

JR-SLT-8Serial two-speed elevator control system

User Manual

Jinan Jieruida Automation Ltd.

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I Overview

JR-SLT-8 is a intelligent dual-speed serial communication elevator control system which is developed and produced by **Jinan Jieruida Automation Ltd.** It includes the main controller JR-SC-8, Touch button command controller LTCK-JR, floor displays LTBCD-JR, special auxiliary boards JR-ASB, integrated injection control panel.

Its main feature is:

485 Communications:

As a result of 485 bus between the various components of the serial data communication, thus ensuring high-speed, reliable transmission of data in large numbers, while greatly reducing the wiring between the various components. In this way, not only significantly reduce the workload of the production, installation and commissioning, but also improve the reliability of the machine, and save considerable raw materials.

Integrated control panel touch-keys

New Smart-to-talk

It can be achieved between any two floors of intercom calls, intercom status indicators, automatic or manual delay hang up the end of intercom.

SMT Surface Mount Technology

JR-SLT-8 system, have adopted the CPU circuit board SMT surface mount technology. That make the compact CPU board become smaller in size, enhanced reliability and more cost-effective.

Practical instruction code:

The debugging, repair and maintenance of system is on the spot that make it very easy. As the JR-SC-8 main controller is equipped with an intuitive and practical instruction LED digital tube, you can run the elevator fault condition at a glance.

Running protection

This particular includes outbound overtime protection, single station to run overtime protection, wrong to protect and the more stations to provide protection for the elevator to run a self-diagnostic function. For example: When the brake sensor brake failure or damage can lead to outbound overtime, elevator blocked the path will lead to a single station to run out, three-phase power supply fault or phase sequence to the damage can lead to wrong to run sensors, sensor is damaged and the emergence of more stations error of these situations, the above-mentioned of these four functions will be guaranteed a great lift in the case of trouble-free long-term stable operation.

the supply of matching

JR-SLT-8 is the main controller and the control panel supporting sales. The main controller power supply module for the control panel module power supply, custom high reliability, internal communication protocol, so completely avoid the non-compliant does not match the problem.

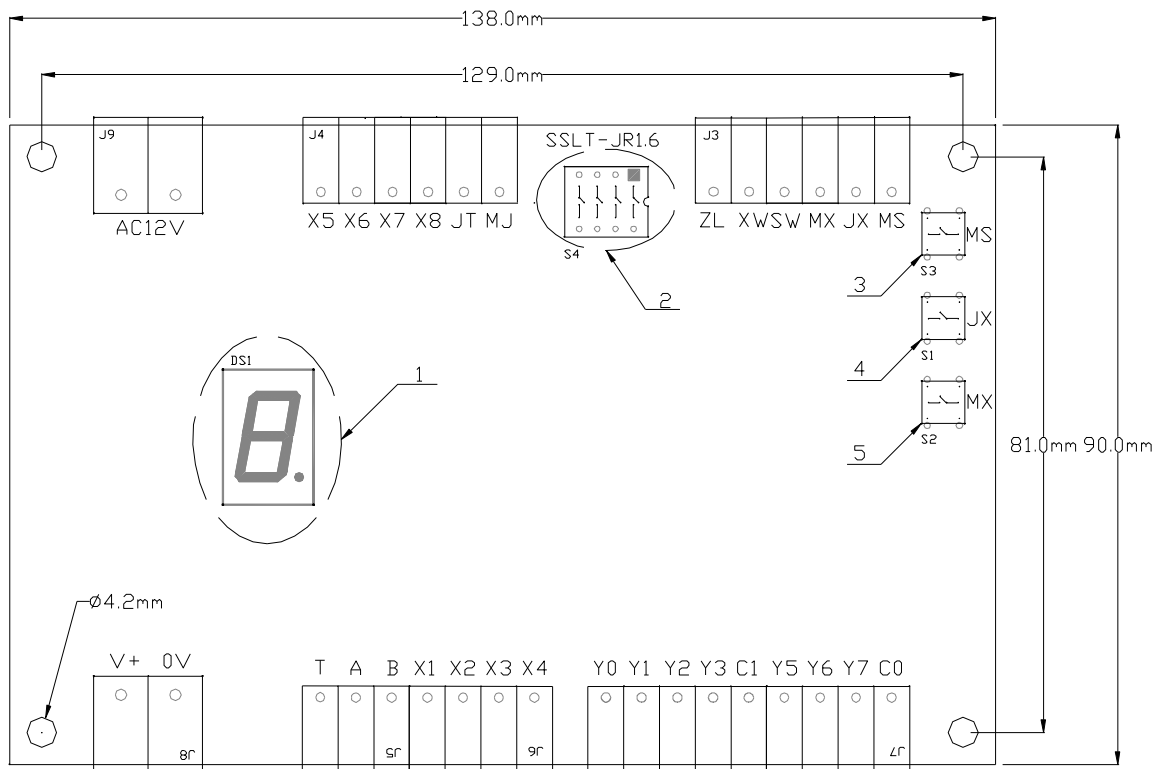
The music station clock

The "ding-dong" music of the station clock by the speaker is even be more elegant and upper grades than the traditional buzzer.

II Part Description

2.1 JR-SC-8 Host Controller Description

2.1.1 Overall dimensions and the name of operation part



Specific list of names is as follows

| Code | Name | Uses Introduction | Notes |
|------|-------------------|---|-------|
| 1 | Code instructions | Shows fault code and instructions for running | |
| 2 | DIP Switch | Set single-station running time and the door adhesion | |
| 3 | Slow up | Maintain the up-button | |
| 4 | Maintenance | Maintain the key | |
| 5 | slow down | Maintain the down-button | |

2.1.2 Electrical Specifications

Rated input voltage: AC12V

Scope: AC12V±0.5V

Input Current: 1.0A (6 layers below) / 1.2A (8 layer)

2.1.3 Electrical connections

Power Connection

The work of the main controller power supply should be stable and reliable output switching power supply or transformer power supply, only the need to share 12V (Note: tap transformer output voltage difference can be matched cases: AC36V-AC24V shall AC12V.)

Note:

Switching power supply and transformer power supply to be reliable, grounded, or they may lead to reduced stability of the main controller.

Master controller and the layer of station communication connection (485 Communications)

The next row of the main controller plug terminals "J5-A, B" is the interface of the main controller and the layer of station communication.

Cable requirements:

It must be twisted-pair connections, besides, stranding pitch is not greater than 30mm.

2.1.4 Terminal Description

| Terminal No. | Input / Output Type | Function | Description |
|--------------|---------------------|-------------|----------------------------|
| AC12V | Input | Power Input | Voltage permissible range: |

| | | | |
|--------|----------------|---|---------------|
| | | | AC12V ± 0.5V |
| V+ | Output | Power output and input signal common terminal | |
| 0V | Output | Power output negative | |
| X1 | Input | On the exchange rate | Normally Open |
| X2 | Input | Under the exchange rate | Normally Open |
| X3—X10 | Input | 1-8 Floor sensor input | Normally Open |
| JT | Input | Safety circuit relay | Normally Open |
| MJ | Input | Lock circuit relay | Normally Open |
| ZL | Input | Feedback brake and output contactors | NC |
| XW | Input | Lower bit | NC |
| SW | Input | Maximum bit | NC |
| MS | Input | Maintenance slower function | Normally Open |
| MX | Input | repair the function of “Slow down ” | Normally Open |
| JX | Input | Maintenance | Normally Open |
| A | Communications | Serial Data Communication | |
| B | Communications | Serial Data Communication | |
| T | Output | The station clock output | |
| Y3 | Output | Upstream contactor | |
| Y4 | Output | Downstream contactor | |
| Y6 | Output | Express Contactor | |
| Y7 | Output | Idle Contactor | |
| Y8 | Output | Express Auxiliary Contactor | |
| NC | | Standby terminal | |

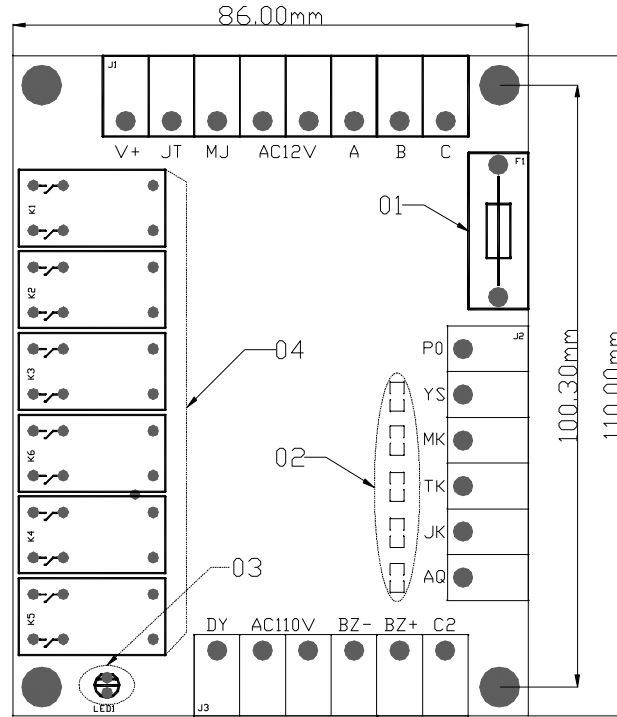
2.2 Auxiliary Board Help

2.2.1 Functional Overview

To simplify the elevator control cabinet structure, improve stability and reduce costs, our company designed and developed a special electronic elevator control circuit board, it is JR-ASB auxiliary board. Its main features are: used Brand substrate seal replaces the conventional plug-in relay latching relay, and phase sequence detection

circuit, rectifier filter circuit and most of the control circuit integrated in a circuit board.

2.2.2 Dimensions and components description

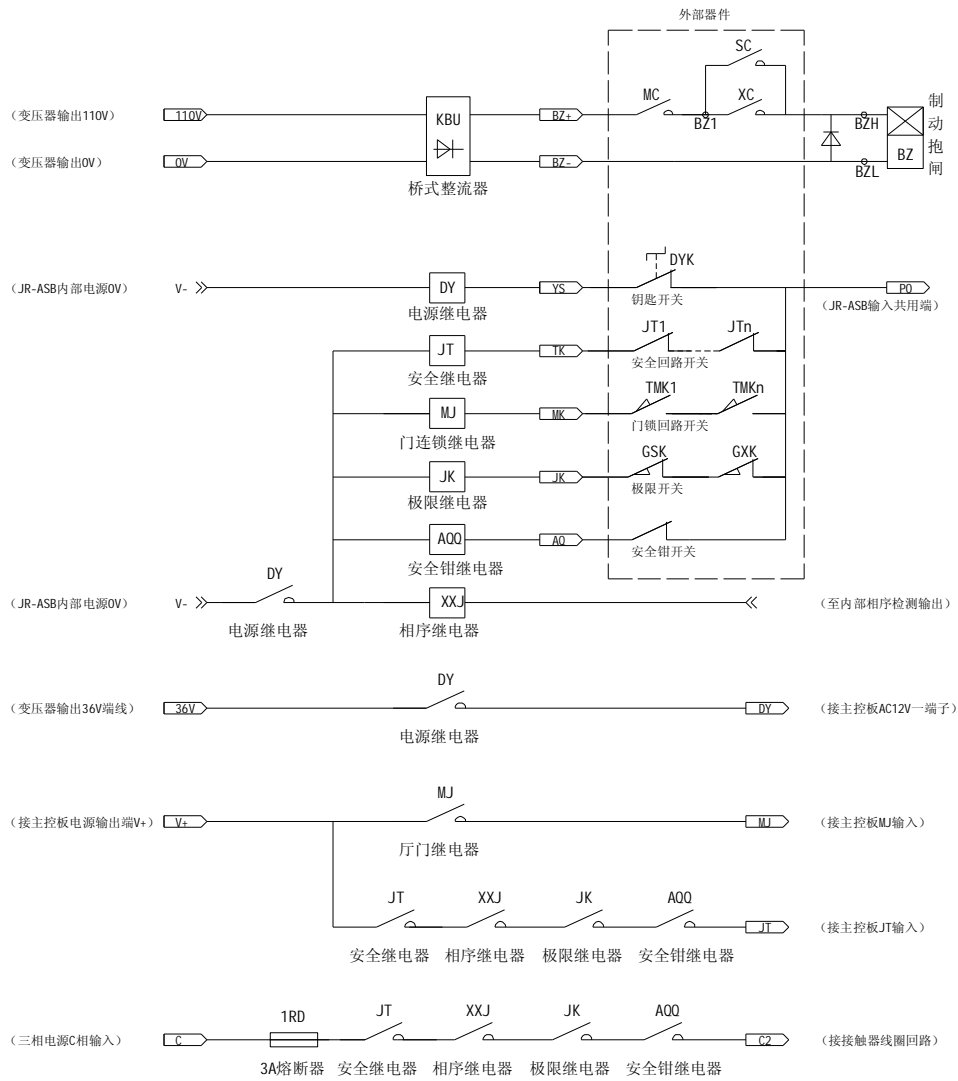


| Code | Name | Uses Introduction | Notes |
|------|--------------------------|--|-------|
| 01 | 2A fuse | Short-circuit protection of the contactor control circuit | |
| 02 | Input Indicator | Instructed to enter of the state | |
| 03 | Phase Sequence Indicator | If the green light is lit it means that the phase sequence to normal, if the green light is dark it means missing out phase or the wrong phase | |
| 04 | Relay | It includes the power lock relays, safety relays, door lock relay, phase sequence relay, limit relays, safety gear relays. | |

2.2.3 Terminal Description

| Terminal No. | Input / Output Type | Function | Description |
|--------------|---------------------|--|--|
| AC12V | Input | Power Input | Voltage permissible range: AC12V \pm 0.5V |
| V+ | Input | JT, MJ output common terminal | |
| JT | Output | Safety circuit relays (normally open points) | Normally Open |
| MJ | Output | Lock circuit relay (normally open points) | Normally Open |
| A | Input | AC 380V-A | |
| B | Input | AC 380V-B | |
| C | Input | AC 380V-C | |
| PO | Output | Input common terminal | |
| YS | Input | Key Switch | Normally Open |
| MK | Input | Door loop | Normally Open |
| TK | Input | Safety loop | NC |
| JK | Input | Limit Switches | NC |
| AQ | Input | Safety gear | NC |
| DY | Output | | Connect the master board power supply terminal |
| AC110V | Input | | AC 110V Input |
| BZ+ | Output | DC 110V Cathode | |
| BZ- | Output | Negative DC-110V | |
| C2 | Output | | Connect contactor coil circuit |

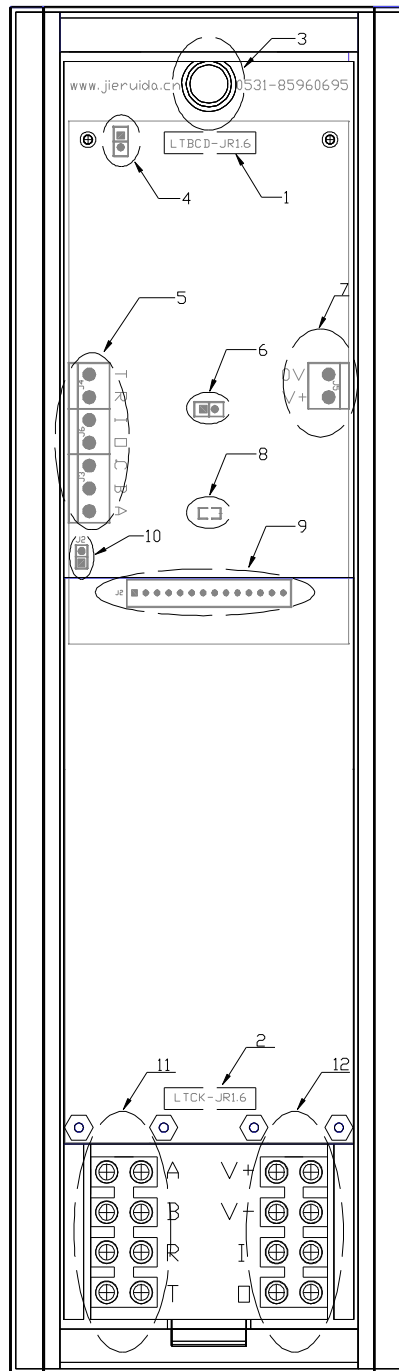
2.2.4 Internal logic and external connections



2.3 The panel part of the explanation

2.3.1 The internal structure of the Control Panel

Specific list of names is as follows



| Code | Name | Uses Introduction | Notes |
|------|------------------------|---|--|
| 1 | Floor Monitor LTBCD-JR | Shows the elevator's running, provides power for LTCK-JR t, and connects with the main controller | It has been installed on the injection panel |
| 2 | LTCK-JR | To implement a touch | It has been |

| | | | |
|----|---|--|---|
| | Touch button command controller LTCK-JR | function, Process and communicate with the host controller information, control the floor monitor's status | installed on the injection panel |
| 3 | Receiver | Turns the sound signals into electrical signals | It has been installed |
| 4 | Receiver socket | Connects the receiver | It has been connected to the receiver |
| 5 | Signal plug-seat | Connects Serial communications ,intercom and emergency-stop with the outside world | It has been connected to the 11,12 |
| 6 | Speaker sockets | Connects with the Speaker | It has been connected to the speaker |
| 7 | Power Access Block | Has access to an external power supply | It has been connected to the 11,12 |
| 8 | Communication Indicator | Directs the communication status | |
| 9 | Pin plug | To achieve the connection LTBCD-JR with LTCK-JR | It has plug-in |
| 10 | Termination resistor | To set-off the communication terminal resistor | Primary station (usually the first one layer) is in a short-circuit connection, the other floors are placed in a disconnected state |

| | | | |
|-------|----------------------------|--|--|
| 11 12 | Pressure Line terminal row | To achieve the transition with other components and connectors (5,7) | |
|-------|----------------------------|--|--|

Schematic diagram of the internal structure of the Control Panel

2.3.2 Connection Method

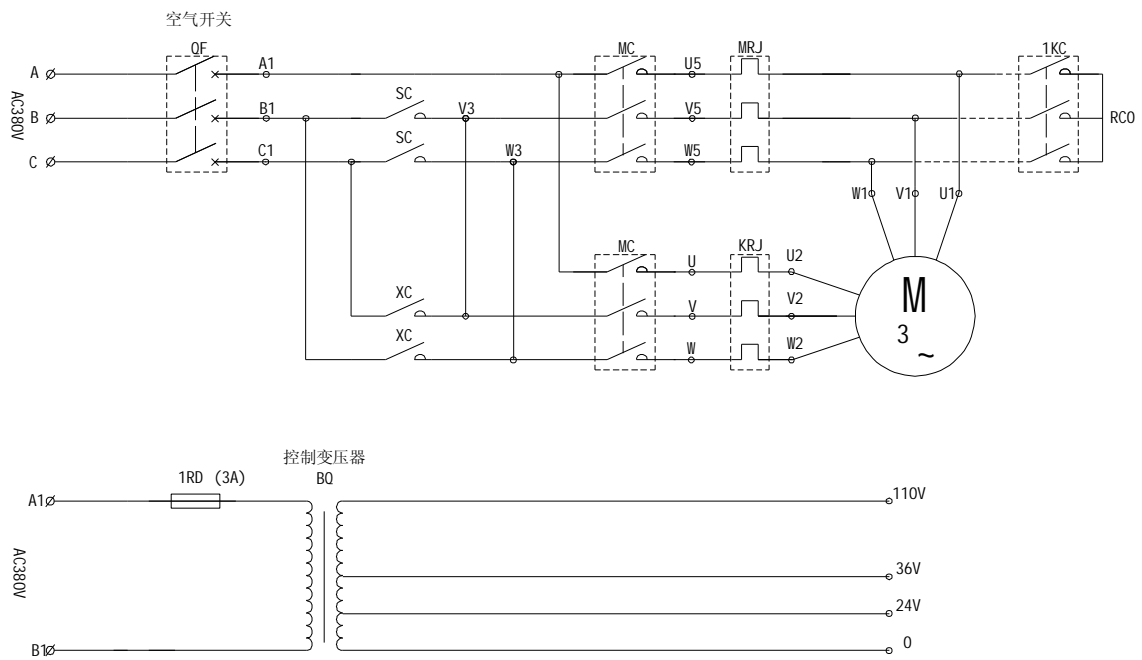
Users only need to be completed in accordance with circuit voltage line terminal row (11,12) and external connections .

2.3.3 Terminal Description

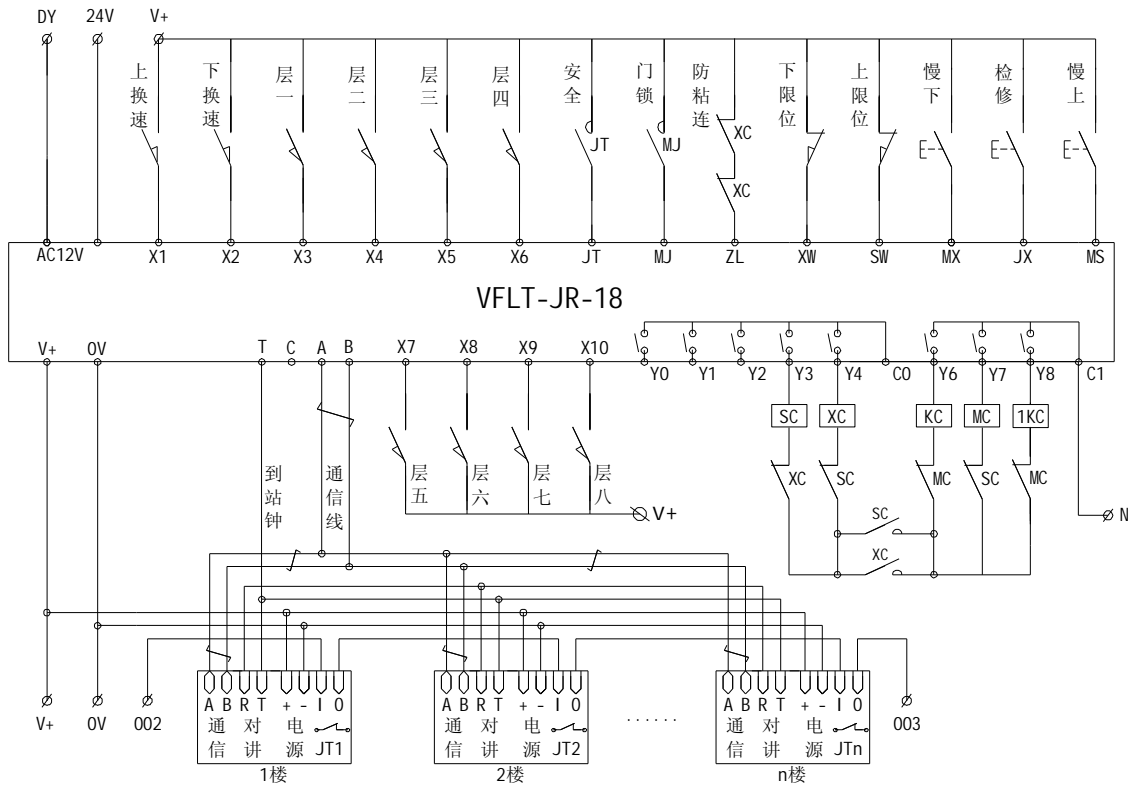
| Terminal No. | Input / Output Type | Function | Description |
|--------------|---------------------|---|-------------|
| V+ | Input | Positive Power Input | |
| V- | Input | Negative Power Supply Input | |
| A | Communications | Serial Data Communication | |
| B | Communications | Serial Data Communication | |
| R | | Intercom cable | |
| T | | Intercom transmission and the station clock input | |
| I | Output | E-STOP relay output | NC |
| O | Output | E-STOP relay output | NC |

III System circuit

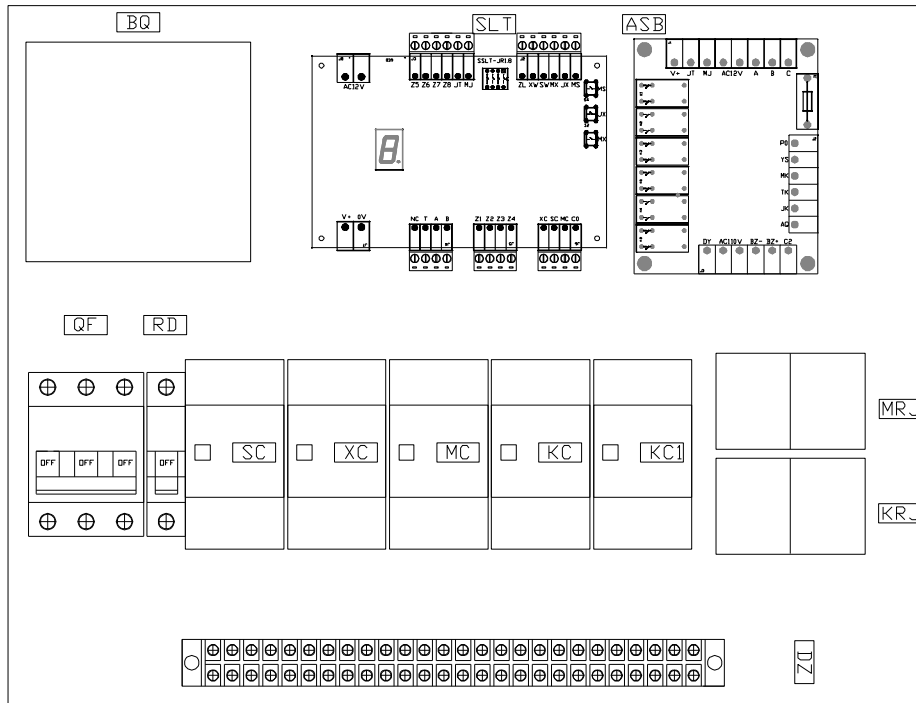
3.1 Main circuit diagram



3.2 Auxiliary board wiring diagram



3.4 The control cabinet layout diagram



3.5 Configuration control cabinet list

| Symbol | Name | Model | Notes |
|-------------------------|--|------------|---|
| QF | 3 pole Miniature Circuit Breaker (circuit breaker) | DZ47-63-D | 6A-16A |
| RD | Pole MCB(circuit breaker) | DZ47-60 | 3A / fuse |
| BQ | Control Transformers | BK150-200 | Output 110V, 36V, 24V, 6V |
| RJ | Thermal relay | JR36-20 | Set the value is 1.2 times of the motor rated current |
| KC、SC、 XC、MC、 KC1 | Contactors | CJX1-9~140 | |
| SLT | Host Controller | SSLT-JR1.8 | |
| ASB | Auxiliary Board | JR-ASB | |
| DZ | Terminal row | 1540 | |
| D1 | FWD | FR307 | Fast Recovery Diode 3A/700V |

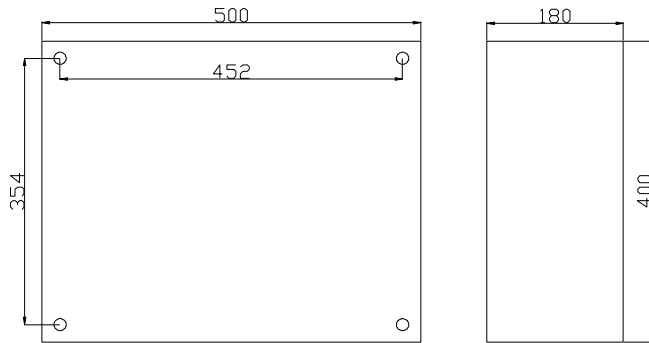
3.6 Terminal control cabinet wiring diagram



3.7 Control Cabinet Terminals Description

| Terminal No. | Input / Output Type | Function | Description |
|--------------|---------------------|---|---------------|
| V+ | Output | Common external input and output power supply positive terminal | |
| OV | Output | Output Power Negative | |
| X1 | Input | On the exchange rate | Normally Open |
| X2 | Input | Under the exchange rate | Normally Open |
| X3—X10 | Input | 1-8 Floor sensor input | Normally Open |
| A+ | Communications | Serial communication line | |
| B- | Communications | Serial communication line | |
| T | Output | Arrival Bell | |
| SW | Input | Upper limit position switch(NC) | |
| XW | Input | Upper limit position switch | |
| PO | | Input common terminal | |
| YS | Input | Key Switch | Normally Open |
| MK | Input | Door loop | Normally Open |
| TK | Input | Safety loop | NC |
| JK | Input | Limit Switches | NC |
| AQ | Input | Safety gear | NC |
| A | Input | AC 380V-A | |
| B | Input | AC 380V-B | |
| C | Input | AC 380V-C | |
| N | Input | AC power neutral line (zero line) | |
| U1 | Output | Motor Power Supply | |
| V1 | Output | Motor Power Supply | |
| W1 | Output | Motor Power Supply | |
| U2 | Output | Motor Power Supply | |
| V2 | Output | Motor Power Supply | |
| W2 | Output | Motor Power Supply | |
| BZH | Output | Brake brake Positive | |
| BZL | Output | Brake brake negative | |

3.8 control cabinet installation dimensions



IV Commissioning and operation

Please carefully refer to the manual, complete the system connection. Determine the ground around the line-end has been reliable, all control circuit connections are correct and place the system immediately on maintenance status, then you can be power-debug. Please check before you focus on the power supply circuits.

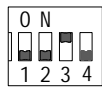
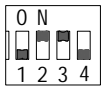
4.1 Initial power-on

After being power-on, if the car just stopped on a floor stand, then this level indicator will be in lit stations; if the car stops in a two-layer between the layer, selected layer lit up any **call-ladder instruction lamp. car will be down, find the nearest floor stop, and stop, and at this time the corresponding floor lamp will be lit.**

4.2 Related Settings

4.2.1 Main Control Board JR-SC-8 DIP-switch settings

| Set Name | Functional Description | Set bit | DIP switch status | state of setting |
|-----------------------------|---|--------------|-------------------|------------------|
| Anti-adhesion door | In setting case, can monitor whether the door switch is adhesion. That is: Every time the station receives switch gate signals need to be allowed to continue selected layer. | 4th | | Not set |
| | | | | Set |
| Running time-out protection | If the elevator is running longer than a single station setup time, take protection. At this point: Fault code | No. 2, 3 bit | | 60S |
| | | | | 28S |

| | | | | |
|--|--|--|--|-----|
| | displays F., control panel displays 1. | |  | 16S |
| | | |  | 12S |

4.2.1 Control Panel No. set

When the system is first on a power and running, set ID for each call Ladder box.

(Note: When the number is not set, it will display "0", this time all the commands lights will light up and can't communicate with the main control board).



The purpose of setting: set the number of each control panel, for example: the first floor of control panel sets to 1, the second floor control panel sets to 2.....

Setting Method: Touch intercom button and emergency stop button while rapid clicks (interval 0.5S) preset number button 8 times. For example: the second floor-based control panel numbered 2. In other words, touch intercom button and emergency stop button and hold while clicking on 2 key 8 times, this time panel digital display shows 2 and shows the same state with the main controller communication synchronization after two seconds ; after 10S it will normally operate .

4.2 .2 Code instructions

Direction rule: In the case of no failure, code instructions and floor shows to be synchronized, otherwise instructed fault code. If the decimal point digital tube light, this shows the failure code.

Fault code and Solutions

| Fault code | Code Description | Synchronization instructions | Analysis of the causes |
|---|-------------------------|------------------------------|---|
|  | Safety circuit breaker | Stop lights lit up | The main reason this happens is "the upper and lower limit switches, phase sequence relay, thermal relay, an emergency stop switch" action or the failure safety relays |
|  | Door chain loop circuit | Open lamp lit up | Car doors or Door switch is not closed, it also could be the door chain relay fault |

| | | | |
|----|--|---------------------------|---|
| 3. | Contactors adhesion | Stop lights lit up | The main contactor, upstream or downstream contactor appears adhesion or auxiliary contacts meet failure |
| 4. | Action Limit Switch | The corresponding LED off | Maximum bit or lower bit something which can be determined based on the input LED |
| 5. | Multi-input | Stop lights lit up | The reason is floor sensor failure or sensor short-circuit connection. |
| b. | Serial communication error | | Control Panel Number is not set or set incorrectly, without the use of twisted-pair communication lines or terminal resistor is not set (For details, please refer to 2.1.1-10) |
| E. | Outbound time-out - 4S has been out of the current layer | Control Panel Flash 0 | Elevator starts brake is not open, the current level sensor is failure or running path is blocked |
| F. | Run out (the specific settings please refer to 4.1.1) | Control Panel Flash 1 | Brake brake is not fully open, sensor is malfunction, the path of running is hindered or single-station run time is set incorrectly. |
| H. | Running the wrong direction, or more points | Control Panel Flash 2 | Phase sequence settings are not correct or control circuit wiring errors will lead to run in the opposite direction, and sensor failure will lead to more stations |

4.3 Code instructions

4.4 Maintenance Running

When the lift needs repair or want to manipulate the elevators in the engine room, and at the same time press the maintenance button and up button or simultaneously press the maintenance button and the down button, to achieve the lift points, moving upstream or downstream. Should be explained that, in the maintenance state of the election call ladder layer failure.

4.3 Troubleshooting

Fault code list of the elevator control system includes almost all of the common faults, when you repair the fault, please refer to the list carefully analyzed.

V Normal operation of the system

5.1 Select Layer Running

The length of elevator power's time is required to initialize 6S, that means manipulate it after 6 seconds.

Select layer operation: in the door chain loop, security, closed circuit complete failure and no other circumstances, touch-selected button.

Select Layer Success: Instruction lamps (selected floor lamp backlight touch keys) light up and maintain, direction indicator lights, elevator's running.

Automatic arrival: car door into the selected area floors, elevators stop running, direction indicator light is off, lights off command, the station bell ringing. Then a selection layer operation complete.

Related Note: If you set the door of the anti-adhesion function (please refer to 4.1.1), after stopping at the station, you must switch doors can be re-elected layers. On the contrary, if it is not located, there is no need to switch the door, then you can re-selected.

5.2 Smart Intercom

Intercom operation: you only need to touch intercom button and the desired floor button call, this time you can leave your fingers.

Intercom Created: all floors intercom button lit backlight, the caller called floor button backlight flashing, called party call floor button backlight blinks.

Intercom End: after the establishment of intercom system, it automatically enters into the countdown procedure - 30S automatic hang up, or not yet reached 30S touch intercom button again when the end of a second manual intercom.

Related Note: In the case of touch intercom button not leaving, touch the called floor button, at this point the election will not be carried-layer functions.

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