ME-LIFT-P Microprocessor Control System for Elevator

User Manual

Zhuhai Alpha E&M Co., Ltd

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OUR WEBSITE:

WWW.ALPHA-LIFT.COM

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Safety Warnings

Please confirm at the arrival of the product

Notice
. **Don't install the equipment if the control device has been damaged**

Transportation

Notice
. During transportation, the commodity shall be handled with care to avoid the possibility of damaging the control device. . During transportation, please do not touch the components of the control device with hands to avoid damage caused by static electricity. . During transportation, please do not touch the control device with wet hands to avoid the possibility of damaging it.

Installation

Notice
• Please install the system to metal or other incombustible substance to avoid the danger of fire. • Make sure there is no combustible substance nearby to avoid the danger of fire. • The machine cabinet that install equipment shall meet relative standards. • Never install the system at any place where there might be water splash • Never drop screws, spacer plates or other metal objects into the control device. • Do not put the cover plate or face plate under any pressure to avoid the possibility of damaging the controller control device. • Absorbing circuit must be added to all inductive load. Absorbing circuit must be added to the coil side of all inductive load such as replay, contactor, brake coil etc. Use RC for absorption for ac type, the resistance is 100 Ω/4W and capacitance is 0.1uF; Use reverse parallel connection diode for absorbing DC type, DC brake circuit with comparatively larger current can use commute bridge rectifier to replace diode. • Earth connection of screened wire of rotating encoder is very important! Make sure that screened wire is used and one of the ends is earthed. Some encoder with poor anti-jamming ability will affect the sense of comfort and cause noise of the motor or even render the elevator unable to work normally. • As to well cable and traveling cable, please pay attention to that the heavy current wire (including power supply for door operator, safety circuit, door feedback circuit, illumination circuit etc.) and weak current wire (including communication line, DC0V, DC 24V, terminal landing forced deceleration switch, terminal limits switch etc.) are separated. • Twisted-pair wire must be used as communication line. Distance between twisted-pair wire should be 20mm to 30mm. If condition allows, it would be better to use thetwisted-pair wire, and the screen layer should be connected to earth. • If the heavy current wire are parallel laid with the weak current wire (commonly seen in cable accompanying the elevator), please make sure that the heavy current wire is laid at one side and weak current wire is at the other side, and they are separated by earthed line. • All above these wiring rules must be specified clearly in the plan drawings. The usage of every line must be indicated clearly. • The casing of control cabinet, earth end of inverter, casing of motor and the cabinet of the car should be connected to earth. Hall call box should be connected to earth too, or signals transmission may be impaired.

Wiring

Notice
• Wiring should be conducted by qualified professional to avoid electrical shock accidents or damages of the control device. • Before wiring, please make sure that the power is completely switched off to avoid getting electrical shock and damaging the control device. • When energizing, please don't touch any place with electricity to avoid damaging control device or getting electrical shock. • Please notice the different volt level of different terminals and do not mix them, or the control device might be damaged. • Please fix the terminal bolt with suitable torque , or failure might occur. • Thewire connected to impulse port should be screened or failure might occur.

Operation control device

Notice
• Installation must be conducted by qualified professional personnel to avoid any accident or damaging the control device. • Do not operate the control device with wet hands, or the control device, it might be damaged and electric shock might occur. • Plugging in or out the plug-in parts of the control device should be performed when the power supply is switched off to avoid damaging the control device or getting hurts. • The work of changing parts should be performed by professionals and bits of wire or metal objects are forbidden to be left in the machine to avoid the possibilities of damaging the control device, getting electrical shock or fire. • Parameter setting must be changed if the control device has been changed. • The resistance between CANH and CANL shall be around 60Ω after all the wiring has been finished, or the elevator might not be able to work steadily.

Environment requirements

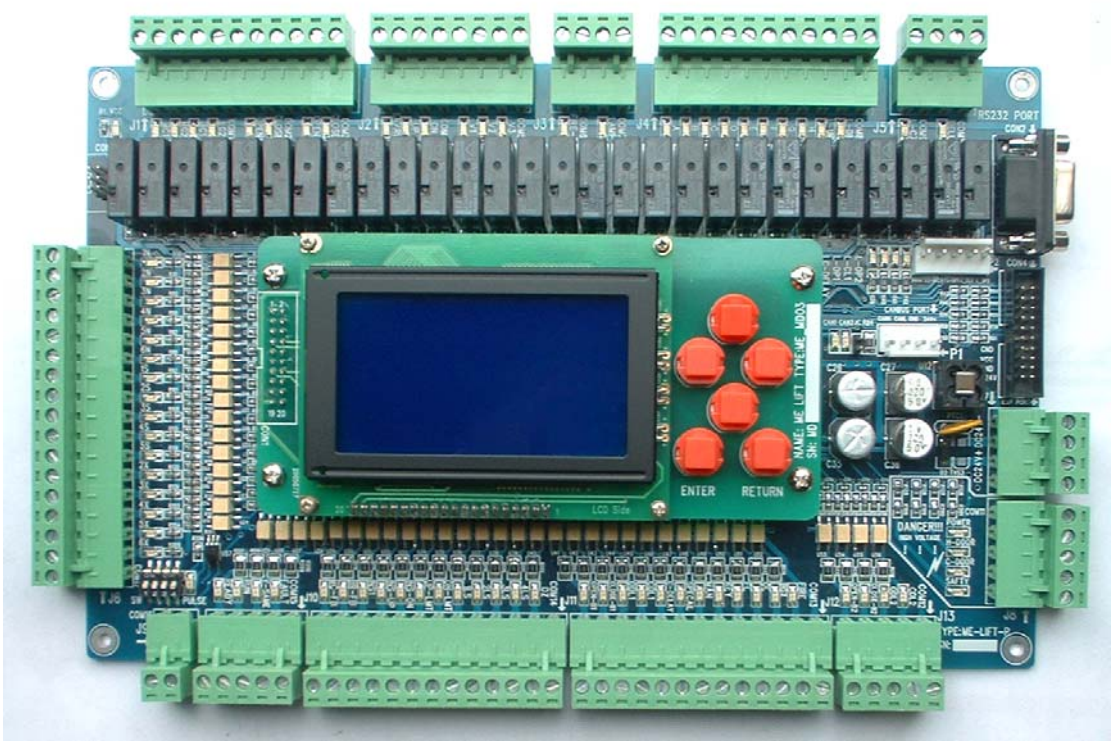
Notice	
Item	Requirements
Place	Indoor
Ambient temperature	0~+40℃
Relative Humidity	5~95%（No fog）
Environment	No direct sunlight, dust, erosive gas, oil fog, steam and drops of water etc. Avoid salty environments. No dramatic temperature drop which might cause fog
Altitude	Less than 1000 meters
Vibration	Vibration range: Less than 3mm（2-9HZ）, 9.8m/s²（9-20HZ）2 m/s²（20-55HZ）, 1 m/s²（55-220HZ）

Please contact us for more information and confirmation before using the equipment in any special environment.

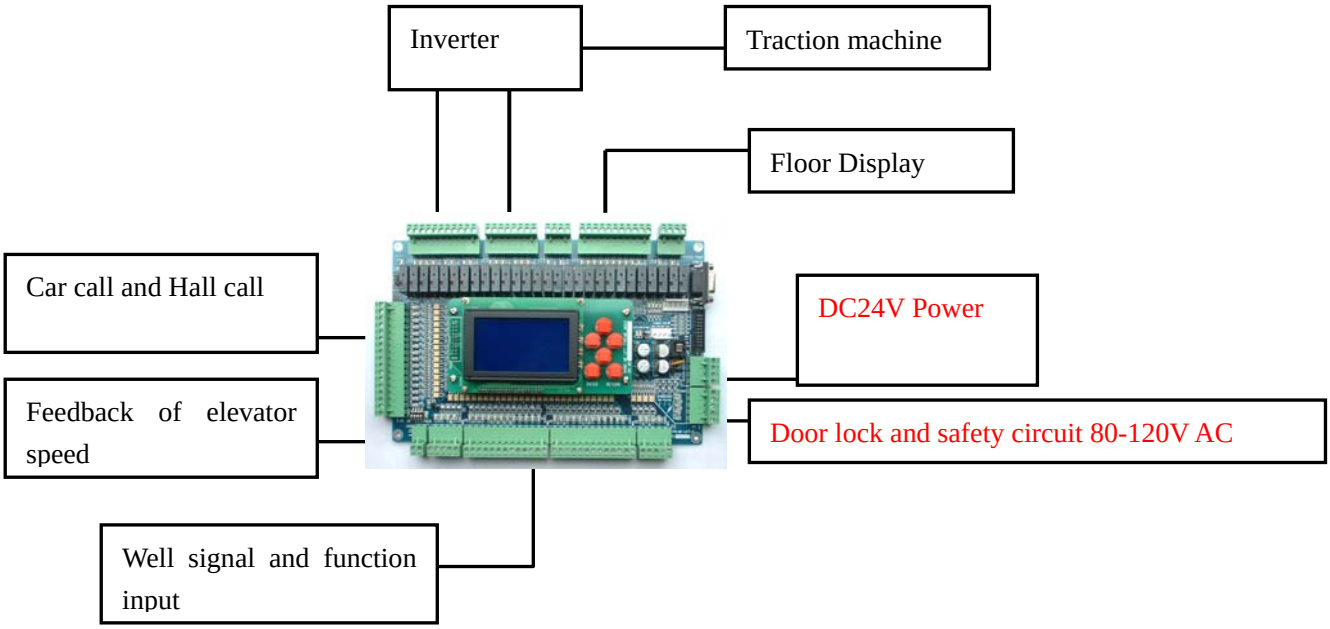
Contents

Section one: Brief introduction of the system

1.1 Appearance of each module



1.2 Structure of the elevator control system

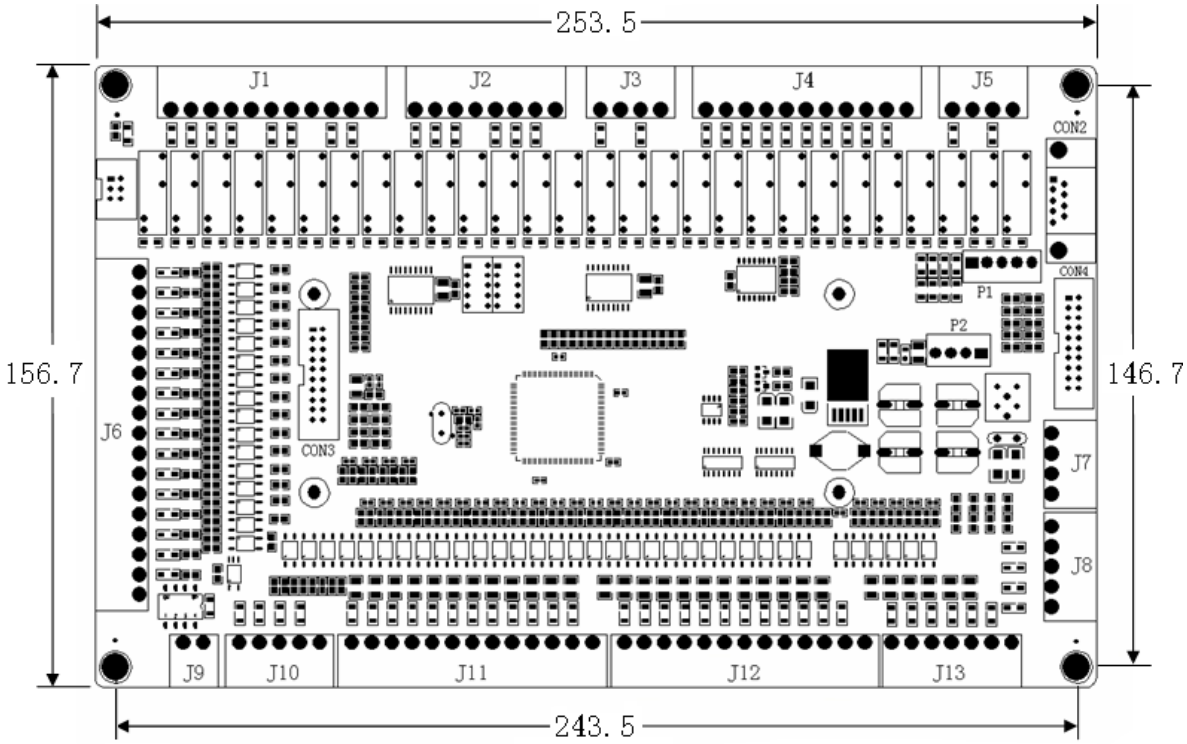


Section 2: Main control device

2.1 Appearance

Appearance and size of main control device ME-LIFT-P:

Size：253.5×156.7（terminals not included） Installation size: 243.5×146.7（mm）



2.2 Introduction of terminals

Available terminals are：J1、J2、J3、J4、J5、J6、J7、J8…..J13。See picture above for their positions.

require that from left to right terminals are numbered in sequence.

For example：J1 terminal，from left to right, they are J1.1、J1.2 …..J1.11, and the rest are numbered in the same way.

J1 terminal: OUTPUT terminal

Terminal	Definition	Note	Technical index
J1.1	MC1	MC1 OUTPUT	Relay output: 5A, 30V DC/250V ACRES
J1.2	MC2	MC2 OUTPUT	
J1.3	BC1	BRAKE1 OUTPUT	
J1.4	BC2	BRAKE2 OUTPUT	
J1.5	COM1	J1.1-J1.4 COM	
J1.6	OPEN1	OPEN DOOR1 OUTPUT	
J1.7	CLOSE1	CLOSE DOOR1 OUTPUT	
J1.8	COM2	J1.6-J1.7 COM	
J1.9	OPEN2	OPEN DOOR2 OUTPUT	
J1.10	CLOSE2	CLOSE DOOR2 OUTPUT	
J1.11	COM3	J1.9-J1.10 COM	

J2 terminal: OUTPUT terminal

Terminal	Definition	Note	Technical index
J2.1	EN/RUN	ENABLE/RUN, TO INVERTER	Relay output: 5A, 30V DC/250V ACRES
J2.2	UP	UP Direction OUTPUT, TO INVERTER	
J2.3	DN	DOWN Direction OUTPUT, TO INVERTER	
J2.4	COM4	J2.1—J2.3 COM	
J2.5	V1	MULTI SPEED 1, TO INVERTER	
J2.6	V2	MULTI SPEED 2, TO INVERTER	
J2.7	V3	MULTI SPEED 3, TO INVERTER	
J2.8	COM5	J2.5-J2.7 COM	

J3 terminal: OUTPUT terminal

Terminal	Definition	Note	Technical index
J3.1	FIRE-R	Fire function OUTPUT to fire system	Relay output: 5A, 30V DC/250V ACRES
J3.2	COM6	J3.1 COM	
J3.3	LAMP	CAR lamp control OUTPUT	
J3.4	COM7	J3.3 COM	

J4terminal: OUTPUT terminal

Terminal	Definition	Note	Technical index
J4.1	A	Floor Display A OUTPUT	Relay output: 5A, 30V DC/250V ACRES
J4.2	B	Floor Display B OUTPUT	
J4.3	C	Floor Display C OUTPUT	
J4.4	D	Floor Display D OUTPUT	
J4.5	E	Floor Display E OUTPUT	
J4.6	F	Floor Display F OUTPUT	
J4.7	G	Floor Display G OUTPUT	
J4.8	H	Floor Display H OUTPUT	
J4.9	L-UP	UP Direction lamp OUTPUT	
J4.10	L-DN	DOWN Direction lamp OUTPUT	
J4.11	COM8	J4.1-J4.10 COM	

Car display support BCD mode, Bin mode, point to point mode, 7seg mode, gray code mode

Point to point Floor display mode as follow:

floor								
	H	G	F	E	D	C	B	A
1	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	1	0
3	0	0	0	0	0	1	0	0
4	0	0	0	0	1	0	0	0
5	0	0	0	1	0	0	0	0
6	0	0	1	0	0	0	0	0
7	0	1	0	0	0	0	0	0
8	1	0	0	0	0	0	0	0

BCD MODE：

floor						
	H	E	D	C	B	A
B8	0	1	1	0	0	0
B7	0	1	0	1	1	1
B6	0	1	0	1	1	0
B5	0	1	0	1	0	1
B4	0	1	0	1	0	0
B3	0	1	0	0	1	1
B2	0	1	0	0	1	0
B1	0	1	0	0	0	1
1	0	0	0	0	0	1
2	0	0	0	0	1	0
3	0	0	0	0	1	1
4	0	0	0	1	0	0
5	0	0	0	1	0	1
6	0	0	0	1	1	0
7	0	0	0	1	1	1
8	0	0	1	0	0	0
9	0	0	1	0	0	1
10	1	0	0	0	0	0
11	1	0	0	0	0	1

J5：OUTPUT

Terminal	Definition	Note	Technical index
J5.1	L-CZ	OVERLOAD LAMP	Relay output: 5A, 30V DC/250V ACRES
J5.2	COM9	J5.1 LAMP	
J5.3	BELL	LANDING BELL	
J5.4	COM10	J5.3COM	

J6:CAR CALL and HALL CALL：

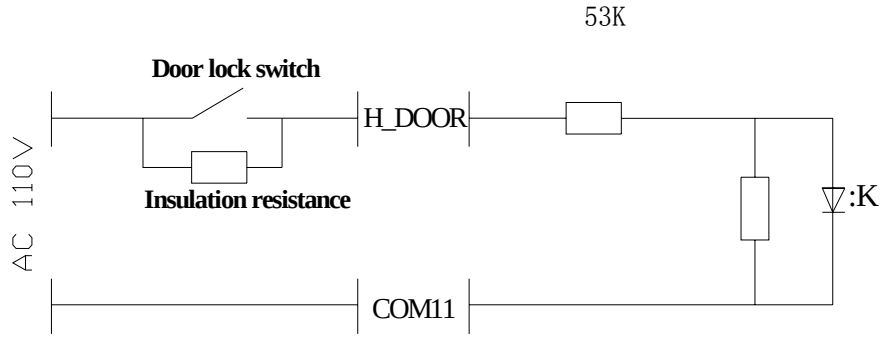
Terminal	Definition	Note	Technical index
J6.1	1N	Floor 1 Car CALL	
J6.2	2N	Floor 2 Car CALL	
J6.3	3N	Floor 3 Car CALL	
J6.4	4N	Floor 4 Car CALL	
J6.5	5N	Floor 5 Car CALL	
J6.6	6N	Floor 6 Car CALL	
J6.7	1S	Floor 1 UP HALL CALL	
J6.8	2S	Floor 2 UP HALL CALL	
J6.9	3S	Floor 3 UP HALL CALL	
J6.10	4S	Floor 4 UP HALL CALL	
J6.11	5S	Floor 5 UP HALL CALL	
J6.12	2X	Floor 2 DOWN HALL CALL	
J6.13	3X	Floor 3 DOWN HALL CALL	
J6.14	4X	Floor 4 DOWN HALL CALL	
J6.15	5X	Floor 5 DOWN HALL CALL	
J6.16	6X	Floor 6 DOWN HALL CALL	
J6.17	COM17	J6.1-J6.16 COM	TO DC24V＋

J7 :POWER

Terminal	Definition	Note	Technical index
J7.1	V-	Power input	Input voltage:DC24V±7.5%;
J7.2	V-	Power input	
J7.3	V+	Power input	
J7.4	V+	Power input	

J8：HIGH VOLTAGE TERMINAL：(AC110V)

Terminal	Definition	Note	Technical index
J8.1	COM11	J8.2-J8.5 COM	ALL AC 110V input
J8.2	POWER	AC 110V POWER INPUT	
J8.3	H-DOOR	HALL DOOR LOCK INPUT	
J8.4	C-DOOR	CAR DOOR LOCK INPUT	
J8.5	SAFTY	SAFTY CIRCUIT LOOP INPUT	



Wiring figure of outer circuit of J8 terminal

NOTICE

Special warnings for J8 terminal:

- Do not connect this terminal to AC220V Power, or the circuit may be damaged
- According to relative standards: Insulation resistance of control circuit shall not be less than 0.25MΩ
- The system requirement: Insulation resistance of safety and door lock circuit shall not be less than 0.1MΩ.
- When insulation resistance is 0.25MΩ, after the door lock breaks, the voltage of examination input terminal and COM11 is (51/(51+250))*110=18V.
- When insulation resistance is 0.1MΩ, after the door lock breaks, the voltage of examination input terminal and COM11 is (51/(51+100))*110=37V.
- When corresponding circuit breaks and the voltage of input terminal is too high, it means the insulation of the circuit does not meet requirements, which would impair the running of the elevator. Please add contactor transfer to corresponding circuit.

J9: pulse input: (FROM INVERTER OR ENCODER)

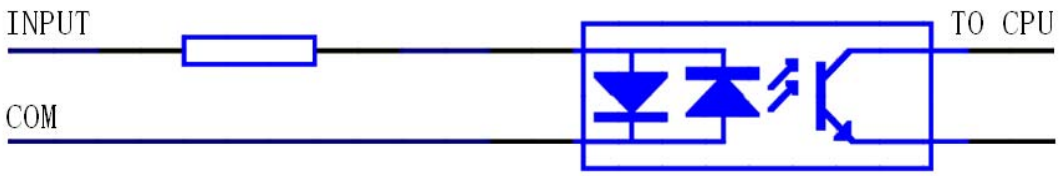
Terminal	Definition	Note	Technical index
J9.1	COM16	J9.2 COM	The voltage of J9.1 must be low than J9.2
J9.2	PULSE	PULSE INPUT	

the voltage of pulse is determined by DIP SWITCH AS FOLLOW:

DIP.1	DIP.2	DIP.3	DIP.4	VOLTAGE
ON				2V
	ON			5V
		ON		12-15V
			ON	24V

J10: SIGNAL FROM INVERTER:

Terminal	Definition	Note	Technical index
J10.1	READY	(Zero speed signal for YASKAWA)	INPUT: DC24V/5mA MAX INPUT: DC48V/10mA
J10.2	RUN	RUNNING SIGNAL	
J10.3	V_SAME	SPEED SAME SIGNAL	
J10.4	FAULT	INVERTER FAULT SIGNAL	
J10.5	COM15	J10.1-J10.4COM	



J11: INPUT SIGNAL:

Terminal	Definition	Note	Technical index
J11.1	MC-FB	MC2 feedback	Rated input voltage: DC24V/5mA Maximum input voltage: DC48V/10mA Input signal turning voltage: DC18.5V When input signal of INS1 and INS2 are different, report failure 8 When input signals are simultaneously effective when they should not be, report failure 13
J11.2	BR-FB	BR feedback	
J11.3	INS1	INSPECTION 1 INPUT	
J11.4	INS-UP	INSPECTION UP INPUT	
J11.5	INS-DN	INSPECTION DOWN INPUT	
J11.6	UP-LMT	UP LIMIT SWITCH INPUT	
J11.7	DN-LMT	DOWN LIMIT SWITCH INPUT	
J11.8	1LS	Up forcing slowdown switch 1 signal (Nearest toterminal landing)	
J11.9	2LS	Up forcing slowdown switch 2 signal	
J11.10	3LS	Down forcing slowdown switch 1 (Nearest toterminal landing) signal	
J11.11	4LS	Down forcing slowdown switch 2 signal	
J11.12	DZ	Door zone signals	
J11.13	COM14	Common signal end of input terminal of switch signals	

J12：INPUT SIGNAL：

Terminal	Definition	Note	Technical index
J12.1	OPEN_B1	Door open button 1	Rated input： DC24V/5ma Maximum input: DC48V/10mA Input signal turning voltage: DC18.5V
J12.2	CLOSE_B1	Door close button 1	
J12.3	ODL1	Open door limit 1	
J12.4	CDL1	Close door limit 1	
J12.5	C-DELAY	Close door Delay input	
J12.6	SPECIAL	VIP SERVICE	
J12.7	MAN	Attendant service	
J12.8	KEY	LOCK THE LIFT SWITCH	
J12.9	FL	FULL LOAD	
J12.10	OL	OVER LOAD	
J12.11	INS2	INSPECTION 2 INPUT	
J12.12	FIRE	FIRE FUNCTION INPUT	
J12.13	COM13	J12.1-J12.12 COM	

J13：INPUT SIGNAL：

Terminal	Definition	Note	Technical index
J13.1	OPEN-B2	Door open button 2	Rated input： DC24V/5ma Maximum input: DC48V/10mA Input signal turning voltage: DC18.5V
J13.2	CLOSE-B2	Door close button 2	
J13.3	ODL2	Open door limit 2	
J13.4	CDL2	Close door limit 2	
J13.5	FC1	MUILTI INPUT 1	
J13.6	FC2	MUILTI INPUT 2	
J13.7	COM12	J13.1-J13.6 COM	

CON3：CONNECT TO LCD OPERATER

CON4：used to expend call floor to 11(use one expend board) OR 17 (use two expend boards)

P1：lamp of open door and close door

Terminal	Definition	Note	Technical index
P1.1	24V+	DC 24V +	
P1.2	LC-DELAY	CLOSE DOOR DELAY LAMP	
P1.3	L-OP1	OPEN DOOR 1 LAMP	
P1.4	L-CL1	CLOSE DOOR 1 LAMP	
P1.5	L-OP2	OPEN DOOR 2 AND CLOSE DOOR 2 LAMP	

注：

P2：CANBUS

Terminal	Definition	Note	Technical index
P2.1	CANH	CANBUS H	
P2.2	CANL	CANBUS L	
P2.3	GND	GND	
P2.4	24V+	DC24V+	

NOTE：P2 CANBUS PORT NOT USED NOW!

Section 3 : System function

3.1 Major functions of ME-LIFT-P elevator control system

1. Inspection operation mode

When the **inspection** switch in the car or machine room is at **inspection** position, press UP/DOWN button and the elevator will run at **inspection** speed. It runs only when the button is pressed. Press button incessantly and the elevator will run. It will stop when the button is released. Similarly, when inspecting, door opening and closing button function is in the same way.

2. Floor memory learning automatically

Attention: adjustment operator should not leave machine room during elevator auto-learning process.

Attention: Before the auto-learning, make sure the data in the basic parameters are correct and outer circuits are functioning normally.

The process of auto-learning should be performed and ended manually. Operation is carried out by menu and it can be stopped anytime in the course of **Auto-**learning

If the car is not at the base floor when the auto learningstarts through menu, it will go down to the base floor automatically. Then the elevator run upwards. When it arrives the door zone of top floor, it will stop automatically. Press ENTER again, the auto-learning process ends. **The system will save the learning data. after about 10 seconds ,Take off the power switch, after about another 10 seconds ,the elevator can be powered up again.**

During auto-learning, floor and number of input pulses can be read form the LCD display. If the auto-learning fails, it will quit the process and shows “auto-learning failed”. It will also show auto-learning succeeds” if the process is successfully completed.

3. Collective control mode

In automation or attendant control mode, the elevator will automatically collect the car instruction and hall instruction , control the car running, cancel the instructions that have been served. Passengers at every floor can call the elevator by pressing up or down button.

4. Attendant operation mode

Through switch in the operation box, attendant control operation can be selected. Under this mode, the elevator has functions as follows:

A. Do not automatically close the door (the door will close when attendant presses close button.)

5. Firemen operation

This function can be categorized to two different situations:

1. Return back to fire main floor function

Description: as soon as the fire switch is on, the elevator will cancel all call signals, slow down and stop at a nearest floor without opening the door. Then it will go back to fire main floor immediately and open the door.

This is the most basic fire function, which is supported by all version of software.

2. Fire service function

Description: after the fireman switch has been on and the elevator comes back to fire mainfloor, it will run in firemen operation mode. in this mode, the elevator will not answer hall call and only answer one internal instruction at a time.

The operation of elevator door is as below: when the elevator is not at fire main floor, the door will not open when it stops; press the door opening button and the door will open; If you release the button when the door is not fully open, the door will automatically close at once. The door will stay at opening status when it is fully open. The door also should be closed manually. Press the closing button, the door will close; when it is not fully closed, and the closing button is released, it will open again.

Attention: This function is effective only when the option of "Fire activation" in the menu is "yes".

Attention: Fire mode's requirements for elevator are very strict. for example: the fireproofing quality of the door.

If the elevator is not Fire elevator, do not activate this function. Our company is not responsible for any of the results caused by this action.

6. Special service mode(VIP):

In this mode, the elevator will not answer hall call, and the door will not close automatically. Only one car internal instruction is answered. Other operation methods for special service run are similar to attendant operation.

7. Jog to the nearest floor after failure

When the elevator gets back to normal status after a failure ,and the failure is not a safety one, it will jog slowly to the nearest floor if there is a car or hall call.

Attention: After the elevator adjustment has been finished, do adjust the elevator inspection running speed to <0.3m/s, otherwise the elevator may not be able to find the door zone because of too fast speed .

8. Automatically open door when landing

In automation or attendant mode, after the elevator slows down and the car stops at a floor, it will open the door automatically if it is in the door zone.

9. Open door when car instruction button of this floor is pressed

When the elevator stops in the door zone of certain floor, it will open the door when the car instruction button of this floor is pressed

10. Door open responding to hall call of the local floor

When hall call button of local floor has been pressed, and the elevator has no running direction, or the running direction is the same with that of hall call, the elevator is not full loaded,door will open automatically if the elevator is at the door zone and in a stop state. If .the button will not be released, door remains open.

11. Close the door earlier if door close button is pressed

In the automatic mode, when the door is fully open, press door close button, it will answer immediately and close the door in advance, except the first door open after the elevator run stop.

12. Door open button to open the door

When the elevator is not running and stops at the door zone and the door is still or in the process of closing, press door open button, it will immediately execute the door opening command.

13. Reopen the door at reopen signals

When door safety edges of door or screen detector is acting, or the door is not closed completely in certain time, the door will reopen unconditionally.

14. Door open or not close when over loading

When over loading, the elevator will not close the door, or will open the door if it has been closed. At the same time, the buzzer for overload will keep buzzing.

15. Door open or close only when the button is pressed

In inspection mode, door open or close **only when** the button is pressed. When the door opening or closing button is pressed, the door will open or close; the action will stop as soon as the button is released.

16. External call of this floor can decide the direction of the elevator when it has no direction

When the elevator stops at a certain floor without **direction**, **External call of this floor can decide the direction of the elevator.**

17. Farthest call decide the direction of the elevator

The elevator answers the farthest external call, slows down and stops, Then the running direction of the elevator is consistent with the direction of external call until the door close, even there is no other instructions.

Before the door closes, the direction of elevator is determined by the farthest external call. The time from the elevator stopping to the door is closed is called pre-direction time.

18. Direct running for full loading

In automation mode, when overload the elevator will answer internal calls only, ignoring external calls.

19. Bell chime

During the slowdown and leveling process, the bell chime on the top or bottom of the car will ring to remind the passengers inside or those waiting outside that the elevator is leveling.

20. Automatically switch off illumination and fans during waiting

If there is no instructions in a certain period of time set by menu, illumination and fans will be switched off. As soon as the elevator receives instruction, they will be switched on and put to use,(need to add relay).

Attention: time can be set through the 13th option “illumination off delay in the car” in time parameter menu.

21. Automatically return to main floor

In automation mode ,when the function of automatically return to main landing is effective, the elevator will return to landing floor if there is no demand or external call registration in a certain period of time set by menu.

Attention: this function is activated when the 4th option of the control parameter menu "automatically return to main floor" is set as "YES".

Attention: the time is set by the 12th option of time parameter menu "time of returning to main floor"

22. Adjustment of leveling accuracy

If discrepancy of leveling within 100 mm occurs at certain floor, it can be remedied by setting leveling compensation through the menu, to ensure a precise leveling.

For example: a building of five floors, if discrepancy of going up 5 floor is ＋50mm (i.e. the car is 50mm higher), and the discrepancy of going down 5 floor is －30mm(i.e. the car is 30mm lower),then in the menu up compensation value for 5 floor is set as＋50mm, 5 floor down compensation value is set as －30mm.

23. Set service floor freely

Through LCD operator you can set which floors to stop and which floors to pass by freely

24. Record failure history

The system can record 100 failures code that occurred recently, including failure code.

5-4

25. Verify floor position signal automatically

Every time the elevator gets to terminal landing floor, the system will automatically **verify** signals of floor position.

26. Fire emergency return travel

When fire switch is on, the elevator will cancel all internal or external instructions and go back to fire main floor directly.

27. Firemen operation

Exclusive status for firemen.

This function is for fire elevator only. Activation of this function is forbidden if the elevator is not special fire elevator.

28. Anti-troublemaking when light loading

When the elevator is light loading, and there are more than three internal calls have been registered, it will cancel all internal instructions.

Attention: to activate this function, set the 5th option of the control parameter menu "anti-troublemaking" as "YES"

29. Elevator overtravel protection

If the elevator can't slow down normally and cannot stop after it arrives at the predeterminec floor, then the elevator will jog to the next floor and stop.

30. Speed monitor at terminal landings

At the terminal landing floor, the system will automatically control the speed to avoid rushing the roof or bumping to the pit.

31. Inspection and protection of the main contactor and brake contactor

The system will inspect whether the main contactor and **brake** contactor is functioning reliably. If the status of the contacting point and coil is different, it will stop all the function of the car until the main board is powered up again and repositioned.

32. Protection against failure of inverter

When system detects failure of inverter, it will take action to protect against it. The elevator will stop running and at the same time the main board will try to reset inverter. If the inverter has been reset, and works normally again, then the elevator will continue to run normally.

33. Group control mode

Group control means centralized control of several elevators. The system is capable of group controlling for 2 elevators. In the group control system, several elevators work coordinately to answer the hall call in the fastest speed and most efficient method, reducing the time passengers wait and the energyspend.

34. Lock the elevator

In automation operation mode , if the elevator lock switch is off, then the elevator will cancel all hall calling instructions. It will still work normally, and only execute demands in the car until there is no demand anymore. Then it will go back to main floor. After the door open, the illumination, electric fans will be switch off. The door-opening light will turn on. 10 seconds of detention latter, the door will shut automatically, and the elevator stops running, then turn off illumination and fans in the car after delaying time to light off. Only after the elevator lock switch is reset will the elevator start to work normally again.

35. LCD screen shows status, speed, direction and floor of elevator

LCD operation board displays the status, speed, direction and floor of the elevator. Moreover, through LCD operation board, you can set parameters and checks the record of failures etc.

36. Watch dog protection of the main machine

There is watch dog protection function on the main control board. When CPU fails or the program is functioning abnormally, WDT circuit will force the main control device CPU to reset to former status.

37. Remember position of elevator after power off

If the power cuts off when the elevator is running or standing, the main board will save current position and floor of the car. When it is powered up again, the elevator will use these saved information to avoid errs.

38. Count the times of elevator trip

The main board can record trip times of the elevator. This record will not be lost when the power is off. The times of tripshow at the LCD of main board and in the main interface menu.

39. Anti-block function of the buttons

If any UP or DOWN button of external call board, selection buttons or door open/close button in the car is blocked, the system will identify this problem and the pertinent button will be inactive until it works normally again.

40. Suitable for double door system

Satisfy the demand for double door elevator control, meeting the requirements of elevator door system in Hong Kong.

41. Conveniently set the door opening or closing method

For double door system, door opening and closing method can be set respectively at each floor through menu of main .board.

42. Display at each floor can be set freely

Display of floors can be set at will through menu.

For example: display content at each floor can be set freely and conveniently. It can run through 4, 13 and 18 floor without indicating the floor.

Underground floor can be shown as -1, -2.

43. High light LCD display panel in the car（Optional）

Optional high light LCD display panel in the car, enhancing the appearance of the whole elevator.

44. Voice announcement at arrival (Optional)

Car control board can be connected with a voice announcer at arrival (optional).

If the system is equipped with this function, voice announcer will announce the arriving floor every time when it is leveling; Every time before the door closes, voice announcer will announce the direction it is going etc.

Section 4: Parameter setting

ME-LIFT-P elevator control system provides mighty and convenient setting parameters function.

Through LCD display module and 6 keys users can easily set parameters concerning elevator running, carry out floor memory learning, check the failure history record etc.

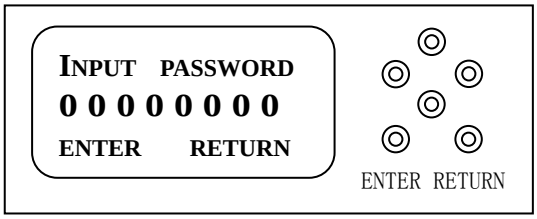
The system adopts hierarchy menu. The LCD display is 128X64 dot matrix, which can display Chinese character, English and numbers.

The six keys are: UP, DOWN, LEFT, RIGHT, ENTER，RETURN

ENTER is a key with multiple function. Its function corresponds to the tips at the left-down corner of the interface.

RETURN is the key for going back. Its function corresponds to the tips at the right-down corner of the interface.

The LCD display and the positions of the keys are as follows:



4.1 Structure of the menu

4.1.1 Main page of the menu

4.1.2 Different levels of menu

Main menu

No.	Name of menu	Note
1	Basic Parameter	
2	Control parameter	
3	Slowdown distance	
4	Time parameter	
5	Input setting	
6	Set landing floor	
7	Floor display	
8	Leveling compensation	
9	Call setting	
10	Door open method	
11	Failure records	
12	Floor memory learning	
13	Language	
14	About	

4.1.2.1 Basic parameter menu

No.	Menu name	Note
1	Inverter type	Choose the type of inverter
2	Door operator	Choose the type of door operator PLEASE CHOSE 1
3	Speed segment number	The number of normal speed segments output
4	Start valve speed	(Speed valve value to judge whether the elevator is activated normally) NOT USED
5	S point speed	Spare NOT USED
6	Inspection speed	Speed value of inspection running
7	Running speed 1	Speed 1 of fast running
8	Running speed 2	Speed 2 of fast running（effective when number of speed segment>2）
9	Running speed 3	Speed 3 of fast running（effective when number of speed segment>3）
10	Running speed 4	Speed 4 of fast running（effective when number of speed segment>4）
11	Diameter of traction sheave	Diameter of traction sheave
12	Traction machine Speed ratio	deceleration ratio of traction machine×traction ratio
13	Encoder RPM	Actual pulse value of encoder
14	Frequency division ratio	The same with frequency division rate of inverter
15	Highest landing floor	Actual highest floor of the elevator（automatically written in after auto-learning）
16	Lowest landing floor	Actual lowest landing floorof the elevator (range: B8-63)
17	Main landing floor	The floor that elevator goes back to while waiting (range: B8-64)
18	Elevator lock mainfloor	The floor that elevator lands after locking (range: B8-64)
19	Fire main floor	returning to the main floor at fire (range: B8-64)

4.1.2.2 Control parameter menu

No.	Menu name	Note
1	Control mode	Choose the running mode of the elevator
2	Group control mode	
3	Monitor function	Not used
4	Automatically return to main floor	Decide whether the automatically main floor returning function is ON or OFF
5	Anti troublemaking	Decide whether the anti troublemaking function of the elevator is ON or OFF
6	Fire function activation	Decide whether the fire function running is ON or OFF
7	Internal call signal elimination	Decide whether the function internal call signal elimination after double clicks is ON or OFF
8	Group elevators ID	Set the ID number of each elevator (must be different) when group control
9	Monitor ID	
10	Main board elevator activations	Equivalent to elevator key signal of external call board. It will be lost after power off
11	Arrow lash	When it is set to" yes" the direction flash when lift is running
12	FC1 INPUT SELECT	
13	FC2 INPUT SELECT	
14	INPUT FILTER	
15	TEST RUNNING	

4.1.2.3 Slowdown distance menu

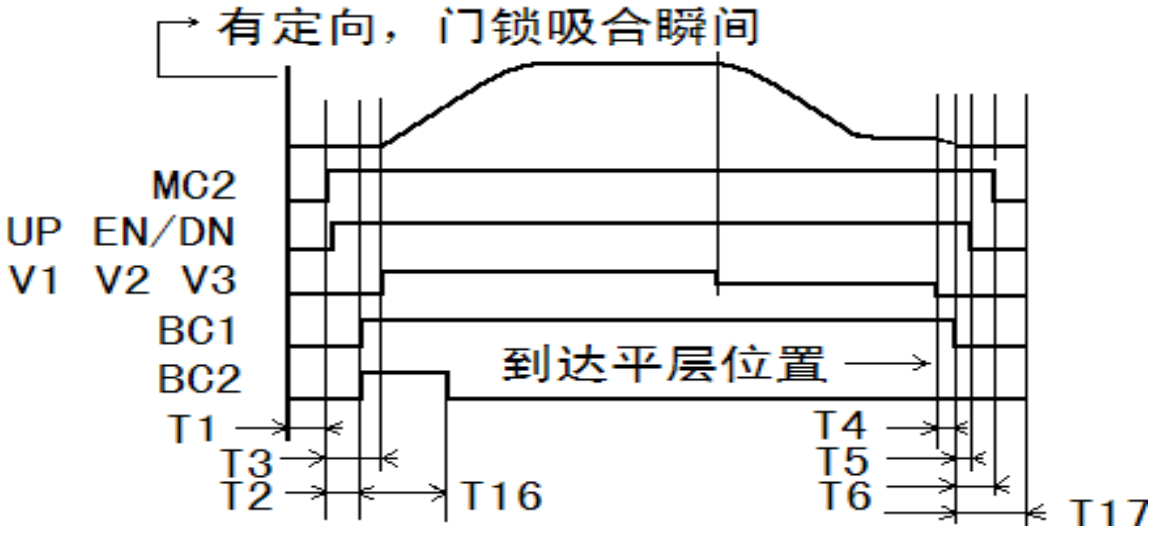
No.	Menu name	Note
1	Slowdown distance 1	Slowdown distance corresponding to running speed 1
2	Slowdown distance 2	Slowdown distance corresponding to running speed 2
3	Slowdown distance 3	Slowdown distance corresponding to running speed 3
4	Slowdown distance 4	Slowdown distance corresponding to running speed 4

4.1.2.4 Time parameter menu

No.	Menu name	Code	Value	Note
1	Door close delay 1	T1	3s	After the door is open, standard time for the elevator to remain the state of door opening.
2	Door close delay 2	T2	10s	After the door is open, the time for the elevator to remain the state of door opening without obstacles.
3	Time limit of open door and close door	T3	8s	Max Time limit of open door and close door
4	MC2 operate delay	T4	0.50s	When there is vibration during door closing, set this time parameter to avoid the vibration of MC2 contactor
5	BC1 operate delay	T5	0.50s	The time starts from MC2 operates. When "RUN" signal is effective, main board will make BC1 to operate.
6	Speed output delay	T6	0.70s	The time starts from MC2 operates. When time is up, main board will send signal of speed segment to inverter
7	BC1 release delay	T7	0.65s	In the time set by this parameter after the elevator arrives at leveling and the speed segments output is cancelled, the system will make BC1 release.

8	MC2 release delay	T8	0.70s	To define the length of time after C1 is released to cancel MC2 output.
9	Time of returning to main floor	T9	150s	The door is closed. When the elevator waits for this period of time, it will automatically return to the set “main floor”.
10	Illumination delay in car	T10	150s	The door is closed. When the elevator waits for this period of time, the illumination in the car will be switched off.
11	Maximum running time	T11	45s	
12	Forced door close time	T12	2s	In the time set by this parameter after the door closes, the door lock is connected and the door is effectively closes, but the door closing signal is still effective. When the door operator system display bouncing back action after it closes, extend this time.
13	Door open extension	T13	300s	It is used when there is a lot of cargo coming in and out. Press this door open extension button and the door will automatically close after the time set by this parameter. The door can be closed manually.
14	BC2 release delay	T14	2s	After BC2 and BC1 operates, when the time set by this parameter is due, and feedback signal BR_FB of brake contactor opening is effective, the system will make BC2 release, and the resistance of brake circuit will be short connected.
15	VF stop delay	T15	0.30s	In the time set by this parameter after BC1 releases，direction and activation is cancelled. This time should be adjusted according to brake electrical system release time to prevent the elevator from sliding back.
16	VF restoring time	T16	12s	This is the period of time during which inverter is without electricity after the safety circuit breaks and the inverter fails. Some inverter cannot restore effectively if the time without electricity is too short. This time is the time the system keeps the elevator wait after the inverter is powered on to give the inverter enough time to be powered up.

Time schedule of output signals：



有定向：With orientation, at the moment the door lock closes
达到平层位置: Arriving at leveling position

4.1.2.5 Input setting menu

No.	Menu name	Value	Note
1	1. READY	H ●	Each input port can be set as effective at "H" or "L" When corresponding input is effective, the terminal will display●. When it is set as "H": If indicator light of corresponding input port is on, the signal of this port is effective; ● If indicator light of corresponding input port is off, the signal of this port is ineffective; When it is set as "L": If indicator light of corresponding input port is on, the signal of this port is ineffective; If indicator light of corresponding input port is off, the signal of this port is effective; ● For example： The door zone signals： When the elevator is at the door zone, the door zone signal is effective. Circumstance 1： when the elevator is at the door zone: Door zone switch is disconnected, and indicator light of the DZ port of the main board is off; In this circumstance, DZ input should be set as "L". Circumstance 2: when the elevator is at the door zone: Door zone switch is connected, and indicator light of the DZ port of the main board is on; when the elevator is not at the door zone: Door zone switch is disconnected, and indicator light of the DZ port of the main board is on; In this circumstance, DZ input should be set as "H"
2	2. RUN	H	
3	3. V_SAME	H	
4	4. FAULT	L ●	
5	5. MC_FB	L	
6	6. BR_FB		
7	7. INS1		
8	8. NS_UP		
9	9. INS_DOWN		
10	10. UP_LMT		
11	11. DN_LMT		
12	12. LS1		
13	13. LS2		
14	14. LS3		
15	15. LS4		
16	16. DZ		
17	17. OPEN_B1		
18	18. CLOSE_B1		
19	19. ODL1		
20	20. CDL1		
21	21. C_DELAY		
22	22. SPECIAL		
23	23. MAN		
24	24. KEY		
25	25. FL		
26	26. OL		
27	27. INS2		
28	28. FIRE		
29	29. OPEN_B2		
30	30. CLOSE_B2		
31	31. ODL2		
32	32. CDL2		
33	33. FC1		
34	34. FC2		
35	35. SAFTY		
36	36. C_DOOR		
37	37. H_DOOR		
38	38. POWER		

4.1.2.6 Setting landing floor

Floor	Setting	Note
Floor B8	ON	Landing floorcan only be set after floor memory learning automatically The floors that permits elevator landing are set as “ON” The floors that does not permits elevator landing are set as “OFF”
……		
Floor 1	ON	
Floor 2	ON	
……		
Floor17	ON	

6-6

4.1.2.7 Floor Display setting

Floor	Setting	Note
Floor B8	-8	
. .		
Floor 1	1	
Floor 2	2	
. .		
Floor 17	17	

4.1.2.8 Leveling compensation

Floor	Setting	Note
Floor B8 upwards Floor B8 downwards	0mm -15mm	Leveling accuracy can be adjusted through menu to get an very exact leveling accuracy. Positive and negative of data: When the car is higher than the floor, the data is positive; when the car is lower it is negative. For example： Running upwards to floor 1, the elevator is 3mm lower than the floor; Running downwards to floor 1, it is 38mm higher than the floor. Then set the parameter like this: Set: floor 1 upwards –3mm Floor 1 downwards 38mm After this setting, the elevator can level correctly. If the measurement is inaccurate, or the settings of inverter have been changed, then the leveling of elevator is inaccurate again. It can be adjusted in this way: If running upwards to floor 1, the elevator is 2mm higher than the floor, and running downwards, it is 5mm lower than the floor. Then add this measurement valve to the number set before, then the result is the number to be set. Set: Floor 1 upwards –3+2=-1mm Floor 1 downwards 38+(-5)=33mm
. .		
Floor1 upwards Floor1 downwards	－1mm 33mm	
. .		
Floor17 upwards Floor64 downwards	-40mm -10mm	

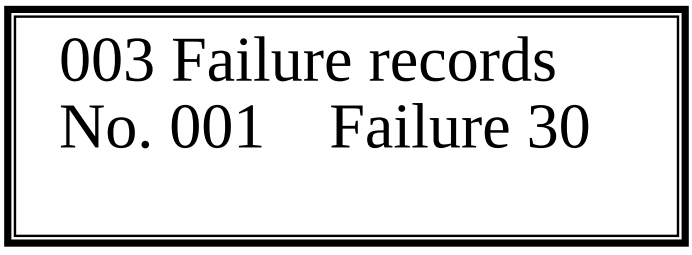
4.1.2.9 Call setting

Floor	Status and setting	Note
Floor B7	ON	If there is internal choice and hall call signal for correspondence floor, then it will display “ON”, otherwise display “OFF”. When the floor where the cursor is pointing to shows “OFF”, press ENTER key, and it will change to “ON”. Then main board call answering signal will be activated and the elevator will answer the signal. This method is called main board call. Use of main board call: During the adjustment and testing, Set the elevator as “exclusive usage” through the “control parameters” in the main board menu. Call the elevator through the main board and the elevator won’t have to open the door when it stops. By this way, adjustment and testing process can be performed more efficiently, since there is less disturbance.
. .		
Floor 1	OFF	
Floor 2	OFF	
Floor 3	ON	
. .		
Floor 17	OFF	

4.1.2.10 Door open method

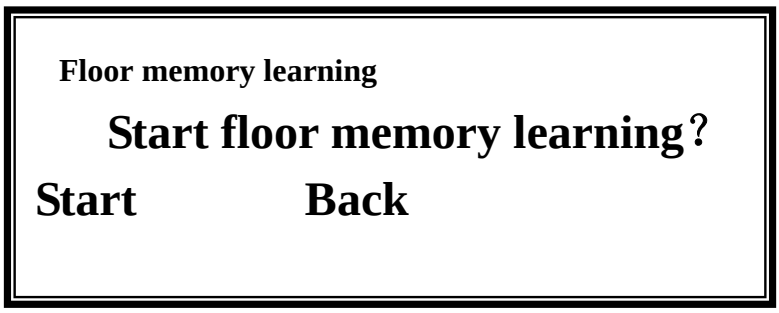
Floor	Door open method	Note
Floor B8	A	Door open method can be set independently at each floor: For example, the setting at the left : When the elevator arrives at floor “B8”, open A door When the elevator arrives at floor “1”, open B door When the elevator arrives at floor “2”, open A door first. After A door is closed, then open B door. When the elevator arrives at floor “3”, door A and B open and close simultaneously.
. .		
Floor 1	B	
Floor 2	AB	
Floor 3	DD	
. .		
Floor 64	B	

4.1.2.11 Failure records



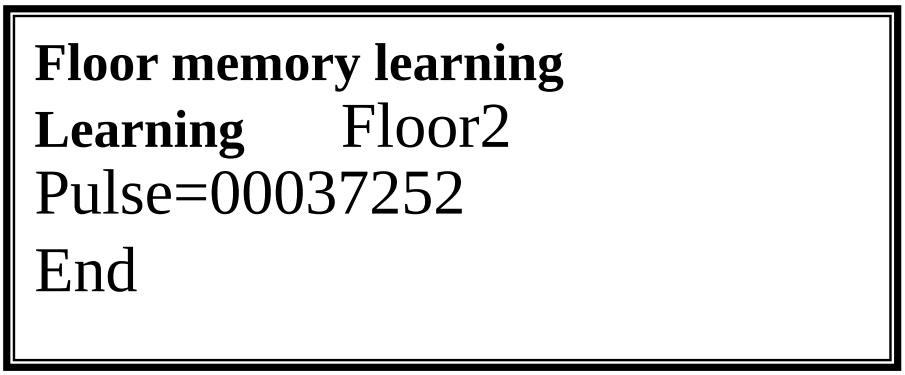
When a failure occurs, the control system will automatically inspect and judge the type of failure, and save the information with the time the failure occurs for later inquiry by maintenance personnel. It can save 100 records of failure at most. Press UP or DOWN to turn over the pages of records of failure history.

4.1.2.12 Floor memory learning



At this interface, Press ENTER (Start), the elevator begins floor memory learning automatically. The interface changes to as follows:

6-8



While floor memory learning, the elevator will be sent back to the lowest floor first. Then it will run to the top floor. The learning process will end automatically. The elevator runs at inspection speed during the learning process.

If failure occurs during the learning, press ENTER to end the process.

There will be corresponding tips if the learning succeeds or fails. Pulse is the data got from the lowest floor.

After the learning ends, the data is all the pulse data got from bottom floor to the top floor.

4.1.2.13 Language

There are Chinese and English menu. Use this option to select the language, Chinese or English.

4.1.2.14 About the system

4.1.2.15 System time

Through this setting the system time can be adjusted. System time will be utilized while recording failures.

When the system is powered off, the system clock is maintained by batteries. If the batteries voltage is low, the time will be incorrect. So please change the batteries in time. The standard life span of battery is two years. The battery has certain shelf life. Our warranty of battery is: one year after leaving the factory.

Section 5 Common failures and methods to deal with them

ME-LIFT-P system is able to automatically judge whether the system failed or not. If there is a failure, it will automatically record and save the failure code for latter reference by maintenance personnel. Understanding the meaning of these failures and knowing how to deal with them is very helpful for adjustment on site. ME-LIFT-P system will record 100 failures that occur recently. If the records are full, then new records will replace old ones.

Note： when a failure occurs, the code of failure will show at main menu for the convenience of checking the failures occurred before.

5.1 Failure code and the failure name it represents

See following chart:

Failure code	Failure name	Methods to deal with it
00	Main contactor operation failure	Power off and restore
01	Main contactor release failure	Power off and restore
02	Brake contactor operation failure	Power off and restore
03	Brake contactor releases failure	Power off and restore
04	Inverter failure	Restore automatically
05	Inverter starting failure	Restore automatically
06	Speed lost during running	Power off and restore
07	Scraping door lock during running	Restore after door lock functions normally
08	Failure of inspection signal circuit	Power off and restore
09	PG failure	Power off and restore
10	Door zone lost during running	Restore after door zone is normal
11	Safety circuit breaks while stopping	Restore after safety circuit functions normally
12	（not defined at present）	
13	Failure of input port	Power off and restore
14	Over time running	Power off and restore
15	Safety circuit breaks while running	Restore after safety circuit functions normally
16	**door opening limit switch** failure of door A	Report the failure without stop running
17	**door closing limit switch failure** of door A	Report the failure without stop running
18	Door opening failure of door A	Restore after normal door opening
19	Door closing failure of door A	Restore after normal door closing
20	Short connection of door lock	Restore after normal door opening and closing
21	Short connection of hall door lock	Restore after normal door opening and closing
22	Poor contact of door lock	Manually adjustment of door lock
23	Poor contact of hall door lock	Manually adjustment of door lock
24	**door opening limit switch** failure of door B	Report the failure without stop running

Failure code	Failure name	Methods to deal with it 7-1
25	**door closing limit switch failure** of door B	Report the failure without stop running
26	Door opening failure of door B	Restore after normal door opening
27	Door closing failure of door B	Restore after normal door closing
28	（not defined at present）	
29	（not defined at present）	
30	Slowdown failure at leveling	Report the failure without stop running
31	lose door zone signal arriving at leveling position	Restore after door zone is normal

5.2 Detailed introduction of Trouble

Here we explain the possible course of each failure.。There maybe one or multiple reasons for a single failure. Now we explain possible reasons that may result in the failure, but the real reasons causing the failures should be determined by inspection personnel basing on analysis of the situation on site.

Trouble_00: Main contactor operates failure

Two seconds after main board sending out the demanding signal for main contactor to operate，if it has not received feedback signals indicating that main contactor operates, then the system regards failure of main contactor operate occurs，and it will record the failure, cancel all output control demand and stop the elevators.

Possible causes: coil circuit of main contactor or feedback circuit breaks, input voltage is too low, main contactor is blocked and cannot operate, feedback point of main contactor is fiercely interfered or the connection is not good.

Trouble_01 :Main contactor releases failure

Two seconds after main board sending out the demand of main contactor release，if there is still no feedback signals indicating that main contactor releases, then the system regards a failure of main contactor release occur, and it will record the failure and stop the elevators.

Possible causes: short connection of circuit of main contactor loop or feedback loop; input voltage is too low; main contactor is blocked and would not release; feedback point of main contactor is fiercely interfered or the connection is not good.

Trouble_02: Brake contactor operates failure

While the elevator is running, BC-FB does not become “ON” in scheduled time, then this failure will be reported.

Trouble_03 :Brake contactor releases failure

While the elevator is running, BC-FB does not become “OFF” in scheduled time, then this failure will be reported.

Trouble_04: Inverter failure

When the control device receives failure signals from inverter, this failure will be reported. The system will stop the elevators and forbid restarting. Main board will cut off the power of inverter

and try to restore it. If there is still failure after 3 times, then the system will forbid restarting.

Trouble_05: Inverter starting failure

Main board has sent out signals to inverter, however it does not receives RUN feedback signals from inverter. Then it regards the inverter starting failure occurs, and it will stop the elevator and try to start again. If the elevator would not start again 8 times continuously, it will stop running.

Possible causes: RUN signal failure of inverter, too low about input voltage or break of the controlling line from main board to inverter.

Trouble_06: Speed lost during running

The elevator is running at a certain speed, however, through calculation based on basic parameters and PG feedback pulse, the main board figures out that the speed is comparatively slow. So it regards a failure of speed lost occurs and identify the failure. The elevator would then run at inspection speed and the main board will slow the elevator down until it stops at the door zone and forbid it from restarting.

Possible causes: break of pulse signal line from inverter to main board, wrong wiring of feedback port of pulse signal, motor does not work or inappropriate setting of basic parameters (too fast of the start or stop speed).

Trouble_07: Scraping door lock during running.

If the elevator scrapes door lock during running, the main board will notice it and stop the elevator. After the door lock circuit is closed again, the failure will be eliminate. The elevator will work normally again, but the failure records will remember the failure.

Possible cause: Connection of door lock is not good, false connection of door lock circuit or door vane scraps door lock etc. .

Trouble_08: inspection signal circuit failure

According to standard (14.1.2.3 and 14.1.2.1.1 b), elevator inspection operation can be carried out by the methods of safety circuit. Safety circuit is based on redundant design, with at lest two return circuits are used, disregarding the possibility of simultaneous failure of these two circuits. When the first failure occurs, the main board should stop the elevator. So, two lines of examination signal are connected to the main board. When they are inconsistent, it means something is wrong in either circuit. Then the main board will mark this failure and stops the elevator.

Possible cause: one of the two lines of inspection signals is broken or the connection is not good; input voltage is too low; or one of the two inspection loops of the control device is damaged.

Trouble_09: PG failure

After the elevator starts normally, if during the running, there is no pulse signals received, then it is regarded that PG failure occurs. The elevator would run at inspection speed instead, and slowdown and stop at door zone. It is forbidden to run again.

Possible cause: feedback line of pulse signal is broken or the connection is not good; or the dial switch of main board is set at the wrong position.

Trouble_10 :Door zone failure

When The elevator is in fast running and if it is at the leveling position during well floor memory learning, and it does not receive door zone signals, the main board will regard a door zone

signals failure occurs. It will report the failure. If it can receive door zone signal again, the failure will be eliminated.

7-3

Possible cause: too low input voltage, the position of light block board is not right; or the door photo-electronic device fails.

Trouble_11: Break of safety circuit while stopping

When the elevator is stopping, if the safety circuit breaks, the elevator will report this failure. After the safety circuit recovers and the failure is eliminated, the elevator can run normally again.

Trouble_12 :Not defined yet.

Trouble_13: I/O terminal failure

When two signals are effective at the same time, which is impossible in normal situation; for example, upper or lower limits signals received at the same time, or upper and lower emergency slowdown signals received at the same time, then the main board will regard that a failure occurs at the I0 terminal. It will mark the failure out, stop the elevator and forbid restarting. After the failure is eliminated, the elevator will continue to run normally again.

Possible cause: Outer switch fails, wrong setting of control device parameters, too low about input voltage.

Trouble_14: Overtime running

When the elevator is running normally, if the time of elevator to finish one trip exceeds what is required, door zone signals have no changes, then main board stops the elevator directly and forbids restarting.

Trouble_15 :Safety circuit breaks during running

While the elevator is running, if the safety circuit breaks, this failure will be reported. After the safety circuit recovers, the failure is eliminated and the elevator will run normally.

Trouble_16 : door opening limit switch failure of door A

While the door operator1 is closing elevator door, and there is door lock signal after the door has been closed. If at this time there is still **door opening limit switch** signal, then the main board regards a **door opening limit switch failure** occurs at door A.

Trouble_17 : door closing limit switch failure of door A

While the door operator1 is opening elevator door, there is no door lock signal after the process has been completed. If at this time there is still **Closing door limit switch** signal, then the main board regards door operator1 **door closing limit switch failure** occurs.

Trouble_18: Door opening failure of door A

Door operator1 opens the door. After the time that timer is preset for door opening , there is still **door closing limit switch** signal, the door lock has not been break and the door is still not full open. A door operator1 opening failure occurs.

Trouble_19: Door closing failure of door A

Door operator1 closes the door. After the time timer preset for door closing, there is no **door closing limit switch** signal, and no door lock signal. Then the main board regards that door operator1 closing failure occurs.

Trouble_20 :Short connection of car door lock

During the process of door opening and after the door is fully open, the car door lock does not break. The car door lock is regarded as blocked, and the failure is marked out. The elevator is forbidden from restarting.

Possible causes: Car door is short connected; Insulation resistance value of car door lock is too low may cause this failure too.

Trouble_21 :short connection of hall door lock

At the door zone, while the system is opening the door, after the door is fully open and it's time to the preset time during door open process, the car door lock breaks, but the hall door lock is still connected. Then the system regards the hall door lock of local floor is screened. It would report this failure and forbid the elevator from restarting again.

Possible causes are: Hall door is short connected; or the insulation resistance of hall door lock is too low.

Trouble_22: poor connection of car door lock

During the process of door closing, after the door is fully closed, there is no car door lock signal. Then the car door lock is regarded as with poor connection and the failure is marked out. After the door is open again, if the door lock signal works normally, main board will dismiss this failure. The elevator will continue to work normally, but the failure is recorded.

Trouble_23: Poor connection of hall door lock

At the door zone, during the process of door closing, after the door is fully closed, there is no hall door lock signal. Then the hall door lock is regarded as with poor connection and the failure is marked out. Opening the door again, if the hall door lock signal works normally, then main board will dismiss this failure. The elevator will continue to work normally, but the failure is recorded.

Trouble_24 : door opening limit switch failure of door B

While the door operator2 is closing elevator door, and there is door lock signal after the door has been closed. If at this time there is still **door opening limit switch** signal, then the main board regards a **door opening limit switch failure** occurs at door operator 2.

Trouble_25 : door closing limit switch failure of doorB

While the door operator2 is opening elevator door, there is no door lock signal after the process has been completed. If at this time there is still **door closing limit switch** signal, then the main board regards door operator2 **door closing limit switch failure** occurs.

Trouble_26: Door opening failure of door B

Door operator2opens the door. After the preset timefor door opening , there is still **door closing operator switch** signal, the door lock has not been broken and the door is still not full open. A door operator2 opening door failure occurs.

Trouble_27 :Door closing failure of door B

Door operator2 closes the door. After the preset time for door closing , there is no **door closing limit switch** signal, and no door lock signal. Then the main board regards that door operator2 closing failure occurs.

Trouble_28: Not defined yet

Trouble_29 :Not defined yet

Trouble_30 :Slowdown failure

While running at the speed segment, if the elevator gets to levelling position of scheduled floor after deceleration, but the main board has not got the speed conformity signal（V_Same）. Then the main board would report this failure.

Trouble_31 :Door zone failure at leveling

When the elevator runs normally and gets to the door zone of scheduled landing floor, it does not receive door zone signal. Then this failure would be reported.

If there is door zone signal after the elevator stops, the elevator can start again normally; and then if the elevator stops and still there is no door zone signal, it can also restart but at inspection speed to find the door zone. If it cannot find door zone after running for two floors, the elevator would stop.

Possible causes: too low input port voltage, the position of light block board is not right, or the photo-electronic device of door zone fails.

5.3 Other common failures and brief analysis

1.Inspection operation can't be carried out

May be the wiring is wrong, or the input setting at the menu is not consistent with the outer switches that are actually used.

2. Fast run can't be carried out after floor memory learning.

Possible causes:

a. floor memory learning has not been carried out strictly according to the steps introduced in previous chapters.

b. Door zone switch failure. Maybe the door zone switch failed to act, wrong wiring or the setting of high or low level effective for door zone signal switch option in the menu is wrong.

c. PG failure. The main board has not received pulse signal. Causes may be poor connection of pulse signal creended wire, break of signal wire or damage of PG.

3. Communication failure. No display, or no call or command can be registered.

Possible causes may be:

a. Inappropriate connection of four communication lines or one of them breaks.

b. Terminal resistance is poorly connected. Make sure that in the circumstance of power off, resistance between CANH and CANL should be from 60Ω to 70Ω and its value is steady.

c. Incorrectly or reverse connection of the four lines 24V+、24V-、CANH、CANL. Make sure that in the circumstance of power on, no matter in the control cabinet, operation box or calling box, the voltage between 24V+ and 24V- should be around +24V. Voltage between CANH and CANL should be between+0.05V～+0.2V.

4. Once in a while, serial communication breaks or fails, and the floor display is abnormal

Possible causes are:

a. The earth connection of the whole system is abnormal (also check the earth connection of the power)

b. Wiring of communication is not separated with high voltage power line.

5. Sudden stop during running

Possible causes are:

a. During running, the door vane touches hall door lock switch and activate the switch.

b. During running, the steel rope is too long after stretching, and it hit safety circuit switch of the compensation chain pit (such as buffer switch) and activate the safety circuit switch.

6. Speed lost during running

Possible causes are:

a. Screened line is not used as wiring of encoder. The signals of encoder are interfered by electromagnetic wave.

b. Metal net of screened line of encoder is connected with earth line of motor (appropriate method is connecting metal net of screenedline with earth line of control device signal. Never connect it to the protecting earth line).

c. The quality of the encoder is poor or it is damaged.

7. At some floors, calling signals can be registered, but no elevator answers them.

Possible cause is: settings of DIP switch of floor control device are wrong.

8. The door of elevator won't close

Possible causes are:

a. Switch or the circuit of switch of safety edges of door fails.

b. External call or internal choice buttons are blocked.

c. Door opening button are blocked.

d. **door closing limit switch** acts before the door is fully closed or the circuit is different.

e. Disconnection or break of door closing signal line between main control device and door operator device.

f. Disconnection of power of door operator ,no power for door operator device.

g. Failure of door operator itself.

h. Over loading of elevator.

9. Elevator can only run upwards, but not downwards.

Possible causes are: Switch of upper limit is OFF or the circuit of upper limit switch breaks.

10. Elevator can run only downwards, not upwards.

Possible causes are:

Switch of down limit is off or the circuit of down limit switch breaks.

Possible causes listed in this chapter are common failures. In an actual situation, a careful check up and consideration are needed before a judgment is made.

Section 6 Warnings at adjustment

Problems that need special attention during elevator adjustment (including the sequence of adjustment action)

1. At the initial stage of installation before inspection running, first set the effective status of each input port at the “input settings” of the menu, and set the required basic parameters at the “basic parameters”. Pay special attention to the setting of these two parameters:
   Frequency division ratio: if the PG signal of the main board comes from the frequency division port of inverter, then the value should be the same with the set for frequency division ration of the inverter.
   Deceleration ratio=deceleration ratio of traction machine×traction ratio

2. Before floor memory learning, carry out an upwards inspection run. Please check the running speed shown on LCD to confirm if it is the same with the running speed for setting. If they are different, please check the basic parameters. And then check the PG signals to the main board. The floor memory learning can only be started when the set speed at inspection run is the same with that shown on main board LCD.

3. Position of forcing slowdown switches
   When the speed segments the elevator running at are over 2, two forcing switch are needed at the terminal floors. They are defined as below:
   LS1 Upwards low speed forcing slowdown switch, corresponding to the slowdown distance at low running speed.
   LS2 Upwards high speed forcing slowdown switch, corresponding to the slowdown distance at highest running speed
   LS3 Downwards low speed forcing slowdown switch, corresponding to the slowdown distance at low running speed.
   LS4 Downwards high speed forcing slowdown switch, corresponding to the slowdown distance at highest running speed
   Before the learning, there is no need to care about the position of the forcing switches. Only make sure that when the elevator is at door zone of the bottom floor, LS3 and door zone signals should both be ON; when the elevator is at door zone of the top floor, LS1 and door zone signals are both be ON. The elevator can only finish the learning under this circumstance.

4. start **floor memory learning** of elevator

5. Adjust the slowdown distance, the sense of comfort during starting and stopping, and the running speed etc.
   If PG failure occurs during the adjustment (failure 09), please adjust the running speed (1, 2, 3 ,4) in the basic parameter to twice the value of the highest speed.
   If the failure still exists, please check PG signal.

6. After finishing work mentioned above, please pay attention to the work listed below:
   a) Position of forcing switches

   Position of LS1 and LS3: the distance between these two switches and the terminal leveling position should be the same with or a bit larger than the slowdown distance 1 in the menu.
   Position of LS2 and LS4: the distance between these two switches and the terminal leveling

position should be the same with or a bit larger than the slowdown distance corresponding to the highest running speed.

For example: if speed segments in the basic parameter are set as 3, then the distance from these two switches to the terminal leveling position should be the same or a bit larger than the slowdown distance3.

7. Problems requiring special attention

Floor memory learning should be carried out again every time after the adjustment of forcing slowdown switches.

8. After finishing the work of 1 to 7, run the elevator at every speed from low to high. It is recommended to run the elevator several times at each speed. Then check the running speed in the basic parameter and you may discover that speed value(include but not limit to V1、V2、V3、V4) corresponding to elevator running speed have been changed. Main board gains these values of constant speed by the through running the elevator at different running speed. Compare these values to the constant speed value shown on the main board to see whether they are the same or not. If not, follow these procedures:

a) Start the floor memory learning process again

b) Adjust the values to the actual running speed

Running speed in the basic parameter will affect the PG failure judgment.

9. **Special attention !**

Each time after changing the running speed and slowdown distance, it is recommended to adjust the position of forcing slowdown switches and start floor memory learning again.

If only the running speed has been changed, the slowdown distance has not been changed, there is no need to adjust the position of forcing slowdown switches. But it is recommended to start floor memory learning again. if you don't want to carry out the Floor memory learning, then you should adjust setting of the running speed in the basic parameter menu to the corresponding elevator running speed.

If the discrepancy is too large, the system may report PG failure.

(Please see failure09, PG failure for more information)

10. Why the distance between forcing slowdown switches and the terminal leveling position should be the same with or a bit larger than the corresponding slowdown distance in the menu?

The slowdown distance set in the menu is the distance required for the elevator to slow down normally at each speed after adjustment.

The consistence of the forcing slowdown distance with corresponding slowdown distance ensures that in the circumstance of floors mix up caused by various reason or wrong well signal the elevator would decelerate normally and stop at the door zone at the terminal floors.

If the forcing slowdown distance is smaller than the set slowdown distance in the menu, then it may bump into the top or bottom if the elevator runs abnormally.

If the forcing slowdown distance is much larger than the slowdown distance in the menu, then it may take too much time for the elevator to get to the terminal floors because the slowdown distance is too long.