foodbook Spood	DDM
06-02	Feedback Speed	Feedback Speed	RPIVI
116.02	称重值	The surrout load in 9/ of full load	0/
06-03	Load	The current load in % of full load	70
	直流母线电压		
06-04	DC Voltage	DC BOS voltage	v
	输出电流	Output Current	<u>^</u>
06-05	Output Current	Output Current	А
	变频器内部温度		Ŷ
06-06	Temperature	Drive Internal temperature	C
116 07	输出转矩	Output Targue	DI:D4
06-07	Output Torque	Output lorque	IN IVI

Building Setup Parameters List

Para	Display (In Chinese)	Contont	Pango	Factory	Unit	Live
No.	Display (In English)	Content	Kange	Setting	Unit	Change
	总楼层	. Total floor number (same as door zone				
F0-00	Total Floor	plate number)	2~64	6		N
F0-01	基站层	Without landing/car call elevator will	1~	1		N
	Homing Floor	return this floor.	Total Floor			
F0-02	消防层	At fire-linkage circuit close elevator				
	Fire Floor	enter fire mode and return to this floor automatically.	1~ Total Floor	1		N
	锁梯层	When close electric lock in the process	1~			
F0-03	Parking Floor	of running, elevator return to this floor and stop.	Total Floor	1		Ν
50.04	VIP 楼层		1~	1		N
F0-04	VIP Floor	VIP floor setup	Total Floor	1		N
F0-05	1~64	Set indication 1-64. customized		1		
	104 広亚小仪且	character/figure display available				Ν
F0-68	Set Indication 1~64	charactery inguite display available		64		

For controller with software version of 0007 or above

Running Setup Parameters List

Para	Display (In Chinese)	Combont	D	Factory	11	Live
No.	Display (In English)	Content	капде	Setting	Unit	Change
F1-00	电梯额定速度	Elevator speed at motor rated speed. Calculate through motor rated rev,	0~4.0	1.6	m/s	N
	Car Speed	traction ratio, deceleration ratio and traction sheave diameter.			, -	
F1-01	折算转速	Motor speed at elevator rated speed	1~9999	1450	RPM	Ν
	Motor Speed	(Calculated)				
F1-03	检修运行速度	Car running speed at inspection cannot exceed 0.6m/s based on relevant	0~0.6	0.3	m/s	Y
	Insp Speed	standards and regulations			, -	
F1-04	启动平滑速度	For large resistance at motor start, the starting speed can have smooth increase.	0~0.2	0.00	m/s	Y
	Start Speed	The start smooth speed is invalid if set to "0".			, -	
	自救运行速度	When elevator park outside door zone	0.01			
F1-05	Leveling Speed	the elevator can level to door zone with	~	0.3	m/s	Y
		this speed.	0.6			
F1-06	甲层运行 迷度	Steady speed on the lowest speed curve.	0~1.0	0.5	m/s	Ν
	上edst Speeu 坦前开门速度	Car speed when elevator open door in				
F1-07	Open Door Speed	advance is allowed.	0~0.3	0.15	m/s	Ν
F1-08	再平层保护速度	The speed limit for re-leveling. If speed exceeds such value in re-leveling process, the re-leveling will stop with #03	0~0.3	0.3	m/s	N
	Relevelst Speed	protections.				
F1-09	再平层运行速度	Elevator running speed at re-leveling	0~0 10	0.05	m/s	N
	Relevelrun Speed				11,3	
F1-10	加速斜率 B1	B1 refers to the acceleration speed curve changing rate, smaller value means	0.1~1.0	0.7	m/s²	N
	Acceleration B1	elevator start with smooth and gentle increase of speed			-	
F4 44	减速斜率 B2	B2 refers to the deceleration speed curve changing rate, smaller value means	0.1~1.0	0.7	, ²	N
F1-11	Deceleration B2	elevator brake with smooth and gentle decrease of speed.	0.1 1.0	0.7	m/s	IN
	S 曲线 P1	P1: Acceleration speed increase rate at beginning of elevator start: smaller value			. 3	
F1-12	S Curve P1	means beginning of elevator start with slow and steady movement.	0.1~1.0	0.6	m/s³	N
F1-13	S 曲线 P2	P2: Acceleration speed decrease rate at end of elevator start; smaller value means	0.1~1 0	0.6	m/s ³	N
	S Curve P2	end of elevator start with slow and steady movement.	0.1 1.0	0.0	, c	
	S 曲线 P3	P3: Deceleration speed increase rate at				
F1-14	S Curve P3	means beginning of elevator brake; smaller value means beginning of elevator brake with slow and steady movement.	0.1~1.0	0.6	m/s ³	Ν
	S 曲线 P4	P4: Deceleration speed decrease rate at				
F1-15	S Curve P4	end of elevator brake; smaller value means end of elevator brake with slow and steady movement.	0.1~1.0	0.6	m/s ³	Ν

For controller with software version of 0007 or above

Running Setup Parameters List (Cont'd)

Para	Display (In Chinese)	Contant	Pango	Factory	Unit	Live
No.	Display (In English)	Content	Kallge	Setting	Unit	Change
F1 16	零速阈值	Motor speed less than set value, system	0~10	1		v
11-10	Zero Speed	output brake signal.	0 10	T	NPIVI	T
F1 17	平层调整	Adjust differences of up/down loveling	0~100	50		N
F1-17	Leveling Adj	Adjust differences of up/down leveling	0-100	50	mm	IN
	称重调整	Normally used in synchronous machine				
F1-18	Load Adj	on steel rope weight difference on each floor.	0~20	0		Y
	驱动模式	Selection of driving mode ,when setting "1", attendant/VIP mode close door				
F1-21	Drive Mode	manually; when setting "3", elevator automatically do test run ,other value is invalid.	0~9	0		N
F1-22	贯通门方式	Setup rear door mode, based on customer requirements, set from	0~5	0		N
	Two Door Mode	mode"U" to"5".				
	消防方式	1.Mode"0": Elevator run fire-mode after returning to fire floor;				
F1-23	Fire Mode	 2.Mode "1": Elevator stop running after returning to fire floor; 3. Mode "2": After elevator return to fire floor, depend on fire switch to run/stop in fire mode. 	0~2	0		Ν
	并联梯号	Set "YES" in duplex enable. Set elevator				
F1-24	Parallel No.	number 0-1 in duplex; 0-7 in group control.	0~7	0		N
	并联使能	Elevator duplex control:				
F1-25	Twins Control	1: On 0:OFF	0/1	0		Y
	群控使能	Elevator group control:				
F1-26	Group Control	1:ON 0:OFF	0/1	0		Y
	远程监控使能	Remote Monitoring System:				
F1-27	Far Monitor	1: On 0: Off	0/1	0		Y
	自动开关梯使能	Auto parking:	0.4	0		
F1-28	Auto Parking	1:ON 0:OFF	0/1	0		Ŷ
	称重使能	Load Weighing:	0/1	0		v
F1-29	Load Enable	1:ON 0: OFF	0/1	U		Y
	开门延长使能	Door open/close delay:	0/1	0		v
F1-30	Open Delay Able	1:ON 0:OFF	0/1	0		r
F4 34	闸臂反馈使能	Test brake feedback signal:	0/1	0		v
F1-31	Brake Feedback	1: open 2: close	0/1	U		Ŷ
F1 33	解梯密码	Decemend to release alouster stor	0~0000	0		N
F1-32	Rerun Password		0 9999	0		IN

For controller with software version of 0007 or above

Time Setup Parameters List

Para	Display (In Chinese)	Content	Pango	Factory	Unit	Live
No.	Display (In English)	Content	Nalige	Setting	Onit	Change
F2-00	提前开闸时间	Brake open first then run elevator speed				
	Brake ON Time	comfort and match control system with different machine brake on time.	0.00~9.99	0.50	S	Y
F2-01	抱闸时间	Brake close first then disable elevator run.				
	Brake OFF Time	This is to improve elevator stop comfort and avoid slip at elevator stop.	0.00~9.99	0.50	S	Y
F2-02	检修抱闸时间	The time delay in inspection mode before	0 00~9 99	0.05	s	v
12-02	Insp Brake Time	brake close.	0.00 5.55	0.05	3	1
F2-04	零速时间	The time delay when system detects elevator stop. Adjust this parameter to close	<u>0~9 99</u>	0.30	s	v
12 04	Zero Time	brake after elevator reach 0 speed completely, increase elevator stop comfort.	0 5.55	0.50	,	
F2-05	开门保持时间	In Auto mode, elevator automatically open door when stopping at one floor, door will	0~999	3	S	Y
	Open Door Time	automatically close after set time.				-
F2-06	开门延长时间	Enable door open delay function, press open delay button, door open time will be	0~999	30	S	Y
	Open Delay Time	delayed.				
F2-07	返基站时间 Homing Time	The waiting time before elevator return to homing floor without landing/car call, Set value to " 0 " to disable this function.	0~999	60	S	Y
F2-08	开关门保持时间	 The door open/close command run time; Door open/close relay run time for door drive without open/close limit switch. 	0~999	5	S	Y
	Door Run Time	3. For door drive with open/close limit switch, this run time should be 1s longer than the door actual open/close time.	0.000	•		
	到站信号延时	After elevator change speed to target floor,				
F2-09	Beep Delay Time	landing signal is delayed by set time, arrival gong /voice synthesizers are also delayed by set time.	0.00~9.99	0.15	S	Y
	使能延时	Drive enable signal given/drop is delayed by set time after drive direction signal is				
F2-10	Enable Delay	given/drop. During this time, drive output current is decreased to reduce current noise.	0.00~9.99	0	S	Y
	关照明延时	In Auto mode, if have no car/landing call				
F2-11	Lamp Off Time	during set time, system will cut car light power from COP.	0~999	15	min	Y
53.63	运行超时时间	To prevent wire rope slipping or elevator car stuck, time from elevator running to stop is limited to set value. If elevator is running	0.000	45		, v
F2-12	Over Time	ionger than set value, system stops immediately and enter protection mode. Need to re-start the system in order to exit from such mode.	0~999	45	S	Y

For controller with software version of 0007 or above

Para	Display (In Chinese)	Contont	Pango	Factory	Unit	Live
No.	Display (In English)	content	Range	Setting	Unit	Change
F2-13	启动平滑时间	The time to keep elevator start smooth	0.00~0.00	0		Y
12-13	SmoothStart Time		0.00 9.99	U	3	<u> </u>
F2-14	自动开梯时间	Sustain will automatically start the elevator	00:00		1	1
52.15		System Will automatically start the elevator		00:00	时:分	Y
F2-13	Start Time	(Electric IOCK. ON) at set time.	23:59		<mark>اا</mark>	ı!
52-16	自动关梯时间	System will automatically stop the elevator	00:00			
F2-10		(Electric lock: OFF) at set time. This function	l	00:00	时:分	Y
F2-17	Stop Time	is disabled if same start/stop time.	23:59			1
E2-18	不停层开时间		00:00		ĺ	ı
F2-10		System will run bypass the set floor start	I I	00:00	时:分	Y
F2-19	Start Time1	from this time.	23:59		1	1
F2-20	不停层关时间		00:00		l	
FZ-20		System will run bypass the set floor start	· ··· ·	00:00	时:分	Y
F2-21	Stop Time1	until this time.	23:59		1	1

Time Setup Parameters List (Cont'd)

Note: The elevator automatic switch: F2-14, F2-15 F2-16, F2-17 were set separately as per hours and minutes. Please follow the operator indication for this setting.

Para	Display (In Chinese)	Contont	Bongo	Factory	Llmit
No.	Display (In English)	Content	Kange	Setting	Unit
	主板输入类型	Setting the input type on main control panel.	0		
F3-00	Input Type	default level of main board input port. ON: Close enable, OFF : Open enable.	0∕∼ 4294967295	3974102631	N
	轿厢输入类型	Setting the input type of cabin. Each bit	0~		
F3-01	Car Input Type	corresponds to one terminal. ON : Close enable, OFF : Open enable.	4294967295	4294573839	N
E2 02	输入功能1	V10 Input Eurotian Solaction	0~22	10	N
F3-U2	Input select 1		0 32	19	IN
F3-03	输入功能 2	X22 Input Function Selection	0~22	22	N
	Input select 2		0 32		
E2 04	输入功能 3	X23 Input Function Selection	0~32	23	Ν
13-04	Input select 3		0.52	25	
F3-05	输入功能 4	X24 Input Function Selection	0~32	24	Ν
13 05	Input select 4		0 52	27	
F3-06	输入功能 5	X25 Input Function Selection	0~32	25	Ν
13 00	Input select 5		0.52	25	
F3-07	输出功能1	YO Output Function Selection	0~32	0	Ν
13 07	output select 1		0.52	0	
F3-08	输出功能 2	Y11 Output Function Selection	0~32	11	Ν
13-00	output select 2		0 52	11	IN
F3-09	输出功能 3	Backup Output Function Selection	0~32	12	Ν
F3-09	output select 3	Buckup Gutput Function Selection	0 52	14	IN

Input Type Setup Parameters List

Note: When using X22 and X23 as multifunctional input port, please make sure the re-leveling device is NOT used.

For controller with software version of 0007 or above

Service Setup Parameters List

Para	Display (In Chinese)		_	Factory	
No.	Display (In English)	Content	Range	Setting	Unit
E4 00	不停层设置1	Set elevator stop/bypass at floor	0~	4204067205	v
F4-00	Set Stop Floor1	corresponds to each bit. (1-32 floors)	4294967295	4294907295	T
E/1_01	不停层设置 2	Set elevator stop/bypass at floor	0~	1201067205	v
F4-01	Set Stop Floor2	corresponds to each bit. (33-64floors)	4294967295	4294907293	I
	分时不停层1	Set elevator stop/bypass at floor	0~		
F4-02	TIM Stop Floor1	(1-32 floors)	4294967295	0	Y
F4-03	分时不停层 2	Set elevator stop/bypass at floor corresponds to each bit at the set time.	0~	0	Y
	TIM Stop Floor2	(33-64 floor)	4294967295		
E4 04	前门设置1	Set elevator front door enable /disable at floor corresponds to each bit	0~	4294967295(1~	v
14-04	Door Select A1	(ON/OFF: Front door enable /disable at this floor)	4294967295	32 floor)	I
	后门设置1	Set elevator rear door enable /disable at	0~	4294967295(1~	
F4-05	Door Select B1	floor corresponds to each bit (ON/OFF: Rear door enable /disable at this floor)	4294967295	32 floor)	Ŷ
	特殊功能选择	Set elevator functions enable /disable at	0~		
F4-06	Funtion Select	floor corresponds to each bit. (ON: Enable, OFF: Disable)	4294967295	4	Y
	特殊功能选择 2	Set elevator functions enable /disable at	0~		
F4-07	Function Select 2	floor corresponds to each bit. (ON: Enable, OFF: Disable)	4294967295	0	Y

Special Function List

Number	Instruction
F4-06-00	After elevator stops, based on current floor, if there is no landing/car call ahead of the current floor in previous running direction, system will cancel all the car calls.
F4-06-03	ON: Disable ER29 fault; OFF: If communication interference is severe then report ER29 fault.
F4-06-04	ON: Two elevators in duplex control and not in service, when the same floor has both up/down landing call registered, both elevator serve this call. OFF: Only one elevator serve this call.
F4-06-05	ON: Elevator disable cabin overload signal, this is used in elevator 125% load test. OFF: Overload signal enable.
F4-06-06	ON: When the elevator cannot open door in current floor (OP fault in controller), it will automatically go to the next floor and open door.
F4-06-07	ON: Floor number display change after elevator enter landing zone; OFF: Floor number display change after elevator change speed;
F4-06-08	ON: When elevator stops in inspection mode, brake close after receiving zero speed signals to reduce impact.
F4-06-09	ON: Elevator can cancel registered car call at running. If all call canceled, elevator stop in nearby floor.
F4-06-14	ON: Enable elevator function for disabled people. OFF: Disable elevator function for disabled people.
F4-06-15	ON: In Fire mode when elevator leaves fire floor then disable fire linkage output, when elevator return to fire floor then restore fire linkage output.
F4-06-16	ON: When door lock is closed, door close limit must be valid too. OFF: Door lock state is not related to door close limit.

For controller with software version of 0007 or above

Special Function List (Cont'd)

功能号	功能说明
F4 06 17	ON: When elevator stops in inspection mode, inverter direction given and brake are released together.
F4-06-17	OFF: When elevator stops in inspection mode, inverter direction given drop is 0.5s later than brake close.
EA 06 19	ON: In rear door mode, elevator only installs one set of door open& close buttons.
F4-00-18	OFF: In rear door mode, elevator installs two sets of door open & close buttons.
E4 06 10	ON: Enable re-levelling with door open function (Need to use SJT-ZPC-V2 re-levelling control board)
F4-00-19	OFF: Disable re-levelling with door open function
E4-06-20	ON: Enable door open in advance function (Need to use SJT-ZPC-V2 re-levelling control board)
14-00-20	OFF: Disable door open in advance function
F4-06-21	ON: In inspection mode, door cannot open outside levelling zone.
1400 21	OFF: In inspection mode, door can open at any position.
F4-06-22	ON: 3-phase 380V 50Hz power supply (with back-up generator)
	OFF: Battery power supply (disable BUS under voltage fault)
F4-06-23	ON: Use SJT-300 weighing device through CAN BUS
	OFF: Use SJT-150 weighing device through RS485
	ON: secondary-terminal switch is adopted for elevator speed <2m/s (it is generally used in 1.75m/s elevator
F4-06-24	for two steps forced deceleration.)
	OFF: Secondary-terminal switch is not adopted for elevator speed below 2m/s.
F4 0C 2F	ON: In inspection mode door open/close switch in car is invalid;
F4-06-25	OFF: In inspection mode door open/close switch in car is valid ;
	ON: Use light curtains/safety plates separately, the attendant up/down input terminal is used as front/rear
F4-06-28	door safety plates input.
	OFF: Light curtains and safety plates have serial connection (Blue-light default Setting)
	ON: Motor operation & internal SC contactor are used separately, X11 as Internal SC contactor feedback
F4-06-29	terminal, Y8 as Internal SC contactor output control (See wiring diagram for detail)
	OFF: Operation contactor has internal short-circuit function (Blue-light default Settings)
	ON: Integrated controller LED has reverse display. This is used for Blue-light G-series cabinet in roomless
F4-06-30	OFE: Integrated control board is placed reversely)
	ON: When APD function is active system will open brake for 1s (when sliding speed >0.1m/c, brake will
F4-07-00	close again), it will then find the heavy load direction based on the sliding direction, use battery to land the
	cabin on heavy load direction and reduce leveling energy cost.
F4-07-01	ON: Enable elevator data recorder. Together with PC debugging software, after-sales/service team can
	provide fault diagnosis
	ON: Disable top/bottom limit signal, use another mechanism to detect limit signal:
F4-07-02	a. Top terminal/down door zone valid + up door zone invalid = Top limit
	b. Bottom terminal/up door zone valid + down door zone invalid = bottom limit
F4-07-03	ON: Enable serial connected electric lock
F4-07-04	ON: Take negative for serial connected electric lock
F4-07-05	ON: Enable serial connected fire-linkage signal
F4-07-06	ON: Take negative for serial connected fire-linkage signal

For controller with software version of 0007 or above

Dava Na	Display (In Chinese)	Contont	Downe	Factory	l la it	Live
Para No.	Display (In English)	Content	капде	Setting	Unit	Chang
F5-00	电机类型	Set motor type (0:sync- outer rotor, 1:async machine,	0~2	0		N
	Motor Type	2:sync-inner rotor)				
F5-01	电机极数	Moto poles (Namenlate)	1~99	20		N
	Poles	moto poles (numeplate)	1 55	20		
F5-02	电机同步频率	Motor synchronous frequency	0.001	16	Hz	N
	Sync Freq	(Nameplate)	~99.999			
F5-03	电机额定功率	Motor rated power	1~50	67	kW/	N
	Rated Power	(Nameplate)	1 50	0.7		
F5-04	电机额定转速	Motor rated speed	1~1000	96	RPM	N
	Rated Speed	(Nameplate)	1 1333	50		
F5-05	反电动势	Motor counter-EMF	1~380	280	V	N
	V IN	(Nameplate)				
F5-06	电机相电感	Motor phase inductance set.	Auto-tuning/		mH	N
	L_phase	(Auto-tuning/ manual input)	Nameplate			
F5-07	电机相电阻	Motor phase resistance set.	Auto-tuning/		Ω	N
	R_phase	(Auto-tuning/ manual input)	Nameplate			
F5-08	电机额定电流	Motor rated current.	0~		А	N
15 00	Rated FLA	(Nameplate)	99.999			
F5-09	空载电流	For asynchronous machine,	0.1~50	0	А	N
15 05	NO-Load Current	no-load excitation current.	0.1 50	Ŭ		
E5-10	滑差	For asynchronous machine	0.1~10	13	HZ	N
F3-10	Rated Slip	rated slip. (Nameplate)	0.1 10	1.3		IN IN
56.00	载波频率		C~1 F	0		
F0-00	Carrier Freq	Set controller carrier frequency.	6-15	ð	KHZ	IN
FC 00	速度压缩比	Speed Zoom (Reduce elevator	0~100	100	0/	v
F0-U2	SpeedZoom	actual running speed)	0.100	100	%	Ŷ
F6-03	运行方向选择	Select motor running direction $(0/1)$. Motor rotates anti-	0/1	0		
	DirSel	clockwise, car move down/up).		-		
	速度环比例	Speed loop proportional gain.				
F6-04	Кр	(Valid for complete curve if not used in multiple PI.)	0~65535	700		
	速度环积分	Speed loop integral gain (Valid				
F6-05	KI	for the complete curve if not used in multiple PI.)	0~65535	260		

Motor Setup Parameters List

For controller with software version of 0007 or above

Para	Display (In Chinese)	Contont	Pango	Factory	Unit	Live
No.	Display (In English)	Content	Kange	Setting	Unit	Chang
E7 00	多段 PI 使能	Multiple PI parameters	0/1	0		N
F7-UU	PIMulEnable	1: Enable; 0: Disable	0/1	U		IN
E7 01	PI 作用范围 1	PI available range 1 (Start	0~	0	ц ₇	v
F7-01	PI1 Range	-middle speed running Pi switch frequency)	Rated freq	U	Π2	Ť
F7 02	PI 作用范围 2	PI available range 2 (middle	0~		Ц- ,	v
F7-U2	PI2 Range	frequency)	Rated freq	U	Π2	ř
57.04	PI 作用范围 4		0~		ц.,	v
F7-04	PI3 Range	Pl available range 4	Rated freq	0	Π∠	Ť
E7 05	比例增益1	PI available range 1	0~2000	700		v
F7-05	Kp1	proportional gain	0 2000	700		T
57.06	积分增益1	PI available range 1 integral	0~2000	260		v
F7-U0	Kx1	gain	n 0~2000	260		ř
F7 07	比例增益 2	PI available range 2	0~2000			v
F7-U7	Kp2	proportional gain	02000	U		Ŷ
F7 08	积分增益 2	PI available range 2 integral	0~2000	0		v
F/-Uō	Kx2	gain	0-2000	U		ř
F7 11	减速段比例	PI available range 4	0~2000	700		v
F7-11	КрЗ	proportional gain	0~2000	700		Ŷ
F7 10	减速段积分	PI available range 4 integral	0~2000	200		v
F7-12	Kx3	gain	0~2000	260		Ŷ

Multiple PI Setup Parameters List

Encoder Setup Parameters List

Para	Display (In Chinese)	Contont	Pango	Factory	l lucit	Live Chang
No.	Display (In English)	content	Kalige	Setting	Onit	
F8-00	编码器线数	The encoder pulse count				
	Encoder PPR	per-revolution.	100~8192	8192		N
F8-02	PG 类型	PG card type				
	РGТуре	(0: Incremental encoder, 1: Sine/Cosine encoder)	0/1	0		N

For controller with software version of 0007 or above

Control Setup Parameters List

Para	Display (In Chinese)	Content	Damaa	Factory	11	Live
No.	Display (In English)	Content	капде	Setting	Unit	Chang
	最大补偿力矩	Maximum torque compensation (torque				
F9-00	Max Torq Comp	100% correspond to machine rated torque.)	0~100%	0	%	N
	速度来源选择	Speed given source selection:				
F9-01	O1 0: Simulation; 1: Multi-segment SPDSourceSel 2: Internal; 3: Operator		0~3	2		Ν
E0 02	超差范围设定	Speed Deviation Set (100% correspond	0~100	L	0/	v
F9-03	Spderr Set	to machine rated speed.)		5	70	T
EQ_11	补偿使能	Load Compensation:	0/1	1		Ν
13-11	Load Comp Enable	1 enable; 0 Unable	0/1	-		IN .
	称重来源	Weighing source (0:SJT weighing.	- 4 4			
F9-13	Load Source Sel	1:-10-10V weighing, 2:0-10V weighing)	0/1/2	0		N
50.10	顺时针补偿偏置	Up direction (clockwise) Compensation	100- 100	0		v
F9-19	UP Comp Bias Bias	-100, -100	U		T	
	逆时针补偿偏置	Down direction (anti- clockwise)				N
F9-20	DOWN Comp Bias	Compensation Bias	-100~100	0		Y
E0 21	满载补偿比例	Full load companyation properties	0 200	100		v
F9-21	FULL Comp Pro	Full load compensation proportion	0,~200	100		Ŷ

No-load Compensation Setup Parameters List

Para No	Display (In Chinese)	Content	Pange	Factory	Unit	Live
	Display (In English)	content	Nange	Setting	Onit	Chang
FA 00	启动段比例增益	Start-up proportional gain with no	0~50000	20		N
FA-00	StratKP	compensation.	0 50000	30		IN
FA 01	启动段积分增益	Start-up integral gain with no compensation	0~50000	750		N
FA-UI	StratKI					IN
FA 00	无补偿比例 1	No compensation effect proportional	1~6500	3600		N
FA-00	PLKP1	gain 1				
EA 00	无补偿作用时间	No componention offset time	1~1000	900	mc	Ν
FA-03	PLTime	No compensation effect time	1 1000	900	1115	IN
FA 11	无补偿比例 2	No compensation effect proportional	0~50000	800		N
FA-11	PLKP2	gain 2	0 50000			IN
FA-12	无补偿比例系数	No compensation effect proportional	0~50000			
	PLKPMOD	factor		125		N

For controller with software version of 0007 or above

Special parameters (FC) are mapping a part of factory parameters (FX) in customer level; users can access this part information by user level password. In these parameters, FC-00~FC-06 can only be viewed but not editable, while other parameters can be changed. Special parameters (FC) number, description and content are shown below.

Special Parameters List

Para No	Display (In Chinese)	Contont	Pango	Factory	Unit
Para NO.	Display (In English)	content	Kange	Setting	Unit
FC-00	Z 脉冲数	Result of motor angle tuning,	∩∼3277		N
10-00	Zpulse_Init	same as FX-00.	0 3277		
FC -07	电流环比例	Current ring proportional (FX-07),	0~65535	2000	Ν
10-07	KpIreg	MODIFY WITH CAUTION!	0 00000	2000	
FC -08	电流环积分	Current ring integral (FX-08),	0~65525	500	Ν
10-08	KxIreg	MODIFY WITH CAUTION!	0 00000	500	IN
	自学习方式选择	Sine/Cosine PG card auto- tuning	0/1	0	
FC-13	AutoTuneModeSel	selection (FX-20): 0:Rotation; 1:Stationary;			Ν
	负温度报警使能	Negative temperature alarm			
FC-14	N Temp Alarm Ena	(FX-21) 1: Alarm enable at -15C; 0: Alarm disable at -15C.	0/1	1	N
	初始定位使能	When using Sine/Cosine PG card, whether need CD signal for position at power up 0:Yes.1:No			
FC-15	InitTuneEnable	(Can only set to 0 for SPG-V33 and above) Set to 0 can avoid electric noise at first power up.	0/1	0	N
FC-16	CD 信号方向选择	FC15 is available if set to 1. Set to			
	CD DirSel	0 if AB & CD signal in same phase, otherwise set to 1. (Auto selected at motor angle tuning.)	0/1	0	Ν

Environment Setup Parameters List

Dava Na	Display (In Chinese)	Combout	Damas	Factory	11
Para No.	Display (In English)	Content	капде	Setting	Unit
AO 00	显示语言	Language selection		中文	v
A0-00	Language Sel			中义	ř
AO 01	用户密码	Input/Satting user level password	000000~ 999999	000000	v
A0-01	User Password	input/setting user level password			I
A0 02	厂家密码	Input/sotting factory loval password	000000~	000000	v
AU-U2	Factory Password	input/setting factory level password	999999	000000	Y
A0-04	对比度		010	_	
	Contrast	Setting the LCD contrast level	0~10	5	N



10. Integrated Controller Terminal Wiring Diagram

Note: For all terminals with "*", except X5, are not needed in the "simple wiring solution". Detail can be seen in appendix 1.

Appendix I: BL-U Series Integrated Controller Simple Wiring Solution

For integrated Controller MU-V5 main board logic program with version 6020 or above support the function of "Simple wiring solution". Detail can be seen below:

When F4-07-34 is set to "ON", up/down limit signal will not be used, this saves 2 hoistway cables. Instead, the up limit signal is generated with up terminal/down door zone signal valid + up door zone signal invalid; the down limit signal is generated with down terminal/up door zone signal valid + down door zone signal invalid.

Note: When using this function, please short connect X5 (J3-3) & GND_IN (J7-2) as inspection signal for outer circuit power cut, this is to prevent controller miss-register floor information at outer circuit power cut.

For integrated Controller MU-V5 main board logic program with version 6020 or above together with BL2000-CZB-V10 COP can support CAN BUS control COP open/close door. In this way the open/ close door signal in the hoistway cable (total 5 wires) can be reduced.

BL2000-CZB-V10 Serial control Door Setup: (through Jumper)

J1	J2	J3	JD	
YES	YES	YES	No	With COP

First use jumper 3,2,1 & D to setup the COP function, after COP buzzer ring twice, it enters function setup. Door open 1 button shows the condition of this function: Button light on means serial control door function is enable, button light off means this function is disabled; press the button to switch these 2 conditions. After setup, change the jumper, the set value will flash 3 times, buzzer will ring 3 times, means COP setup is restored and quit function setup mode.

After enabled serial control door function, door open relay 1,2 & door close relay use the same public terminal (J11-6), J11-5 is door close relay output, J11-9 is door open 1 relay output, J11-10 is door open 2 relay output. Y2-Y5 relay on main board still output the door open/close signal and can be used to monitor the door condition when command go through CAN BUS.

Integrated controller and LOP CAN communication can add electric lock and fire signal. Together with BL2000-HAH-M1.1, FR2000-HAH-V9 & BL2000-HAH-B9 it could allow CAN BUS to control electric lock and fire mode and save 2 cables in the hoistway. To enable this function, short DS jumper on LOP.

Note: Only 1 LOP for one elevator can short jumper DS and set as electric lock/fire service input. If parking floor and fire floor are different, please connect a wire from this LOP to the other floor.

BYO-3 24V Public	BY0-4	Spare Input 0

BY1-3 24V Public	BY1-4	Spare Input 1
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Default: Spare input 0 as electric lock input, spare input 1 as fire service mode input.

Parameters need to set on Integrated controller:

F4-07-35 set "On" to enable CAN BUS electric lock function.

F4-07-36 set "On" to reverse CAN BUS electric lock enable type.

F4-07-37 set "On" to enable CAN BUS fire service function.

F4-07-38 set "On" to reverse CAN BUS fire service enable type.

Note: After CAN BUS fire signal is enabled, its original terminal on the main board (X12) is still valid, both signals could enable elevator fire-service mode.

Note: When controller enables CAN BUS electric lock/fire service function but without LOP or LOP did not connect jumper DS or communication break, elevator cannot enter lock/fire-service mode.