Foreword

Thank you for choosing the Smile3000-M Integrated Elevator Control Cabinet of Shenzhen Megmeet Electrical Co., Ltd.

The Smile3000-M series integrated elevator control cabinet, a product independently engineered and manufactured by Megmeet, represents a pinnacle of innovation in the elevator control system domain.

The control cabinets in this series showcase a revolutionary structural design. Their overall aesthetic appeal is complemented by a meticulously planned layout. Moreover, the materials employed are not only of high quality but also environmentally friendly, reflecting our commitment to sustainability. Equipped with the next-generation Smile3000 integrated controller, this system offers remarkable flexibility. A simple adjustment of a single parameter is capable of seamlessly switching between AC asynchronous motor drive and permanent magnet synchronous motor drive. This not only ensures safe, reliable, and energy-efficient operation, but also significantly reduces the number of traveling cables. The fixed user interface further simplifies operation and maintenance, enhancing user convenience.

Megmeet is committed to presenting our clients with a comprehensive suite of elevator solutions, all of which adhere strictly to the latest national standards. Boasting an extensive product lineup, we are dedicated to fulfilling the diverse requirements of our customers with utmost precision.

This manual provides a detailed introduction to the product types and features, safety tips, installation and electrical design, simple maintenance, and other contents of the Smile3000-M series integrated elevator control cabinet. Before using the product, users are kindly requested to read this manual carefully. It is recommended to keep it properly for reference during subsequent maintenance operations.

Please read this manual carefully before using this product.

Strictly follow the safety instructions indicated in this manual to prevent personal injuries and property damages. Any injury or loss resulted from violations of such safety instructions is not the responsibility of our company.

The product/system covered in this document should be used/operated by qualified personnel only. Qualified personnel are those who meet all requirements for their work, have received necessary training on safety and product use, and possess adequate experience. Their operation should fully comply with the instructions provided in the document, in particular the safety warnings.

In case of any questions and requirements arising from the use/operation of this product, please contact our regional office or distributors, or connect directly with our technical service team. Megmeet is dedicated to bringing all-round satisfaction to our clients.

Due to our unwavering commitment to the continuous improvement in product quality and performance, all materials provided are subject to changes without prior notice.

Technical Features

The Smile3000 series integrated elevator control cabinet features a smart control system that incorporates advanced technologies in computing, automation, network communication, and motor vector control, offering a comprehensive solution for various elevator applications.

Technical superiority

- ✧ Direct-to-floor technology: optimal speed curve based on precise distance control, which offers smooth speed change and high running efficiency.
- ✧ Integrated design: seamless combination of elevator logic control and traction machine drive control; dual CPU; integrated communication of CANbus, Modbus, and IoT.
- ✧ No-load-cell startup torque compensation technology: smooth zero-speed elevator start which requires no load cell; applicable to various types of encoders and traction machines.
- ✧ With-load motor auto-tuning: with-load auto-tuning available for both permanent-magnet synchronous motors and asynchronous motors.
- ✧ Parallel control for 2 elevators and group control for 8 elevators: advanced algorithms for elevator parallel/group control, developed in accordance with the latest elevator control theories.

Excellent operability

- ✧ Compact layout based on functional integration of control and drive, convenient for small-machine-room and machine-room-less elevator design.
- ✧ Simplified parameter settings, making on-site commissioning much easier.
- ✧ On-panel keypad, which facilitates elevator inspection, maintenance, and commissioning.
- ✧ Load cell auto-tuning for all load levels.
- ✧ Multiple commissioning methods: PC host software, operating panel, and mobile phone App.
- ✧ In-car leveling precision adjustment.
- ✧ Balance coefficient automatic detection, and slippage detection.

Guaranteed safety

- ✧ Multiple protective measures, in compliance with the requirements of GB-T7588.1-2020 standard.
- ✧ Fault-tolerant design of both hardware and software; countermeasures against multiple categories of faults; countermeasures against the occurrence of accidents (such as top-hitting, and bottom-crashing), ensuring safe elevator operation.
- ✧ Highly proficient manufacturing capabilities ensure robust environmental adaptability, enabling the drive products to effectively withstand harsh working conditions, including power grid fluctuations, dust interference, high temperatures, and lightning strikes.
- ✧ Dual CPU control, brake function, and STO function.

- ✧ UCMP, braking force test, and door lock short-circuit detection.

Optimal comfortability

- ✧ No-load-cell technology or dedicated load cell compensation device, providing smooth startup torque compensation.
- ✧ Optimal vector control maximizes the motor drive performance, delivering superlative comfort in elevator riding.

Ultimate cost-efficiency

- ✧ High level of integration significantly simplifies the system and reduces the peripheral wiring, which enhances the cost efficiency, usability, and elevator safety and stability.
- ✧ Superb combination of CANbus and Modbus communication, which minimizes the number of traveling cables to the greatest extent.
- ✧ Flexible and diverse modular expansions.
- ✧ Parallel control can be easily achieved with only two cables, eliminating the need for additional group control boards.

Contents

Foreword 1
Technical Features 1
Introduction 1
Chapter 1 Important Safety Instructions 6
Chapter 2 Product Information 7
2.1 Nameplate and model 7
2.2 Product models 7
2.3 Appearance and mounting dimension 8
2.4 Technical specifications 9
2.5 Model selection table 13
Chapter 3 Mechanical Installation 15
3.1 Installation requirements 15
3.2 Installation method 17
Chapter 4 Electrical Installation 18
4.1 Main control board (Smile3000-MCB) 19
4.1.1 Main control board (Smile3000-MCB) diagram 19
4.1.2 Indicators 19
4.1.3 Terminal instructions 20
4.2 PG card 22
4.2.1 Asynchronous motor PG card (PG-P) 22
4.2.2 Synchronous motor PG card (PG-S) 22
4.3 Control cabinet I/O board (DT-KZG-CJB) 24
4.3.1 Control cabinet I/O board (DT-KZG-CJB) diagram 24
4.3.2 Control cabinet I/O board (DT-KZG-CJB) indicator diagram 25
4.3.3 Control cabinet I/O board (DT-KZG-CJB) port instructions 25
4.3.4 Safety circuit bypass port instructions 34
4.3.5 Door lock bypass port instructions 34
4.3.6 UCMP port instructions 34
4.4 Car top board (Smile3000-CTB) 35
4.4.1 Car top board (Smile3000-CTB) diagram 35
4.4.2 Car top board (Smile3000-CTB) indicator instructions 35

4.4.3 Car top board (Smile3000-CTB) port instructions 35
4.5 Car top I/O board (DT-JDX-CJB) 37
4.5.1 Car top I/O board (DT-JDX-CJB) diagram 37
4.5.2 Car top I/O board (DT-JDX-CJB) indicator instructions 37
4.5.3 Car top I/O board (DT-JDX-CJB) port instructions 38
4.6 Pit control board (Smile3000-CPB-A) 48
4.6.1 Pit control board (Smile3000-CPB-A) diagram 48
4.6.2 Pit control board (Smile3000-CPB-A) indicator instructions 48
4.6.3 Pit control board (Smile3000-CPB-A) port instructions 48
4.7 Pit I/O board (DT-DKX-CJB) port instructions 49
4.7.1 Pit I/O board (DT-DKX-CJB) diagram 49
4.7.2 Pit I/O board (DT-DKX-CJB) port instructions 50
4.8 Operating box command board (Smile3000-CBB) 54
4.8.1 Operating box command board (Smile3000-CBB) diagram 54
4.8.2 Operating box command board (Smile3000-CBB) setting 54
4.8.3 Operating box command board (Smile3000-CBB) port instructions 54
Chapter 5 Commissioning tools 58
5.1 Keypad 58
5.2 Operating panel 60
5.2.1 LED Indicator and multi-function key instructions 60
5.2.2 LED display symbols 62
5.3 Basic operation 63
5.3.1 Parameter display 64
5.3.2 Parameter viewing 64
5.3.3 Parameter modification 64
Chapter 6 Electrical installation and circuit explanation 66
6.1 Safety instructions 66
6.2 Main power supply circuit 68
6.2.1 MR control cabinet main power circuit instructions 68
6.2.2 MRL control cabinet main power circuit instructions 69
6.2.3 Braking resistor installation 71
6.3 Encoder installation 72
6.4 Shorting motor stator control circuit 73
6.4.1 Schematic diagram of shorting motor stator control circuit 73

6.4.2 Shorting motor stator control circuit parameter 74
6.4.3 Shorting motor stator control circuit instructions 74
6.5 Safety circuit and door lock circuit 75
6.5.1 MCB safety circuit and door lock circuit ports 75
6.5.2 Control cabinet I/O board safety circuit and door lock circuit ports 75
6.5.3 Door lock circuit indicators and fault diagnosis 76
6.5.4 Safety circuit indicators and fault diagnosis 76
6.5.5 Safety bypass instructions 77
6.5.6 Door lock short-circuit detection instructions 78
6.6 EEO circuit and car top inspection control circuit 78
6.6.1 EEO circuit and car top inspection control circuit diagram 78
6.6.2 EEO parameters and indicators 80
6.6.3 EEO circuit instructions 80
6.6.4 Car top inspection parameters and indicators 80
6.6.5 Car top inspection instructions 81
6.7 Pit inspection control circuit 81
6.7.1 Pit inspection control circuit diagram 81
6.7.2 Pit inspection parameters and indicators 83
6.7.3 Pit inspection instructions 83
6.8 Door lock bypass ports 83
6.9 Brake control circuit 85
6.9.1 Brake control circuit diagram 85
6.9.2 Brake control indicator instructions 85
6.9.3 Brake control circuit port instructions 86
6.10 Car leveling control and door zone control circuit 86
6.10.1 Leveling control and door zone control indicator instructions 86
6.10.2 Leveling control and door zone control circuit port instructions 87
6.10.3 Leveling control and door zone control circuit installation 88
6.11 Advance door open control circuit 88
6.11.1 Advance door open control parameters 88
6.11.2 Advance door open control circuit diagram 89
6.11.3 Advance door open control circuit instructions 89
6.12 Upper shaft control circuit 90
6.12.1 Up slowdown indicators 90

6.12.2 Upper shaft control circuit ports and installation instructions 91
6.12.3 Upper shaft position limit switch installation diagram 92
6.13 Lower shaft control circuit 93
6.13.1 Down slowdown indicators 93
6.13.2 Lower shaft control circuit ports and installation instructions 93
6.13.3 Lower shaft position limit switch installation diagram 94
6.14 Door operator control circuit 95
6.14.1 Door operator control circuit indicators 95
6.14.2 CTB door open/close test mode instructions 96
6.14.3 Door operator control circuit port instructions 96
6.15 Light curtain control circuit 98
6.15.1 Light curtain control circuit indicators 98
6.15.2 Light curtain control circuit port instructions 98
Chapter 7 System Commissioning 100
7.1 Trial run commissioning flowchart 100
7.2 Mechanical safety and electrical wiring inspection 101
7.2.1 System wiring diagram 101
7.2.2 Safety inspection flowchart for system wiring 101
7.3 Controller state confirmation 103
7.3.1 Electrical status check upon power-on 103
7.3.2 System status check upon normal power-on 103
7.3.3 Controller state and fault handling before commissioning 103
7.4 Commissioning at inspection speed 105
7.4.1 Motor auto-tuning 106
7.4.1.1 Motor auto-tuning related parameters 106
7.4.1.2 Motor auto-tuning flowcharts 107
7.4.2 Running test at inspection speed 111
7.5 Commissioning at normal speed 112
7.5.1 Shaft auto-tuning 112
7.5.1.1 Preparations for shaft auto-tuning 112
7.5.1.2 Conditions for shaft auto-tuning 113
7.5.1.3 Perform shaft auto-tuning 113
7.5.1.4 Test running at normal speed 113
7.5.2 CTB commissioning 114

7.5.2.1 Light curtain commissioning 115
7.5.2.2. Door operator commissioning 115
7.5.3 HCB installation and setting 117
7.6 Comfort adjustment 118
7.6.1 Riding comfort adjustment 118
7.6.1.1 Adjustment of system control performance 119
7.6.1.2 Mechanical factors affecting riding comfort 122
7.6.2 Leveling accuracy adjustment 123
7.6.2.1 Description of leveling components 123
7.6.2.2 Leveling accuracy adjustment description 124
7.6.2.3 Leveling adjustment guide 126
Chapter 8 Function Description 128
8.1 Elevator lockout and scheduled lockout 128
8.2 Returning to fire emergency floor (fire-fighting linkage) 128
8.2.1 Function description 128
8.2.2 Activation method 129
8.2.3 Related parameters 129
8.3 Auto-return to parking floor and standby car door mode 129
8.4 Lighting/Fan control 130
8.5 Soft limit 130
8.6 Wrong call cancellation 130
8.7 Overload/Full-load 131
8.7.1 Related parameters 131
8.7.2 Machine room overload 131
8.7.3 Car overload/full-load 132
8.8 Anti-nuisance 132
8.8.1 Function description 132
8.8.2 Related parameters 133
8.9 VIP service 133
8.9.1 Function description 133
8.9.2 Related parameters 133
8.10 Security floor service 134
8.11 Collective selective control mode 135
8.12 Peak service in down collective selective mode 135

8.13 Time-based and floor-based service 136
8.14 Parallel control 137
8.14.1 Installation 137
8.14.2 Related parameters 138
8.14.3 Operation instructions of parallel control 139
8.15 Peak service in parallel/group control 140
8.16 Double-sided (through-type) elevator service 141
8.16.1 Installation method 142
8.16.2 Related parameters 142
8.17 Door open/close control and time 143
8.18 Accessibility function 145
8.18.1 Function description 145
8.18.2 Installation method 145
8.18.3 Related parameters 146
8.19 Advance door open 146
8.19.1 Advance door open control diagram 146
8.19.2 Advance door open control parameters 146
8.19.3 Advance door open control description 147
8.20 Re-leveling at door open 148
8.20.1 Control diagram of re-leveling at door open 148
8.20.2 Related parameters of re-leveling at door open 148
8.20.3 Re-leveling at door open control description 149
8.21 Leveling adjustment 149
8.21.1 Unified adjustment 149
8.21.2 Single floor adjustment 150
8.22 UCMP test 151
8.22.1 Related parameters 152
8.22.2 Testing method 152
8.23 Static test of braking force 153
8.23.1 Related parameters 154
8.23.2 Braking force static test instructions 155
8.24 Dynamic test of braking force 157
8.24.1 Related parameters 157
8.24.2 Dynamic test instructions 157

8.25 Function test of shorting motor stator 159
8.25.1 Methods of shorting motor stator 159
8.25.2 Related parameters of shorting motor stator function test 159
8.25.3 Testing procedure 161
8.26 Up running overspeed protection test 162
8.26.1 Related parameters 162
8.26.2 Testing procedure 163
8.27 Linkage test of speed limiter and safety gear 164
8.27.1 Related parameters 164
8.27.2 Testing procedure 165
8.28 Steel rope slip test 166
8.28.1 Related parameters 166
8.28.2 Test method 167
8.29 Electrical brake release instructions 168
8.30 Rescue work instructions 169
8.31 MRL speed limiter test instructions 170
8.32 CTB door open/close test 170
Chapter 9 Parameter Description 171
9.1 Keypad parameter description 171
9.2 Operating panel parameter description 174
9.2.1 P00: Basic parameters 175
9.2.2 P01: User parameters 178
9.2.3 P02: Motor parameters 180
9.2.4 P03: Speed control parameters 183
9.2.5 P04: Vector control parameters 184
9.2.6 P05: Running control parameters 187
9.2.7 P06: MCB terminal parameters 192
9.2.8 P07: CTB terminal parameters 201
9.2.9 P08: Door operator parameters 204
9.2.10 P09: Hall call parameters 208
9.2.11 P10: Load cell parameters 209
9.2.12 P11: Basic elevator parameters 211
9.2.13 P13: Keypad setting parameters 219
9.2.14 P15: Communication parameters 222

9.2.15 P16: Time parameters 222
9.2.16 P17: Test function parameters 224
9.2.17 P18: Maintenance parameters 227
9.2.18 P19: Floor height parameters 227
9.2.19 P20: Leveling adjustment parameters 228
9.2.20 P21: Floor display parameters 230
9.2.21 P22: Magnetic scale parameters 232
9.2.22 P40: Commissioning parameters 233
9.2.23 D00: Basic configuration 234
9.2.24 D01: Running status 235
9.2.25 D02: MCB status 240
9.2.26 D03: CTB status 249
9.2.27 D04: Communication status 252
9.2.28 E00 to E10: Fault record parameters 254
Chapter 10 Troubleshooting 258
10.1 Fault display 258
10.2 Procedure for fault reset before elevator restart 259
10.3 Description of fault levels 259
10.4 Fault handling 260
Chapter 11 Maintenance 283
11.1 Routine inspection 283
11.2 Periodic maintenance 284
11.3 Replacement of quick-wear parts 285
11.4 Storage of the controller 285
Appendix A Braking Resistor Table 287
Appendix B System Wiring Diagrams 288
Appendix C List of Parameters 294
Appendix D Warranty and Service 342

Introduction

1. Basic functions

Function	Description
General operation	
Door circuit fault detection	This function determines whether the door lock acts correctly when the car door or the landing door opens. If a fault is detected in the car door or the landing door, the elevator will stop running.
Full collective selection operation	This function applies to the automatic running state and the attendant state. While responding to the car calls during running, the elevator automatically responds to the hall calls which are registered via button signals. Passengers on any service floor can summon the elevator by registering the up or down calls.
Door open manual hold	In the automatic running state, this function enables the passenger to delay the door close action by pressing the door open holding button in the car, which facilitates the handling of goods.
Door operator service floor setting	This function enables the elevator system to designate the specific service floors of the door operator based on actual needs.
Advance door closing via door close button	This function enables the passenger to close the door in advance when the door is in the open holding state during automatic running, which saves the time.
Floor number display setting	The system allows a random combination of numbers and letters to be displayed as the indication of each floor for the convenience of use in special occasions.
Light curtain signal judgement	In case of any obstructions to the closing door, the light curtain protection will be initiated to stop the door closing and reopen the door. This function is disabled in the fire emergency state.
Independent control for the front and rear doors	In case there are two doors in one elevator car, the system provides different automatic control modes for each door as required by the client.
Door re-close	In case the door lock is not applied immediately and the door stays unlocked for a certain amount of time after the door closes, the system will reopen and re-close the door.
Voice	During elevator running, the elevator automatically announces information,

Function	Description
announcement	including the running direction and the next arriving floor.
Idle elevator returning to main floor	During automatic operation, the elevator will automatically return to the designated parking floor after a set time span of no call.
Landing floor change	In case the door open limit signal remains inactive when the actual time of the door open operation exceeds the door open protection time, the elevator will close the door, and automatically move the car to the next registered floor. An E55 fault will then be reported.
Wrong call cancellation	The passenger can cancel the undesired car call by double-pressing the button.
Service floor setting	The system allows to enable/disable the service for one or more floors as required.
Service floor selection	The system allows the setting of the time range and corresponding service floors for the time-based service, or to select the service floor via the service floor switch.
Independent running	The elevator does not respond to any call, and the door needs to be closed manually. When in the group control mode, the elevator will withdraw from the group control, and run independently.
Attendant running	When in the attendant state, the elevator running will be controlled by the attendant.
Low-speed self-rescue	When stopped in non-leveling area during non-inspection period, the elevator will automatically run to a leveling area at a low speed and opens the door if the state of the system is in compliance with the safety requirements.
Automatic startup torque compensation	Before running, the system automatically activates the startup torque compensation based on the current car load to improve the smoothness and the riding comfort during startup.
Direct travel ride	The system automatically generates the speed curve based on the distance, and directly transports the car to the leveling position without speed discontinuity.
Service suspension signal output	When the system fails to respond to hall calls, the corresponding terminal will output the signal of service suspension.
Running times recording	In the automatic running state, the system automatically records the running times of the elevator.
Running time	The system automatically records the accumulative working hours and working

Function	Description
recording	days of the elevator.
Automatic door open/close during door lock malfunction	In case any malfunctions are detected in the door lock circuit during the door open/close, the system will automatically reopen/re-close the door, and report a fault after a set number of failures.
Accessibility service for passengers with disabilities	When the elevator is on standby at the leveling position, if a call is input via the disability operating box, the door open holding time will be extended; similarly, if a door open command is input via the disability operating box, the door open holding time will be extended after the door opens.
Full-load direct travel ride	In the automatic operation state, a full-load car does not respond to hall calls from the passing floors. However, hall calls from these floors can still be registered, and will be executed in the next run (in case of a single elevator) or by other elevators (in case of parallel/group control).
Overload protection	The elevator will activate an alarm and stop running when the detected car load exceeds the rated load.
Fault data recording	The system allows automatic recording of the details of the fault for the reference during maintenance.
Inspection and maintenance	
Bypass running	The commissioning personnel is allowed to use the bypass plug on the operating interface board to activate the inspection state, and to conduct maintenance on the landing door lock or the car door lock via the inspection running.
Simplified maintenance keypad	The commissioning personnel is allowed to use the 3-button keypad on the main control board (MCB) for the commissioning of elevator car running through service floors, door open/close, and other functions alike.
Inspection running	When in the inspection state, the system disables the automatic running and door operation. Press the up/down button to activate the jog running at the inspection speed.
Motor auto-tuning	The system supports with-load and no-load motor auto-tuning for control parameters via simple parameter setting.
Smart adjustment of leveling position	Each time the car arrives at the terminal floor, the system will automatically check and correct the car position via the level-1 slowdown switch. Meanwhile, the slowdown system is used to eliminate the risk of top-hitting and bottom-crashing.
Dual-speed inspection	To reconcile the conflicting aspects of high speed but imprecise running control and low speed yet excessively long running time during inspection, the system

Function	Description
	implements a dual-speed inspection running curve, which substantially increases the inspection efficiency.
Test run	The test run for new elevators includes fatigue run, car call, hall call, hall call response prohibition, door open/close prohibition, terminal floor limit switch shielding, overload signal shielding, etc.
Fire emergency landing	Upon receiving a fire alarm signal, the elevator stops responding to calls. The car will then return to the fire emergency floor, stop operating, and stand by.
Fire emergency and safety	
Firefighter running	After the elevator enters the firefighter running state, the automatic door open/close function is disabled, and the door can be opened/closed only by jog operation (optional) using the door open/close button. When in this state, the elevator responds to car calls only, and only one call can be registered at a time.
Security floor	After the security floor function is enabled, the security floor will remain active from 10:00 p.m. to 06:00 a.m. During this period, the elevator will run to the security floor each time, stop the car, and open the door before it continues running to the destination floor. Such measures improve safety.
Elevator lockout	In the automatic running state, when the elevator lockout switch acts or the set lockout time starts, the system will cancel all the registered calls, transport the car to the lockout floor, stop automatic operation, and turn off the in-car lighting and fan.
Automatic identification	The system automatically identifies the state of power failure, and outputs a signal to the relay to which emergency evacuation automatic switchover function is allocated, for the purpose of implementing emergency rescue at power failure.
Automatic running mode switchover at power failure	For the synchronous motor, when the power supply is interrupted, the system can perform automatic switchover between shorting stator braking mode and controller drive mode, which helps to achieve quick and safe self-rescue.
Main floor verification	When a position abnormality is detected, the system will run the car to each floor until it reaches the terminal floor, and perform verification, which is targeted to ensure the safety and reliability of the system.
Earthquake protection	When the earthquake detection device is triggered and sends a signal to the system, the elevator will stop the car at the nearest floor and halt operation. After the earthquake signal becomes inactive and the fault is manually reset, the elevator restores normal operation.

Function	Description
Energy saving	
In-car energy saving	If there is no running commands within a set time period, the system will automatically cut off the power supply to the car lighting and fan.
Night arrival gong cancellation	When this function is enabled, the elevator will cancel the arrival gong function during a specified time period.
Idle door operator energy saving	The system stops the output of the door close signal after the in-car lighting is turned off, which reduces the power consumption of the door operator.

2. Optional functions

Function	Description	Remarks
Micro-leveling	After landing at a floor, the car may move from the leveling position due to load changes, which may result in unaligned sills that cause inconvenience for the entry and exit of passengers and goods. In such cases, the system allows the car to return to the leveling position at the re-leveling speed while keeping the door open.	
Emergency evacuation at power failure	For elevators configured with an emergency power supply, the system uses this power supply to implement low-speed self-rescue at power failure.	
Advance door opening	In the automatic running state, when the elevator speed is smaller than 0.2 m/s during the stop process and the door zone signal is active, the system shorts the door lock signal via the shorting door lock circuit contactor, and outputs an advance door open signal. This measure maximizes the elevator efficiency.	
IC card	Passengers are required to use IC cards to get to the floors where the entry requires authorization.	
Parallel control	The system supports parallel control of up to two elevator, which is targeted to meet different needs of clients.	
Anti-nuisance function	The system automatically identifies the number of in-car passengers, and compare it with that of car calls. In case the number of calls exceeds the number of passengers, a nuisance state will be determined, and the system will cancel all car calls. Car calls need to be re-registered correctly before running.	

Chapter 1 Important Safety Instructions

1.1 Safety announcements

(1) Before the installation, operation, and maintenance of this product, thoroughly and carefully read this manual, and comply with all the instructions indicated herein.

(2) To ensure safety for the personnel and property, closely follow the guidance on the stickers/signs, and the instructions in this manual during the installation, operation, and maintenance of this product.

(3) The "Caution," "Warning," and "Danger" notices in this manual do not represent all safety precautions that should be followed, but rather serve as supplements to all safety precautions.

(4) This product should be used in environments that meet the design specifications; otherwise, malfunction may occur. Issues such as abnormal function or component damage due to failure to comply with relevant regulations are not covered under product warranty.

(5) We will not be liable for any legal responsibilities arising from personal injuries and property losses caused by improper operation of this product.

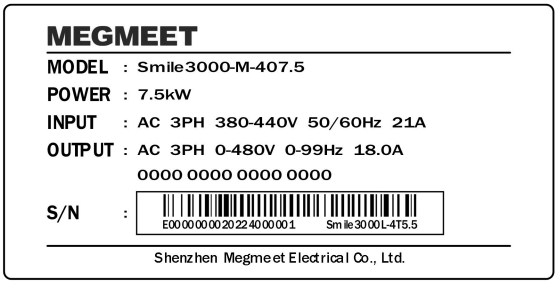
1.2 Safety rating definitions and precautions

Sign	Definition
 Danger	It indicates that failure to operate according to instructions/requirements will result in death or serious personal injuries.
 Warning	It indicates that failure to operate according to instructions/requirements may result in death or serious personal injuries.
 Caution	It indicates that failure to operate according to instructions/requirements may result in minor personal injuries or property damage.

Chapter 2 Product Information

2.1 Nameplate and model

2.1.1 Product nameplate



2.1.2 Product naming rule

Smile3000 ① - M ② - 40 75 ③ ④

Number	Item	Description	Number	Item	Description
①	Product name	Smile3000	③	Voltage rating	40: Three-phase AC 380 V 20: Single-phase AC 220 V
②	Type of the control cabinet	Standard control cabinet	④	Power rating	7.5 to 75: 7.5 kW to 75 kW

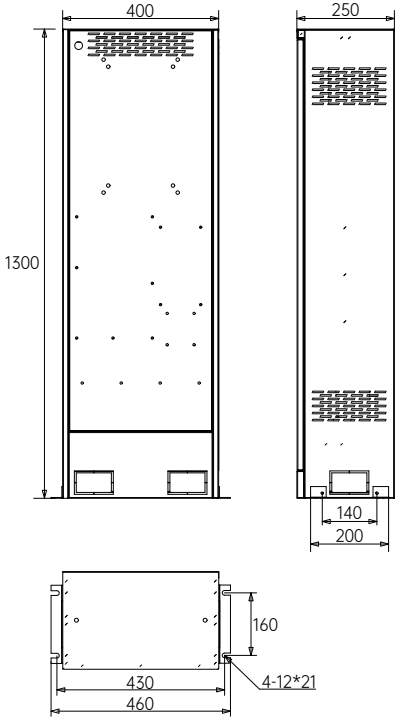
2.2 Product models

Integrated cabinet model	Power capacity (kVA)	Input current (A)	Output current (A)	Power (kW)
Smile3000-M-405.5	8.5	15	13	5.5
Smile3000-M-407.5	11	21	18	7.5
Smile3000-M-4011	18	28	27	11
Smile3000-M-4015	22	33	33	15

Integrated cabinet model	Power capacity (kVA)	Input current (A)	Output current (A)	Power (kW)
Smile3000-M-4018.5	24	40	39	18.5
Smile3000-M-4022	30	50	48	22
Smile3000-M-4030	42	62	60	30
Smile3000-M-4037	50	75	75	37
Smile3000-M-4045	60	90	90	45
Smile3000-M-4055	72	112	110	55
Smile3000-M-4075	100	157	152	75

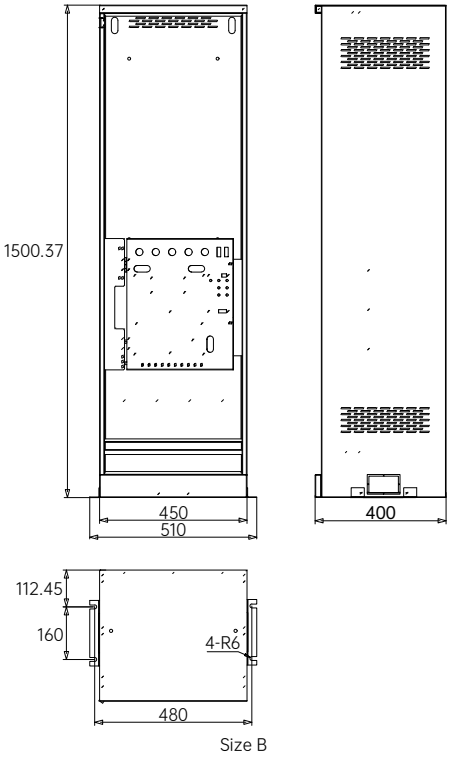
2.3 Appearance and mounting dimension

(1) Size A: 5.5 to 30 kW



Size A

(2) Size B: 37 to 75 kW



2.4 Technical specifications

Item	Specification	
Basic specifications		
Max. frequency	99 Hz	
Carrier frequency	2 kHz to 16 kHz; automatic adjustment of carrier frequency based on load characteristics	
Motor control mode	Closed-loop vector control	
Startup torque	0.5 Hz / 180% (open-loop vector control) 0 Hz / 200% (closed-loop vector control)	
Speed adjustment	1:100 (open-loop vector control)	1:1000 (closed-loop vector control)

Item	Specification	
range		1:50 (V/F control)
Speed stability accuracy	±0.5% (open-loop vector control)	±0.05% (closed-loop vector control)
Torque control accuracy	±5% (closed-loop vector control)	
Over-load capacity	60 s for 150% of rated current; 1 s for 200% of rated current	
Motor tuning	With-load tuning; no-load tuning	
Distance control	Direct landing mode which supports flexible leveling position adjustment	
Acceleration and deceleration curves	Automatic generation of multiple speed curves	
Elevator slowdown	Innovative and reliable slowdown function with automatic identification of the deceleration frame	
Shaft auto-tuning	Accurate 32-bit recording of shaft position	
Leveling adjustment	Flexible leveling adjustment	
Startup torque compensation	It calculates the appropriate startup pre-torque with coordination of the load cell; no-load-cell pre-torque self-adaption function is also available.	
Real-time clock	It provides ultra-high-accuracy real-time clock for multiple functions, including time-based service, peak-time service, and automatic password.	
Test function	It provides multiple elevator commissioning functions with ultra convenience.	
Fault protection	Comprehensive and multi-category elevator fault classification and handling	
Intelligent management	This function provides remote elevator monitoring, user management, and group control.	
Safety self-check at power-on	This function provides safety check for peripheral devices, such as grounding and short circuit, when powered on.	
Status monitoring	This function enables assessment of the elevator's operational status based on various feedback signals to ensure normal operation.	
Input and output		
Power cable wiring terminal	Control cabinet three-phase input terminal: R, S, T, (N) Motor power cable input terminal: U, V	
Control terminal	Mains power input terminal; Motor brake coil wiring terminal; fire-fighting	

Item	Specification
block	linkage and fire-fighting output terminal; (shaft lighting terminal; speed limiter terminal)
PG card interface	It provides connection for encoder cables.
Operation & commissioning	
Control cabinet operating panel (machine room; MR)	Emergency stop switch, emergency electrical operation (EEO) switch, and EEO up/down button.
Control cabinet operating panel (machine-room-less; MRL)	Shaft lighting switch, speed limiter reset button, and electrical brake release button.
Keypad	3-digit LED display, which acts as a commissioning controller to implement part of the functions.
Operating panel	5-digit LED display, which can check and modify most of the parameters and monitor the system status.
Mobile phone APP	This device enables viewing and modification of all parameters, upload and download of parameters, monitoring of parameters for each system status, including the running curve.
Protection	
Phase loss protection	The AC drive in the control cabinet features phase loss detection. In case of an input phase-sequence error, the control system will report a phase-loss fault to halt the elevator and prevent accidents.
Grounding protection	There is a copper grounding bar installed inside the control cabinet. It is required to connect the external grounding cables to the copper bar, which ensures the unified electromotive force between the devices and the ground and prevents electric shock.
Temperature protection	The temperature of the transformer will rise when the system runs for an excessively long time or under other circumstances that may cause the temperature to rise. If the temperature exceeds 105°, the system will activate protection and halt operation due to the protection setting in the transformer. When the temperature drops below 75°, the system will resume operation.
Short-to-circuit protection	This function protects the drive controller when there is an overcurrent caused by a short circuit between any two phases on the output side

Item	Specification
Speed abnormality protection	When the speed feedback via the encoder exceeds the limit value, or when there is a significant deviation between the torque limit and the speed measurement feedback, the system will immediately activate the protection function, report an alarm, and prohibit the elevator from running again, thus providing quick protection against abnormal elevator speeds.
Rotary encoder abnormality protection	The system will immediately activate fault protection to prevent accidents when situations, such as phase loss, reverse connection, disconnection, and pulse interference of the rotary encoder, occur.
Leveling switch abnormality protection	There are two types of leveling switch abnormalities: switch failure and switch adhesion. The system judges these abnormalities based on the changing process of the feedback leveling signal. If there is no change in the leveling signal within the set time, the system will report an alarm.
Floor data abnormality protection	The system stores the floor information obtained through shaft auto-tuning. If the data is abnormal, a fault will be prompted during the first operation after powering on. During actual operation, this data is continuously verified against the signal input position. If the deviation is too large, an alarm will be issued.
Environment	
Altitude	Lower than 1000 m (derated by 1% for each 100 m higher if the altitude is above 1000 m)
Ambient temperature	-10℃ to +45℃ (derated use if the ambient temperature is above 40℃)
Humidity	Less than 95%RH, no condensing
Vibration	Less than 5.9 m/s^2 (0.6g)
Storage temperature	-20℃ to +55℃
Pollution degree	PD20
IP rating	IP20
Applicable power grid	TN/TT

2.5 Model selection table

When the control cabinet product is delivered, the following optional accessories will be included randomly. Clients can contact the Megmeet business personnel if any specific need exists. For detailed descriptions of the options, please refer to "Smile3000 Series Integrated Elevator Controller User Manual".

Model	Name	Function
Smile3000-CTB-A	Car top control board (CTB)	This option serves as the car control board for the Smile3000 integrated elevator controller.
Smile3000-HCB-R1	Car/Hall display and call board	This option is used to receive hall calls and display the current floor number and the current running direction; the floor display board can also be used as the car display board.
Smile3000-CCB-A	Car control board (car call board)	This option serves as the communication interface between the user and the control system, and is used to register the button commands and output the button light signals.
Smile3000-PG-S	PG card 1	For Sin/Cos encoders
Smile3000-PG-P	PG card 2	For push-pull output or open-collector incremental encoders
Smile3000-SCB-A	UCMP board	This option detects the unintended car movement, which facilitates the advance door open function.
Smile3000-MCB-A	Main control board	This option is used with the Smile3000 series products. It receives and sends shaft/car signals, and executes the commands.
Smile3000-MCB-B	Main control board	This option is used with the Smile3000 series products. It receives and sends shaft/car signals, and executes the commands.
Smile3000-CTB-B	Car top control board	This option communicates with the MCB and the CCB, and also controls the signal of the door system.
Smile3000-CPB-A	Pit board	This option communicates with the MCB, and also controls the elevator running during pit inspection.
Smile3000-CCB-B	Car control board	This option communicates with the CCB, receives input commands in the car, and outputs the information for display.
Smile3000-CEB-B	Car control expansion board	This option is used with the Smile3000 series products, and is capable of control up to 48 floors.
Smile-IOT	IoT module	This option is used to monitor the elevator system and carry

Model	Name	Function
		out the functions such as the data collection of the running parameters, information network transmission, and automatic alarm. The management personnel can perform real-time monitoring and remote inspection of the elevator running status using the Megmeet elevator IoT platform.

Chapter 3 Mechanical Installation

3.1 Installation requirements

3.1.1 Safety requirements on environment

Item	Requirement
Altitude	Normal use at an altitude less than 1000 m; derated by 1% for every 100 m higher when the altitude is above 1000 m; max. altitude 3000 m.
Ambient temperature	-10℃ to +45℃, ambient temperature change less than 0.5℃/min; derated by 1.5% in rated current for every 1℃ higher when the temperature is above 40℃; max. ambient temperature 45℃。
Humidity	Less than 95% RH, no condensing
Vibration	Less than 5.9 m/s^2 (0.6g)
Height	In case the cabinet is installed in a machine room, the clear height of the machine room working area shall not be less than 2.5 m.
Spacing in front of cabinet	Make sure to reserve a 0.5 m * 0.7 m clearance area in front of the cabinet for inspection and repairs.
Ventilation	Adequate ventilation should be provided in the machine room to protect the control cabinet and cables from dust, harmful gases, and moisture damage.

3.1.2 Installation direction and space requirements

For the dimensions of the control cabinet and the installation diagram of the base plate, please refer to the relevant drawings in the technical documentation. All parts of the cabinet should be installed according to the drawings, with sufficient peripheral spacing to ensure adequate airflow, maximum door swing, and space required for maintenance. Provide access pathways (with sufficient width) to the installation site and make sure space is available for the transportation equipment of the product.

(1) MR cabinet installation

Under normal conditions, make sure the back of the entire device is properly placed, and there is no other special requirement regarding the back of the cabinet during installation. The height of the machine room for installation shall not be less than 2500 mm. The distance between the cabinet front and the wall shall not be less than 700 mm, and the distance between the cabinet side and the wall shall not be less than 600 mm. The entire cabinet must be fixed to a firm and hard surface using expansion bolts.

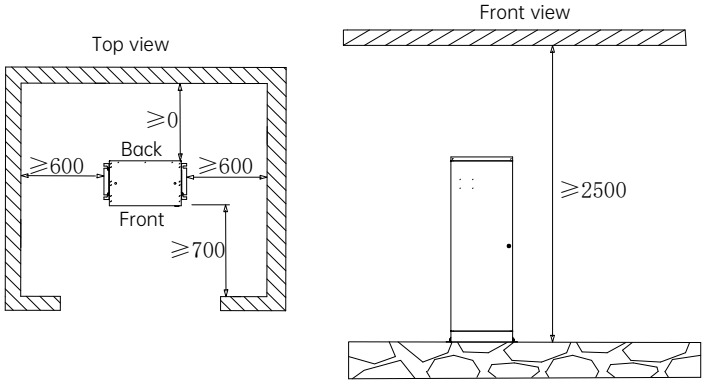


Figure 3-1 Diagram of MR cabinet installation space requirements (unit: mm)

Caution

The above space requirements are applicable to both the wall-mounted cabinet and the floor-mounted cabinet.

(2) MRL cabinet installation

Under normal conditions, the back of the entire device is connected to the shaft. The height of the installation space shall not be less than 2000 mm, and shall be higher than the height of the cabinet. The distance between the cabinet front and the wall shall not be less than 700 mm. There is no special requirement regarding the distance between the side of the cabinet and the wall; however, such distance shall be adequate to properly place the cabinet.

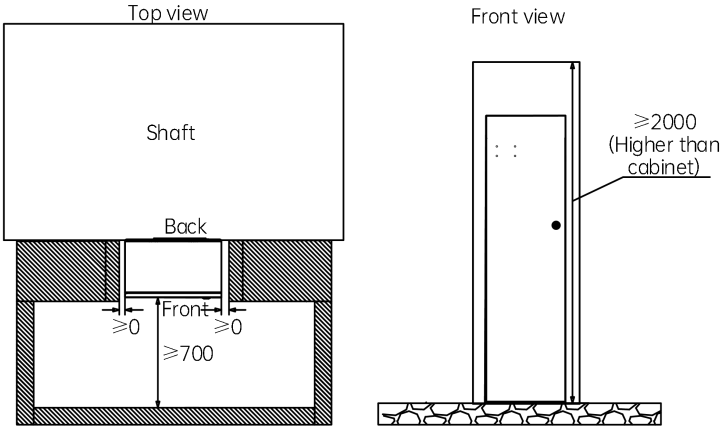


Figure 3-2 Diagram of MRL cabinet installation space requirements (unit: mm)

3.2 Installation method

Floor-mounted installation

There are two U-shaped installation holes respectively on the left and right sides of the cabinet base plate, and their positions and dimensions are shown in the figure below.

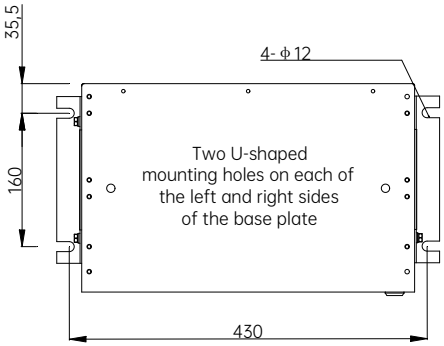


Figure 3-3 Positions and dimensions of base plate installation holes (unit: mm)

Fix the cabinet to the floor using 4 M8 expansion bolts. The floor-mounted installation and fixing of the cabinet is shown in the figure below.

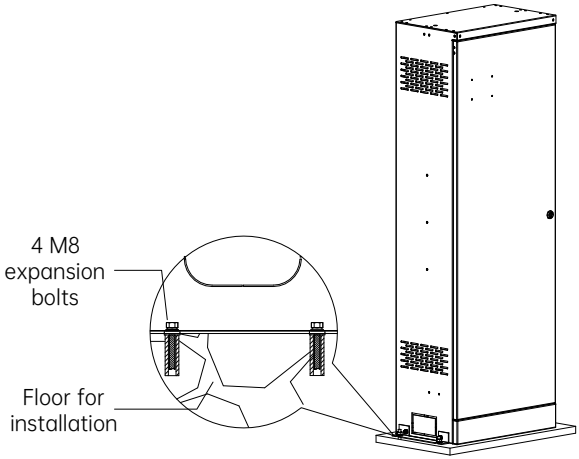


Figure 3-4 Diagram of floor-mounted installation and fixing of the cabinet

Chapter 4 Electrical Installation

For different types of control cabinets, their electrical installation methods also vary. Clients need to select the appropriate control cabinet according to the actual on-site situation. Under normal conditions, an MR control cabinet must be equipped with a power distribution box externally, and each elevator shall be separately equipped with a main switch that can cut off all the power supply circuits of that elevator.

Caution

- ✧ Peripheral cables of the control cabinet must be complete.
- ✧ Make sure to follow the diameter and withstand voltage requirements of the power cables and the control power supply input cables.
- ✧ Input and output cables must be separately wired to prevent cross-wiring and insulation damage that may cause hazards.
- ✧ Signal cables and power cables must be wired separately. Make sure to employ shielded twisted pair cables as the analog signal cables, with one end reliably grounded.
- ✧ Before measuring the transformer's insulation resistance or conducting power line frequency tests, the wiring between the MCB and interface board must be disconnected; otherwise, unit damage may occur.
- ✧ No jumper wires shall be left inside the control cabinet; otherwise, potential hazards may arise.

4.1 Main control board (Smile3000-MCB)

4.1.1 Main control board (Smile3000-MCB) diagram

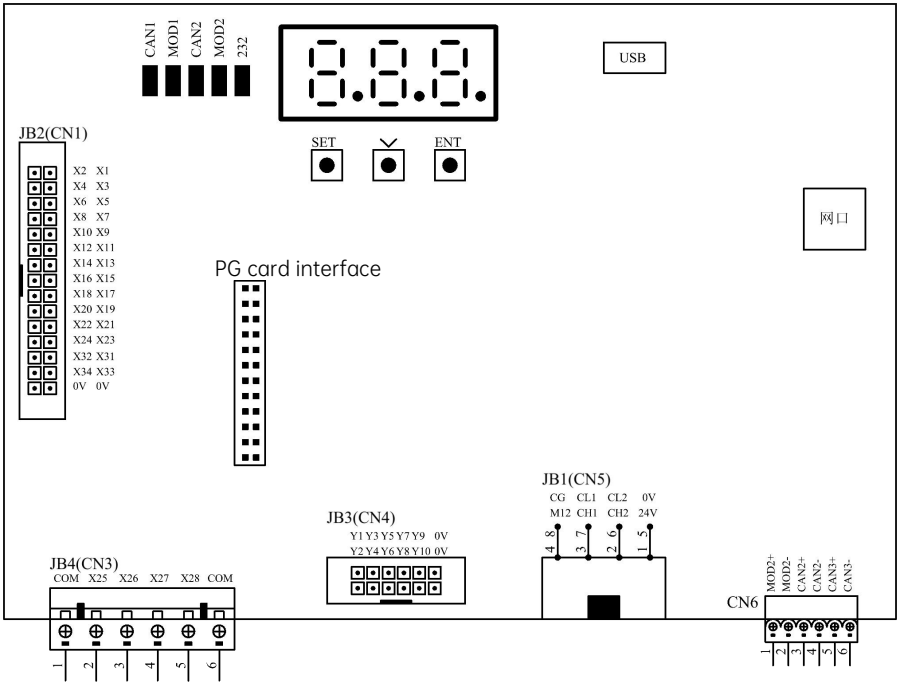


Figure 4-1 Smile3000 integrated controller and peripheral devices connection diagram

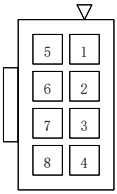
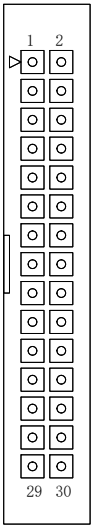
4.1.2 Indicators

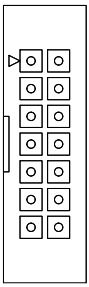
Table 4-1 LED indicators

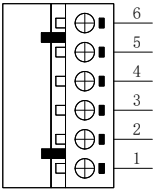
Indicator mark	Function	Status description
CAN1	Indicator of communication with the car top control board	Flashing (in green) when the communication is normal
MOD1	Indicator of communication with the display and call board	Flashing (in green) when the communication is normal

4.1.3 Terminal instructions

To be used in conjunction with the control cabinet I/O board (DT-KZG-CJB), the parameter definitions of the I/O ports on the main control board Smile3000-MCB have been correspondingly set as default upon leaving the factory. Users can also modify them according to actual needs.

Plugin number	Plugin port definition	Port number	Port function	
JB1 (power supply communication port) (for connection with the control cabinet I/O board)		1	24+	24 V DC
		5	0 V	0 V (24 V DC)
		2	CAN1+	CAN1+: CTB CAN communication port
		6	CAN1-	CAN1-: CTB CAN communication port
		3	485+	485+: Modbus communication port for calls
		7	485-	485-: Modbus communication port for calls
		4	M12 V	12 V DC
		8	GND	Communication shielding ground
JB2 (low-voltage input port) (for connection with the control cabinet I/O board)		1	X1	Up leveling
		2	X2	Door zone
		3	X3	Down leveling
		4	X4	Shorting door lock circuit contactor output feedback
		5	X5	Shorting motor stator contactor feedback
		6	X6	RUN contactor feedback
		7	X7	Brake contactor 1 feedback
		8	X8	Brake contactor 2 feedback
		9	X9	KAM feedback
		10	X10	Electric brake release
		11	X11	Door lock bypass
		12	X12	EEO
		13	X13	EEO upward run

Plugin number	Plugin port definition	Port number	Port function	
		14	X14	EEO downward run
		15	X15	Up level-1 slowdown
		16	X16	Up level-2 slowdown
		17	X17	Down level-1 slowdown
		18	X18	Down level-2 slowdown
		19	X19	Brake travel switch
		20	X20	Brake travel switch 2
		21	X21	Traction machine overheat
		22	X22	Forced electric brake release
		23	X23	Emergency rescue run
		24	X24	Standby
		25	X31	Overload
		26	X32	Standby
		27	X33	Earthquake signal
		28	X34	Fire emergency signal
		29	0 V	0 V (24 V DC)
JB3 (output port) (for connection with the control cabinet I/O board)		1	Y1	Shorting motor stator contactor
		2	Y2	RUN contactor
		3	Y3	Brake contactor 1
		4	Y4	Brake contactor 2
		5	Y5	KAM output
		6	Y6	Electric brake release output
		7	Y7	Shorting door lock circuit contactor
		8	Y8	Fire emergency floor arrival
		9	Y9	Destination floor arrival output

Plugin number	Plugin port definition	Port number	Port function	
		10	Y10	Rescue completion output
		11	0 V	0 V (24 V DC)
		12	0 V	0 V (24 V DC)
JB4 (high-voltage input port) (for connection with the control cabinet I/O board)		1	XCOM	
		2	X25	High-voltage test of safety circuit (110 V AC)
		3	X26	High-voltage test for front door lock short-circuit (110 V AC)
		4	X27	High-voltage test for rear door lock short-circuit (110 V AC)
		5	X28	High-voltage test for integrated door lock circuit (110 V AC)
		6	XCOM	High-voltage test COM (110 V AC)

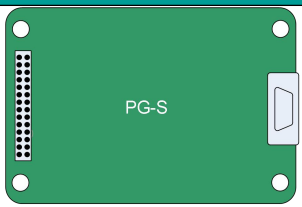
4.2 PG card

4.2.1 Asynchronous motor PG card (PG-P)

PG card appearance	Applicable encoder type	PG card port		Encoder port	
	Push-pull output or open-collector output incremental encoders	1	12 V		V+
		2	COM (0 V)		V-
		3	PGA		A
		4	PGB		B

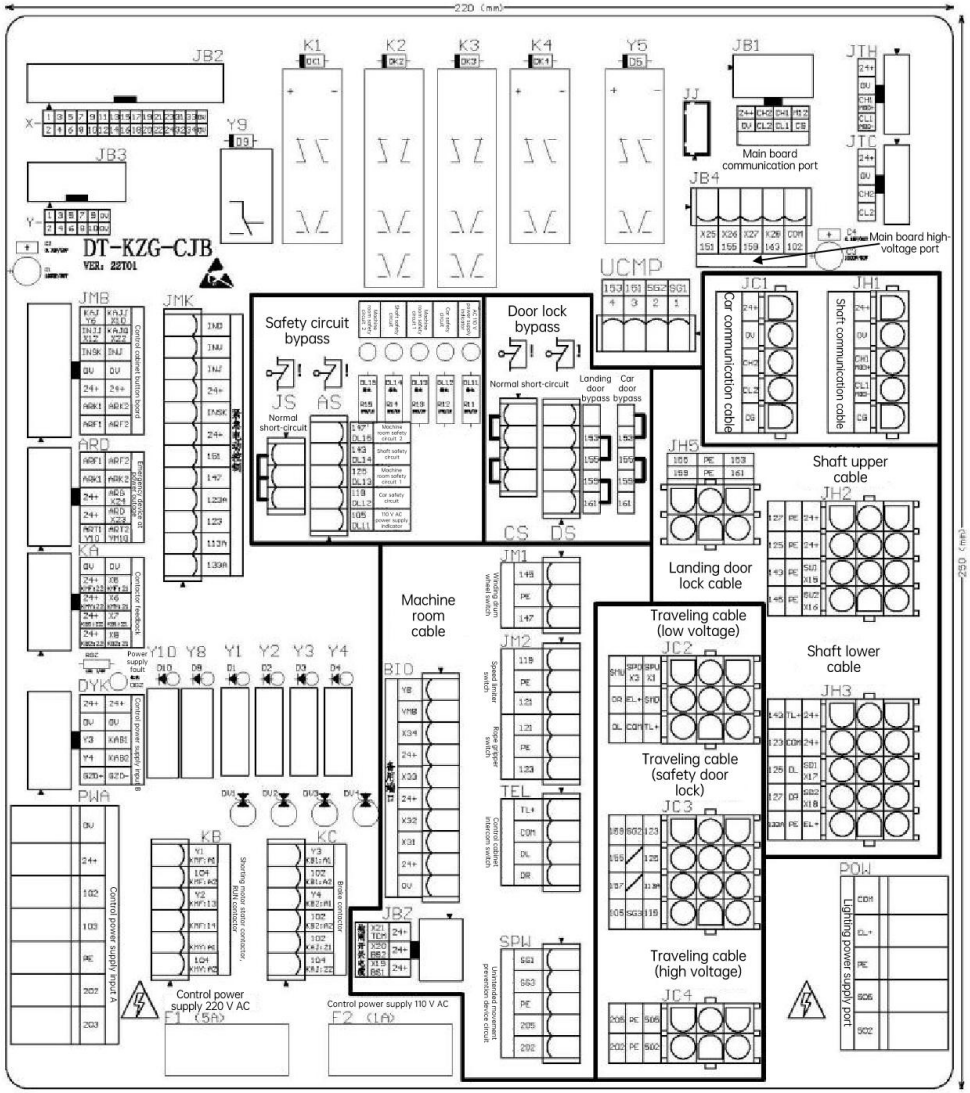
4.2.2 Synchronous motor PG card (PG-S)

PG card appearance	Applicable encoder type	PG card port		Encoder port	
	Sin/Cos encoders (ERN1387)	1	B-	5a	B-
		2	NC		NC

PG card appearance	Applicable encoder type	PG card port		Encoder port	
		3	R+	4b	R+
		4	R-	4a	R-
		5	A+	6b	A+
		6	A-	2a	A-
		7	0 V	3a+5b	0 V
		8	B+	3b	B+
		9	5V	7a+1b	5 V
		10	C+	7b	C+
		11	C-	1a	C-
		12	D+	2b	D+
		13	D-	6a	D-
		14	NC		NC
		15	NC		NC

4.3 Control cabinet I/O board (DT-KZG-CJB)

4.3.1 Control cabinet I/O board (DT-KZG-CJB) diagram



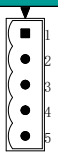
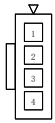
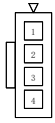
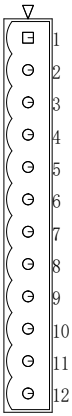
4.3.2 Control cabinet I/O board (DT-KZG-CJB) indicator diagram

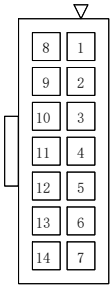
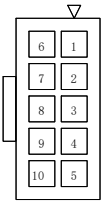
Indicator mark	Function	Status description
DL11	110 V AC power indicator	On when the 110 V AC power is normal
DL12	Car safety circuit	On when the car safety circuit is normal
DL13	Machine room safety circuit 1	On when the machine room safety circuit 1 is normal
DL14	Shaft safety circuit	On when the shaft safety circuit is normal
DL15	Machine room safety circuit 2 (excluding the control cabinet emergency stop)	On when the machine room safety circuit 2 is normal

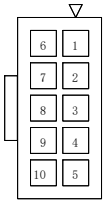
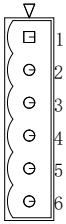
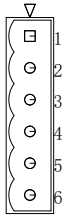
4.3.3 Control cabinet I/O board (DT-KZG-CJB) port instructions

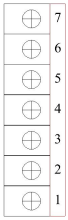
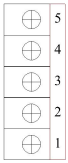
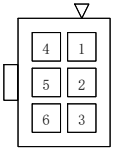
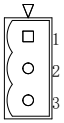
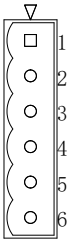
To facilitate users' operation, the ports of the control cabinet I/O board (DT-KZG-CJB) have been pre-configured. Users can make corresponding selections and adjustments according to their actual needs.

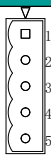
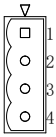
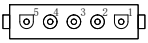
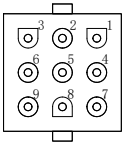
Plugin number	Plugin port definition	Port	Port function	
JB1 (power supply communication port) (for connection with the MCB)	Same with that of the MCB plugins		Same with that of the MCB plugins	
JB2 (low-voltage input port) (for connection with the MCB)	Same with that of the MCB plugins		Same with that of the MCB plugins	
JB3 (output port) (for connection with the MCB)	Same with that of the MCB plugins		Same with that of the MCB plugins	
JB4		1	151	High-voltage test for safety circuit (110 V

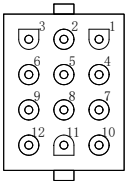
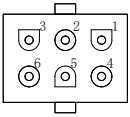
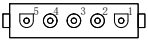
Plugin number	Plugin port definition	Port	Port function	
(high-voltage input port) (for connection with the MCB)				AC)
		2	155	High-voltage test for front door lock short-circuit (110 V AC)
		3	159	High-voltage test for rear door lock short-circuit (110 V AC)
		4	163	High-voltage test for integrated door lock circuit (110 V AC)
		5	102	High-voltage test COM (110 V AC)
JTC (standby) (CAN2 communication port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH2	CAN2+: CTB CAN communication port
		4	CL2	CAN2-: CTB CAN communication port
JTH (standby) (485 communication port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH1	485+: Modbus communication port for calls
		4	CL1	485-: Modbus communication port for calls
JMK (control cabinet inspection port)		1	133A	EEO safety circuit short-circuit
		2	113A	
		3	123	EEO safety circuit cut-off
		4	123A	
		5	147	Control cabinet emergency stop
		6	151	
		7	24+	EEO Interlock
		8	INSK	
		9	24+	EEO
		10	INJ	

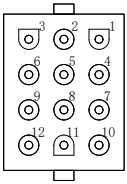
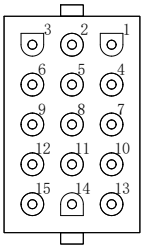
Plugin number	Plugin port definition	Port	Port function	
		11	INU	EEO upward run signal
		12	IND	EEO downward run signal
JBM (button board port)		1	ARF1	ARD / Electric brake release power supply restart button
		8	ARF2	
		2	ARK1	ARD main power supply switch
		9	ARK2	
		3	24+	24 V DC
		10	24+	
		4	0 V	0 V (24 V DC)
		11	0 V	
		5	INSK	EEO Interlock
		12	INJ	EEO
		6	INJJ	EEO signal
		13	KAJQ	Forced brake release signal
		7	KAJ	Brake release signal
		14	KAJJ	Brake release feedback
ARD (ARD port)		1	ART1	ARD rescue completion
		6	ART2	
		2	24+	ARD operation signal
		7	ARY	
		3	24+	ARD fault signal
		8	ARG	
		4	ARK1	ARD main power supply switch
		9	ARK2	
		5	ARF1	ARD / Electric brake release power supply restart button
		10	ARF2	

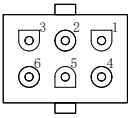
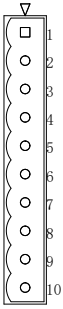
Plugin number	Plugin port definition	Port	Port function	
KA (contactor inspection port)		1	24+	Brake contactor 1 inspection (NC)
		6	X8	
		2	24+	Brake contactor 2 inspection (NC)
		7	X7	
		3	24+	RUN contactor inspection (NC)
		8	X6	
		4	24+	24+ / X5 independent shorting motor stator contactor inspection (NC) 24+ / 0 V / X5 integrated shorting motor stator contactor inspection (pulse)
		9	X5	
		5	0 V	
		10	0 V	
KB (port for RUN contactor and Shorting motor stator contactor)		1	KMY: A2	RUN contactor coil (110 V AC)
		2	KMY: A1	
		3	KMF: 14	Independent shorting motor stator contactor contact (NO) (optional)
		4	KMF: 13	
		5	KMF: A2	Independent shorting motor stator contactor coil (110 V AC) (optional)
		6	KMF: A1	
KC (brake contactor port)		1	KAJ: 22	Electric brake release relay contact (NC)
		2	KAJ: 21	
		3	KB2: A2	Brake contactor 2 coil (110 V AC)
		4	KB2: A1	
		5	KB1: A2	Brake contactor 1 coil (110 V AC)
		6	KB1: A1	
PWA (power supply input port)		1	203	220 V AC control power supply input
		2	202	
		3	PE	Ground wire
		4	103	110 V AC power supply input

Plugin number	Plugin port definition	Port	Port function	
		5	102	
		6	24+	24 V DC power supply input
		7	0 V	
POW (power supply port for lighting)		1	502	220 V AC lighting power supply input
		2	505	
		3	PE	Ground wire
		4	EL+	Power supply 12 V DC output for emergency lighting (emergency power supply)
		5	COM	
JBZ (brake inspection switch port)		1	TCM	Traction machine overheat inspection (NC)
		4	24+	
		2	BS2	Brake travel switch 2 (NC)
		5	24+	
		3	BS1	Brake travel switch 1 (NC)
		6	24+	
JM1 (Winding drum wheel switch port)		1	145	Winding drum wheel switch
		2	PE	
		3	147	
JM2 (Speed limiter or rope gripper switch)		1	119	Speed limiter switch
		2	PE	
		3	121	
		4	121	Rope gripper switch (optional)
		5	PE	
		6	123	
SPW		1	SG1	Additional brake trigger signal

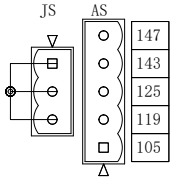
Plugin number	Plugin port definition	Port	Port function	
(Additional brake port)		2	SG3	
		3	PE	Ground wire
		4	205	Additional brake power supply 220 V AC
		5	202	
TEL (machine room intercom device port)		1	TL+	Intercom device power supply 12 V DC (emergency power supply)
		2	COM	0 V (12 V DC) (emergency power supply)
		3	DL	Intercom signal L
		4	DR	Intercom signal R
JC1 (traveling cable communication port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH2	CAN2+: CTB CAN communication port
		4	CL2	CAN2-: CTB CAN communication port
		5	CG	Communication shielding ground
JC2 (traveling cable low-voltage port)		1	SPU	Up leveling (non-communication period)
		2	SPD	Down leveling (non-communication period)
		3	SMU	Upper door zone
		4	SMD	Lower door zone
		5	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		6	DR	Intercom signal R
		7	TL+	Intercom device power supply 12 V DC (emergency power supply)
		8	COM	0 V (12 V DC) (emergency power supply)
		9	DL	Intercom signal L
JC3		1	123	Bypass short-circuit

Plugin number	Plugin port definition	Port	Port function	
(traveling cable safety door lock)		2	SG2	Auxiliary lock of car door
		3	159	Car door 2 door lock return
		4	125	Bypass short-circuit
		5	——	
		6	155	Car door lock
		7	113A	EEO Interlock
		8	——	
		9	157	Car door 1 door lock return
		10	119	Car safety return
		11	SG3	Auxiliary lock of car door
		12	105	Car safety circuit
JC4 (traveling cable high-voltage port)		1	505	220 V AC lighting power supply
		4	502	
		2	PE	Ground wire
		5	PE	
		3	205	220 V AC control power supply
		6	202	
JH1 (shaft communication cable port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH1	485+: Modbus communication port for calls
		4	CL1	485-: Modbus communication port for calls
		5	CG	Communication shielding ground
JH2 (upper shaft cable port)		1	24+	24 V DC (COM)
		2	PE	Ground wire
		3	127	Upper shaft safety return (short-circuited

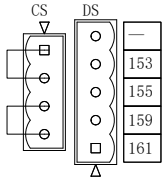
Plugin number	Plugin port definition	Port	Port function	
				when not in use) (when the final limit switch is installed in the shaft)
		4	24+	24 V DC (COM)
		5	PE	Ground wire
		6	125	Upper shaft safety circuit (short-circuited when not in use) (when the final limit switch is installed in the shaft)
		7	SU1	Up level-1 slowdown (when installed in the shaft)
		8	PE	Ground wire
		9	143	Upper shaft emergency stop (short-circuited when not in use) (traction machine emergency stop, or machine room elevated-platform emergency stop)
		10	SU2	Up level-2 slowdown (when installed in the shaft)
		11	PE	Ground wire
		12	145	Upper shaft emergency stop return (short-circuited when not in use) (traction machine emergency stop, or machine room elevated-platform emergency stop)
JH3 (shaft lower cable port)		1	24+	24 V DC (COM)
		2	TL+	Intercom device power supply 12 V DC (emergency power supply)
		3	143	Shaft lower safety return
		4	24+	24 V DC (COM)
		5	COM	0 V (12 V DC) (emergency power supply)
		6	123	Bypass short-circuit
		7	SD1	Down level-1 slowdown (when installed in the shaft)
		8	DL	Intercom signal L

Plugin number	Plugin port definition	Port	Port function	
		9	125	Bypass short-circuit
		10	SD2	Down level-2 slowdown (when installed in the shaft)
		11	DR	Intercom signal R
		12	127	Shaft lower safety circuit
		13	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		14	PE	Ground wire
		15	133A	EEO Interlock
JH5 (landing door lock cable port)		1	153	Door lock circuit of landing door 1
		2	PE	
		3	155	
		4	159	Door lock circuit of landing door 2
		5	PE	
		6	161	
BIO (standby I/O port)		1	Y8	Fire-fighting linkage output (main floor arrival) Passive Signal
		2	Y8M	
		3	X34	fire-fighting linkage input Passive Signal
		4	24+	
		5	X33	Earthquake signal (NO)
		6	24+	
		7	X32	
		8	X31	Machine room overload (NC)
		9	24+	
		10	0 V	

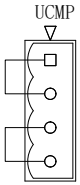
4.3.4 Safety circuit bypass port instructions

Plugin number		Port function	
	1	105	110 V AC power supply
	2	119	Car safety circuit
	3	125	Machine room safety circuit 1
	4	143	Shaft safety circuit
	5	147	Machine room safety circuit 2 (excluding control cabinet emergency stop)

4.3.5 Door lock bypass port instructions

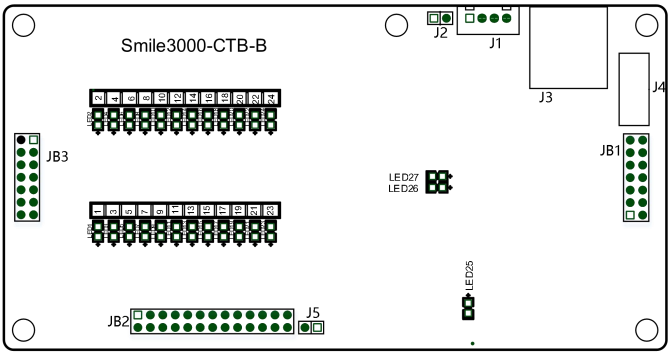
Plugin number		Port function	
	1	161	Landing door lock safety circuit input of rear door
	2	159	Landing door lock safety circuit output of rear door
	3	155	Landing door lock safety circuit input of front door
	4	153	Landing door lock safety circuit output of front door
	5	——	-

4.3.6 UCMP port instructions

Plugin number		Port function	
	1	SG1	UCMP function testing port short-circuit
	2	SG2	UCMP function testing port short-circuit
	3	151	Safety circuit input
	4	153	Landing door lock safety circuit output of front door

4.4 Car top board (Smile3000-CTB)

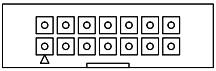
4.4.1 Car top board (Smile3000-CTB) diagram

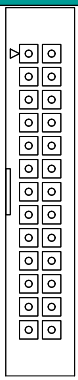
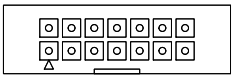


4.4.2 Car top board (Smile3000-CTB) indicator instructions

Indicator mark	Function	Status description
D26	For indicator light communication with the MCB	Flashing (in green) when the communication is normal
D27	For indicator light communication with the command list	Flashing (in green) when the communication is normal

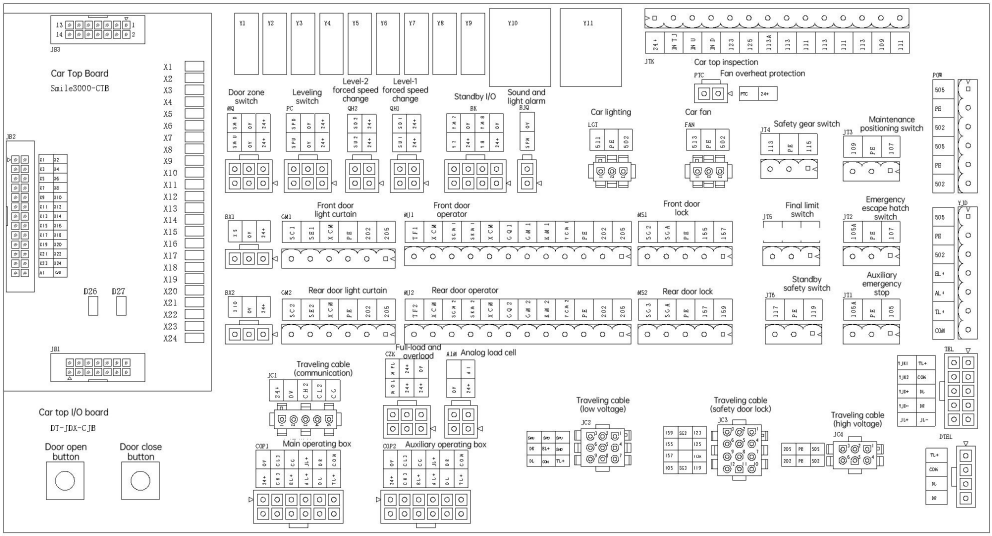
4.4.3 Car top board (Smile3000-CTB) port instructions

Plugin number	Plugin port definition	Port function	
JB1 (Power supply, or communication port)		Power supply, or communication port	
JB2 (Input port)		X1	Door 1 open limit
		X2	Door 1 close limit
		X3	Door operator 1 overheat

<table>
<tr><th>Plugin number</th><th>Plugin port definition</th><th colspan="2">Port function</th></tr>
<tr><td rowspan="25"></td><td rowspan="25"> 
<table>
<tr><td>X1</td><td>X2</td></tr>
<tr><td>X3</td><td>X4</td></tr>
<tr><td>X5</td><td>X6</td></tr>
<tr><td>X7</td><td>X8</td></tr>
<tr><td>X9</td><td>X10</td></tr>
<tr><td>X11</td><td>X12</td></tr>
<tr><td>X13</td><td>X14</td></tr>
<tr><td>X15</td><td>X16</td></tr>
<tr><td>X17</td><td>X18</td></tr>
<tr><td>X19</td><td>X20</td></tr>
<tr><td>X21</td><td>X22</td></tr>
<tr><td>X23</td><td>X24</td></tr>
<tr><td>AI</td><td>GND</td></tr>
</table></td><td>X4</td><td>Door 1 light curtain</td></tr>
<tr><td>X5</td><td>Door 1 safety edge</td></tr>
<tr><td>X6</td><td>Door 2 open limit</td></tr>
<tr><td>X7</td><td>Door 2 close limit</td></tr>
<tr><td>X8</td><td>Door operator 2 overheat</td></tr>
<tr><td>X9</td><td>Door 2 light curtain</td></tr>
<tr><td>X10</td><td>Door 2 safety edge</td></tr>
<tr><td>X11</td><td>Fan motor overheat protection</td></tr>
<tr><td>X12</td><td>Inspection</td></tr>
<tr><td>X13</td><td>Inspection up running</td></tr>
<tr><td>X14</td><td>Inspection down running</td></tr>
<tr><td>X15</td><td>Up level-1 slowdown</td></tr>
<tr><td>X16</td><td>Down level-1 slowdown</td></tr>
<tr><td>X17</td><td>Up level-2 slowdown</td></tr>
<tr><td>X18</td><td>Down level-2 slowdown</td></tr>
<tr><td>X19</td><td>Up leveling</td></tr>
<tr><td>X20</td><td>Down leveling</td></tr>
<tr><td>X21</td><td>Overload</td></tr>
<tr><td>X22</td><td>Full-load</td></tr>
<tr><td>X23</td><td>Door open test</td></tr>
<tr><td>X24</td><td>Door close test</td></tr>
<tr><td>AI</td><td rowspan="2">Analog load cell signal</td></tr>
<tr><td>GND</td></tr>
<tr><td>JB3
(Output port)</td><td>  </td><td colspan="2">Output port</td></tr>
</table>

4.5 Car top I/O board (DT-JDX-CJB)

4.5.1 Car top I/O board (DT-JDX-CJB) diagram

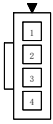
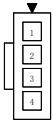
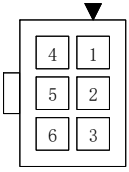


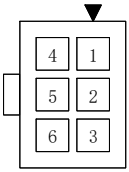
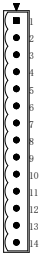
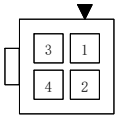
4.5.2 Car top I/O board (DT-JDX-CJB) indicator instructions

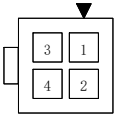
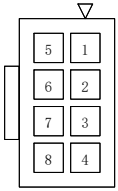
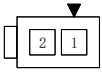
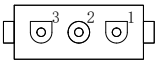
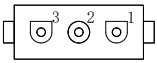
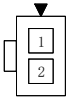
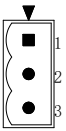
Indicator mark	Function	Status description
Y1	Door 1 open	On: Door 1 open output
Y2	Door 1 close	On: Door 1 close output
Y3	Forced door close of door 1	On: Door 1 forced close output
Y4	Door 2open	On: Door 2 open output
Y5	Door 2 close	On: Door 2 close output
Y6	Forced door close of door 2	On: Door 2 forced close output
Y7	Up arrival	On: Up arrival output
Y8	Down arrival	On: Down arrival output
Y9	Sound and light alarm	On: Sound and light alarm output
Y10	Lighting (function code	On: lighting off

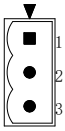
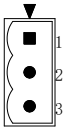
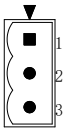
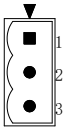
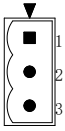
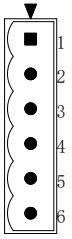
Indicator mark	Function	Status description
	modification)	
Y11	Fan	On: Fan off

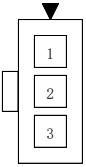
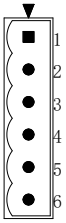
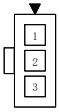
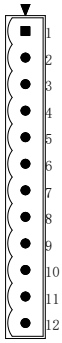
4.5.3 Car top I/O board (DT-JDX-CJB) port instructions

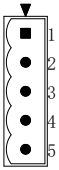
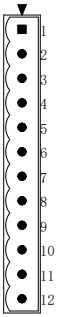
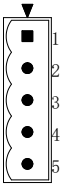
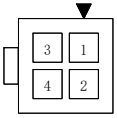
Plugin number	Plugin port definition	Port	Port function	
JB1 (Power supply, or communication port)	Same with the CTB plugin		For connection with the CTB (same function and definition with that of the MCB plugin)	
JB2 (Input port)	Same with the CTB plugin		For connection with the CTB (same function and definition with that of the MCB plugin)	
JB3 (Output port)	Same with the CTB plugin		For connection with the CTB (same function and definition with that of the MCB plugin)	
JTC (standby) (CAN2 communication port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH2	CAN2+: MCB CAN communication port
		4	CL2	CAN2-: MCB CAN communication port
JTN (standby) (485 communication port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH3	485+: Car Modbus communication port
		4	CL3	485-: Car Modbus communication port
MQ (Door zone switch cable port)		1	24+	Upper door zone switch
		2	0 V	
		3	SMU	
		4	24+	Lower door zone switch
		5	0 V	
		6	SMD	

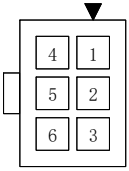
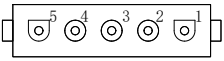
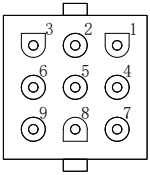
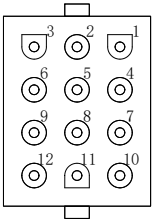
Plugin number	Plugin port definition	Port	Port function	
PC (Leveling switch cable port)		1	24+	Up leveling switch
		2	0 V	
		3	SPU	
		4	24+	Down leveling switch
		5	0 V	
		6	SPD	
JTK (Car top inspection port)		1	24+	24 V DC (input COM)
		2	INTJ	Car top inspection signal
		3	INU	Car top inspection up running signal
		4	IND	Car top inspection down running signal
		5	123	Bypass short-circuit
		6	125	
		7	113A	EEO Interlock
		8	113	
		9	111	Safety circuit disconnection at car top inspection
		10	113	
		11	111	Safety circuit connection at car top inspection (to facilitate wiring)
		12	113	
		13	109	Car top inspection box emergency stop
		14	111	
QH1 (level-1 slowdown)		1	24+	Up level-1 slowdown (when the switch is installed in the car)
		2	SU1	
		3	24+	Down level-1 slowdown (when the switch is installed in the car)
		4	SD1	
QH2 (level-2		1	24+	Up level-2 slowdown (when the switch is installed in the car)
		2	SU2	

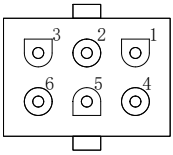
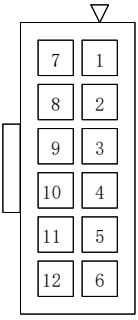
Plugin number	Plugin port definition	Port	Port function	
slowdown)		3	24+	Down level-2 slowdown (when the switch is installed in the car)
		4	SD2	
BK (standby output port)		1	24+	24 V DC
		5	0 V	0 V (24 V DC)
		2	Y7	Up arrival gong
		6	YM7	
		3	24+	24 V DC
		7	0 V	0 V (24 V DC)
		4	Y8	Down arrival gong
		8	YM8	
BJQ (sound and light alarm device port)		1	SFM	Sound and light alarm device 24 V (24 V DC)
		2	0 V	0 V (24 V DC)
LGT (car lighting port)		1	511	Car lighting 220 V AC
		2	PE	
		3	502	
FAN (car fan port)		1	513	Car fan 220 V AC
		2	PE	
		3	502	
PTC (fan overheat protection)		1	24+	Car fan overheat protection (NC)
		2	PTC	
JT1 (car top auxiliary emergency stop)		1	105	Car top auxiliary emergency stop (short-circuited when not in use)
		2	PE	
		3	105A	

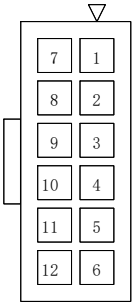
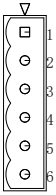
Plugin number	Plugin port definition	Port	Port function	
JT2 (Emergency escape hatch switch)		1	107	Car top emergency escape hatch switch (short-circuited when not in use)
		2	PE	
		3	105A	
JT3 (maintenance positioning switch)		1	107	Car top maintenance positioning switch (short-circuited when not in use)
		2	PE	
		3	109	
JT4 (safety gear switch)		1	115	Safety gear switch
		2	PE	
		3	113	
JT5 (final limit switch)		1	115	Final limit switch (when installed in the car) (please short-circuit it when installed in the shaft)
		2	PE	
		3	117	
JT6 (Standby safety switch)		1	119	Standby safety switch (short-circuited when not in use)
		2	PE	
		3	117	
GM1 (Door 1 light curtain)		1	205	220 V AC control power supply
		2	202	
		3	PE	
		4	XCM	24 V DC (input COM)
		5	SE1	Door 1 light curtain
		6	SC1	Door 1 safety edge
BX1 (Standby input port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	X5	It is connected with SC1 (door 1 safety

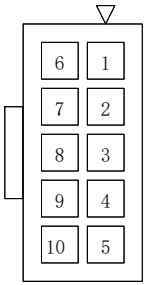
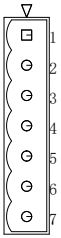
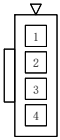
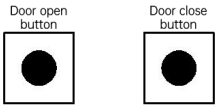
Plugin number	Plugin port definition	Port	Port function	
				edge) in the internal circuit.
GM2 (Door 2 light curtain)		1	205	220 V AC control power supply
		2	202	
		3	PE	
		4	XCM	24 V DC (input COM)
		5	SE2	Door 2 light curtain
		6	SC2	Door 2 safety edge
BX2 (standby input port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	X10	It is connected with SC2 (door 2 safety edge) in the internal circuit.
MJ1 (door 1 operator)		1	205	220 V AC control power supply
		2	202	
		3	PE	
		4	YCM1	Door open/close COM
		5	KM1	Door 1 open
		6	GM1	Door 1 close
		7	GQ1	Door 1 forced close
		8	XCM	24 V DC (input COM)
		9	SKM1	Door 1 open limit
		10	SGM1	Door 1 close limit
		11	XCM	24 V DC (input COM)
		12	TF1	Door operator 1 overheat protection (NC)
MS1		1	157	Car door lock of door 1

Plugin number	Plugin port definition	Port	Port function	
(car door lock of door 1)		2	155	
		3	PE	Ground wire
		4	SGA	Car door auxiliary lock of door 1
		5	SG2	
MJ2 (door 2 operator)		1	205	220 V AC control power supply
		2	202	
		3	PE	
		4	YCM2	Door open/close COM
		5	KM2	Door 2 open
		6	GM2	Door 2 close
		7	GQ2	Door 2 forced close
		8	XCM	24 V DC (input COM)
		9	SKM2	Door 2 open limit
		10	SGM2	Door 2 close limit
		11	XCM	24 V DC (input COM)
		12	TF2	Door operator 2 overheat protection (NC)
MS2 (car door lock of door 2)		1	159	Car door lock of door 2
		2	157	
		3	PE	Ground wire
		4	SGA	Car door auxiliary lock of door 2
		5	SG3	
AIM (analog load cell)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	AI	Analog load cell signal
		4	——	
CZK		1	24+	24 V DC

Plugin number	Plugin port definition	Port	Port function	
(digital full-load and overload)		4	0 V	0 V (24 V DC)
		2	24+	24 V DC (COM)
		3	MOL	Overload signal
		5	24+	24 V DC (COM)
		6	MFL	Full-load signal
JC1 (traveling cable communication port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	CH2	CAN2+: CTB CAN communication port
		4	CL2	CAN2-: CTB CAN communication port
		5	CG	Communication shielding ground
JC2 (traveling cable low-voltage port)		1	SPU	Up leveling (non-communication period)
		2	SPD	Down leveling (non-communication period)
		3	SMU	Upper door zone
		4	SMD	Lower door zone
		5	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		6	DR	Intercom signal R
		7	TL+	Intercom device power supply 12 V DC (emergency power supply)
		8	COM	0 V (12 V DC) (emergency power supply)
		9	DL	Intercom signal L
JC3 (traveling cable safety door lock)		1	123	Bypass short-circuit
		2	SG2	Car door auxiliary lock
		3	159	Car door 2 door lock return
		4	125	Bypass short-circuit
		5	——	

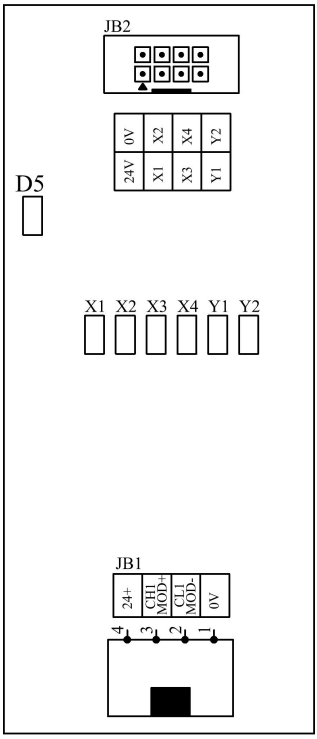
Plugin number	Plugin port definition	Port	Port function	
		6	155	Car door lock
		7	113A	EEO Interlock
		8	——	
		9	157	Car door 1 door lock return
		10	119	Car safety return
		11	SG3	Car door auxiliary lock
		12	105	Car safety circuit
JC4 (traveling cable high-voltage port)		1	505	220 V AC lighting power supply
		4	502	
		2	PE	Ground wire
		5	PE	
		3	205	220 V AC control power supply
		6	202	
COP1 (operating box 1)		7	24+	24 V DC
		1	0 V	0 V (24 V DC)
		8	CH3	485+: Car Modbus communication port
		2	CL3	485-: Car Modbus communication port
		9	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		3	CG	Communication shielding cable
		10	AL+	Alarm bell power supply 12 V DC (emergency power supply)
		4	JL+	Alarm bell +
		11	DL	Intercom signal L
		5	DR	Intercom signal R
		12	TL+	Intercom device power supply 12 V DC (emergency power supply)

Plugin number	Plugin port definition	Port	Port function	
		6	COM	0 V (12 V DC) (emergency power supply)
COP2 (operating box 2)		7	24+	24 V DC
		1	0 V	0 V (24 V DC)
		8	CH3	485+: Car Modbus communication port
		2	CL3	485-: Car Modbus communication port
		9	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		3	CG	Communication shielding cable
		10	AL+	Alarm bell power supply 12 V DC (emergency power supply)
		4	JL+	Alarm bell +
		11	DL	Intercom signal L
		5	DR	Intercom signal R
		12	TL+	Intercom device power supply 12 V DC (emergency power supply)
		6	COM	0 V (12 V DC) (emergency power supply)
POW (lighting and socket power supply)		1	505	220 V AC lighting power supply
		2	PE	
		3	502	
		4	505	220 V AC lighting power supply
		5	PE	
		6	502	
TEL (car top intercom device) (car top emergency lighting)		1	TL+	Intercom device power supply 12 V DC (emergency power supply)
		2	COM	0 V (12 V DC) (emergency power supply)
		3	DL	Intercom signal L
		4	DR	Intercom signal R

Plugin number	Plugin port definition	Port	Port function	
		5	JL-	Alarm bell -
		6	YJK1	Car top emergency lighting switch
		7	YJK2	
		8	YJD+	Car top emergency lighting 12 V DC
		9	YJD-	Car top emergency lighting 0 V (12 V DC)
		10	JL+	Alarm bell +
YJD (emergency power supply port)		1	505	220 V AC lighting power supply
		2	PE	
		3	502	
		4	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		5	AL+	Alarm bell power supply 12 V DC (emergency power supply)
		6	TL+	Intercom device power supply 12 V DC (emergency power supply)
		7	COM	0 V (12 V DC) (emergency power supply)
DTEL (car bottom intercom device port)		1	TL+	Intercom device power supply 12 V DC (emergency power supply)
		2	COM	0 V (12 V DC) (emergency power supply)
		3	DL	Intercom signal L
		4	DR	Intercom signal R
Door open/close test button		Valid in the inspection state; Used for the door open/close test of the door operator		

4.6 Pit control board (Smile3000-CPB-A)

4.6.1 Pit control board (Smile3000-CPB-A) diagram

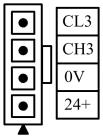
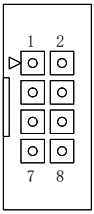


4.6.2 Pit control board (Smile3000-CPB-A) indicator instructions

Indicator mark	Function	Status description
D5	For indicator light communication with the MCB	Flashing (in green) when the communication is normal

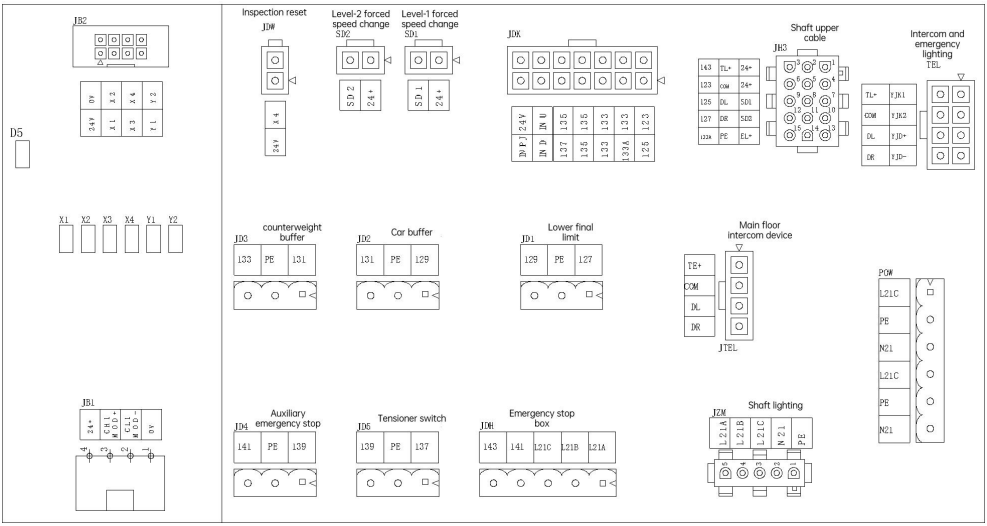
4.6.3 Pit control board (Smile3000-CPB-A) port instructions

Plugin number	Plugin port definition	Port	Port function	
JB1		1	24+	24 V DC

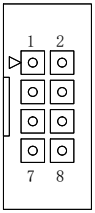
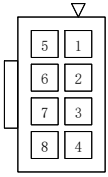
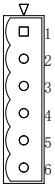
Plugin number	Plugin port definition	Port	Port function	
(485 communication port)		2	0 V	0 V (24 V DC)
		3	CH3	485+: Car Modbus communication port
		4	CL3	485-: Car Modbus communication port
JB2 (I/O port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	X1	Pit inspection signal (Off: In inspection)
		4	X2	Pit inspection up running signal
		5	X3	Pit inspection down running signal
		6	X4	Pit inspection reset signal
		7	Y1	Standby
		8	Y2	Standby

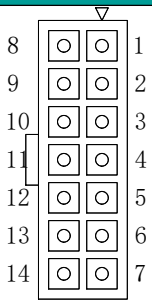
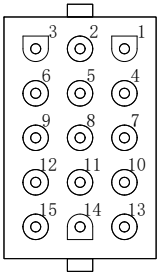
4.7 Pit I/O board (DT-DKX-CJB) port instructions

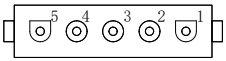
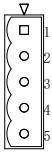
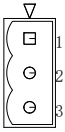
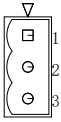
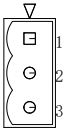
4.7.1 Pit I/O board (DT-DKX-CJB) diagram

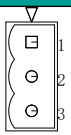
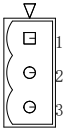
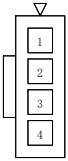
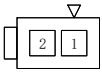


4.7.2 Pit I/O board (DT-DKX-CJB) port instructions

Plugin number	Plugin port definition	Port	Port function	
JB2 (I/O port)		1	24+	24 V DC
		2	0 V	0 V (24 V DC)
		3	X1	Pit inspection signal (Off: In inspection)
		4	X2	Pit inspection up running signal
		5	X3	Pit inspection down running signal
		6	X4	Pit inspection reset signal
		7	Y1	Standby
		8	Y2	Standby
TEL (Intercom and lighting port)		1	YJK1	Emergency lighting switch
		2	YJK2	
		3	YJD+	Emergency lighting 12 V DC
		4	YJD-	Emergency lighting 0 V (12 V DC)
		5	TL+	Intercom device power supply 12 V DC (emergency power supply)
		6	COM	0 V (12 V DC) (emergency power supply)
		7	DL	Intercom signal L
		8	DR	Intercom signal R
POW (lighting and socket port)		1	L21C	220 V AC lighting power supply
		2	PE	
		3	N21	
		4	L21C	220 V AC lighting power supply
		5	PE	
		6	N21	
JDK		1	123	Bypass short-circuit

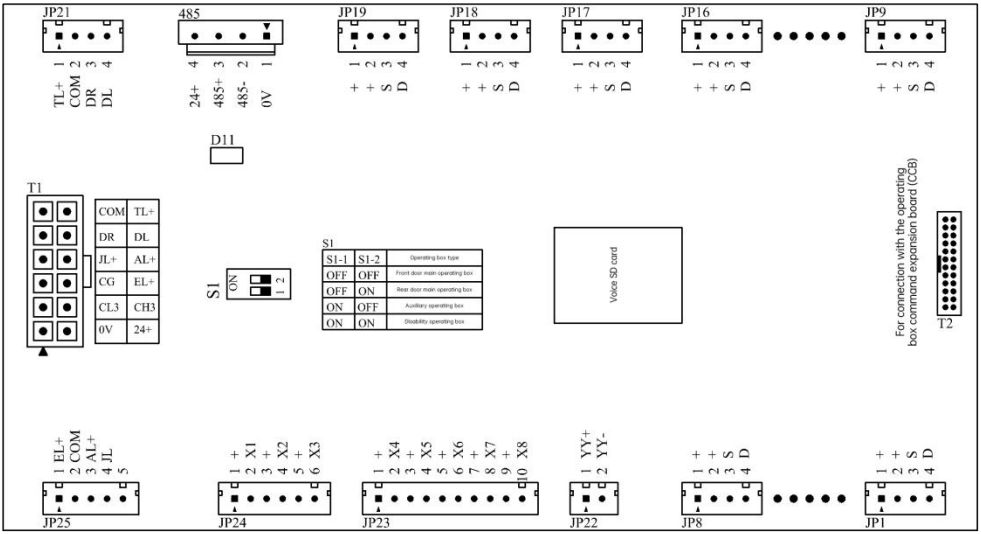
Plugin number	Plugin port definition	Port	Port function	
(Pit inspection port)		8	125	
		2	133	EEO Interlock
		9	133A	
		3	133	Safety circuit disconnection at inspection
		4	135	
		10	133	Safety circuit connection at inspection (to facilitate wiring)
		11	135	
		5	135	Emergency stop
		12	137	
		6	IND	Inspection down running signal
		13	INU	Inspection up running signal
		7	INPJ	Pit inspection signal
		14	24+	
JH3 (shaft lower cable port) For connection with the control cabinet		1	24+	24 V DC (COM)
		2	TL+	Intercom device power supply 12 V DC (emergency power supply)
		3	143	Shaft lower safety return
		4	24+	24 V DC (COM)
		5	COM	0 V (12 V DC) (emergency power supply)
		6	123	Bypass short-circuit
		7	SD1	Down level-1 slowdown (when installed in the shaft)
		8	DL	Intercom signal L
		9	125	Bypass short-circuit
		10	SD2	Down level-2 slowdown (when installed in the shaft)

Plugin number	Plugin port definition	Port	Port function	
		11	DR	Intercom signal R
		12	127	Shaft lower safety
		13	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		14	PE	Ground wire
		15	133A	EEO Interlock
JZM (shaft lighting port) For connection with the control cabinet		1	PE	Shaft lighting
		2	N21	
		3	L21C	
		4	L21B	
		5	L21A	
JDH (Emergency stop box)		1	L21A	Shaft lighting switch
		2	L21B	
		3	L21C	
		4	141	Emergency stop
		5	143	
JD1 (lower final limit switch)		1	127	Lower final limit switch (when the switch is installed in the shaft) (please short-circuit the final limit switch when installed in the car)
		2	PE	
		3	129	
JD2 (car buffer switch)		1	129	Car buffer switch (short-circuited when not in use)
		2	PE	
		3	131	
JD3 (counterweight buffer switch)		1	131	Counterweight buffer switch (short-circuited when not in use)
		2	PE	
		3	133	
JD4		1	139	Auxiliary emergency stop

Plugin number	Plugin port definition	Port	Port function	
(auxiliary emergency stop)		2	PE	(short-circuited when not in use)
		3	141	
JD5 (tensioner switch)		1	115	Tensioner switch
		2	PE	
		3	117	
JTEL (main floor intercom device port)		1	TL+	Intercom device power supply 12 V DC (emergency power supply)
		2	COM	0 V (12 V DC) (emergency power supply)
		3	DL	Intercom signal L
		4	DR	Intercom signal R
JDW (inspection reset switch port)		1	24+	Inspection reset switch
		2	X4	
SD1 (Down level-1 slowdown port)		1	24+	Down level-1 slowdown (when installed in the shaft)
		2	X4	
SD2 (Down level-2 slowdown port)		1	24+	Down level-2 slowdown (when installed in the shaft)
		2	X4	

4.8 Operating box command board (Smile3000-CBB)

4.8.1 Operating box command board (Smile3000-CBB) diagram



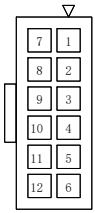
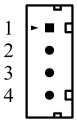
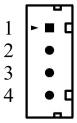
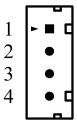
4.8.2 Operating box command board (Smile3000-CBB) setting

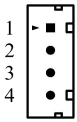
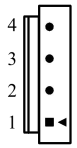
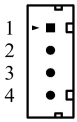
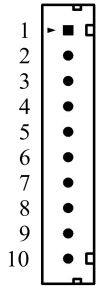
The functions of the operating box setting switch S1 are described in the table below.

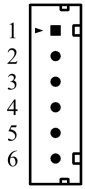
DIP switch S1-1	DIP switch S1-2	Operating box type selection
OFF	OFF	Front door operating box
OFF	ON	Rear door operating box
ON	OFF	Auxiliary operating box
ON	ON	Disability operating box

4.8.3 Operating box command board (Smile3000-CBB) port instructions

Plugin number	Plugin port definition	Port	Port function	
T1 (for connection		7	24+	24 V DC
		1	0 V	0 V (24 V DC)

Plugin number	Plugin port definition	Port	Port function	
with the car top box cable)		8	CH3	485+: Car Modbus communication port
		2	CL3	485-: Car Modbus communication port
		9	EL+	Emergency lighting power supply 12 V DC (emergency power supply)
		3	CG	Communication shielding cable
		10	AL+	Alarm bell power supply 12 V DC (emergency power supply)
		4	JL+	Alarm bell +
		11	DL	Intercom signal L
		5	DR	Intercom signal R
		12	TL+	Intercom device power supply 12 V DC (emergency power supply)
		6	COM	0 V (12 V DC) (emergency power supply)
JP1-JP16		1	24+	Floor button indicator light (24 V DC)
		2	24+	Floor button switch (24 V DC)
		3	S	Floor button switch
		4	D	Floor button indicator light
JP17		1	24+	Door open button indicator light (24 V DC)
		2	24+	Door open button switch (24 V DC)
		3	S	Door open button switch
		4	D	Door open button indicator light
JP18		1	24+	Door close button indicator light (24 V DC)
		2	24+	Door close button switch (24 V DC)
		3	S	Door close button switch

Plugin number	Plugin port definition	Port	Port function	
		4	D	Door close button indicator light
JP19		1	24+	Delay button indicator light (24 V DC)
		2	24+	Delay button switch (24 V DC)
		3	S	Delay button switch
		4	D	Delay button indicator light
485		1	0 V	0 V (24 V DC)
		2	485-	485-: Display board Modbus communication port
		3	485+	485+: Display board Modbus communication port
		4	24+	24 V DC
JP21		1	TL+	Operating box auxiliary intercom
		2	COM	
		3	DR	
		4	DL	
JP22		1	YY+	Voice speaker +
		2	YY-	Voice speaker -
JP23		1	+	Attendant direction-changing switch
		2	X4	
		3	+	Direct travel switch
		4	X5	
		5	+	Independent running switch
		6	X6	
		7	+	Fire-fighter running
		8	X7	
		9	+	Standby
		10	X8	

Plugin number	Plugin port definition	Port	Port function	
JP24		1	+	Car lighting switch
		2	X1	
		3	+	Car fan switch
		4	X2	
		5	+	Attendant switch
		6	X3	
JP25		1	EL+	Emergency lighting +
		2	COM	Emergency lighting -
		3	AL+	Alarm bell button
		4	JL	
		5	——	

Chapter 5 Commissioning tools

The Smile3000 series provides three commissioning tools: 3-button keypad on the control board ("keypad" for short), LED operating and display panel ("operating panel" for short), and host controller monitoring software.

Tool	Function	Remarks
Keypad	Used to input commands for shaft commissioning and to view floor information	Standard
LED operating panel	Used to view and modify all parameters related to elevator drive and control, facilitating commissioning on site	Optional
Host controller monitoring software	Used to upload/download, view, and modify parameters of the integrated controller	Optional

This manual provides the detailed information of the more commonly used tools (keypad and LED operating panel) only.

5.1 Keypad

The keypad consists of three digits and three buttons by which the user can view the information and input simple commands.

The keypad appearance is shown below: three 7-segment display digits and three buttons (defined respectively as PRG, UP and SET).

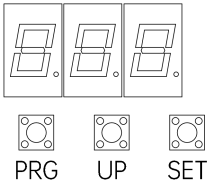


Figure 5-1 Keypad appearance

Table 5-1 Keypad button definition table

Button	Function
PRG	In any running state, press the button to display the present group number in the function menu; press the button to exit the present operation.
UP	Press the button to increase the value of the group number in the function menu or the value of data.

Button	Function
	In the group P6 menu, this button is used to input the door open command.
SET	Press this button to enter the editing mode of the function menu, and to confirm and save settings. In the group P6 menu, this button is used to input the door close command.

The flowchart in Figure 5-2 illustrates the steps of calling the elevator to floor 4 via the keypad.

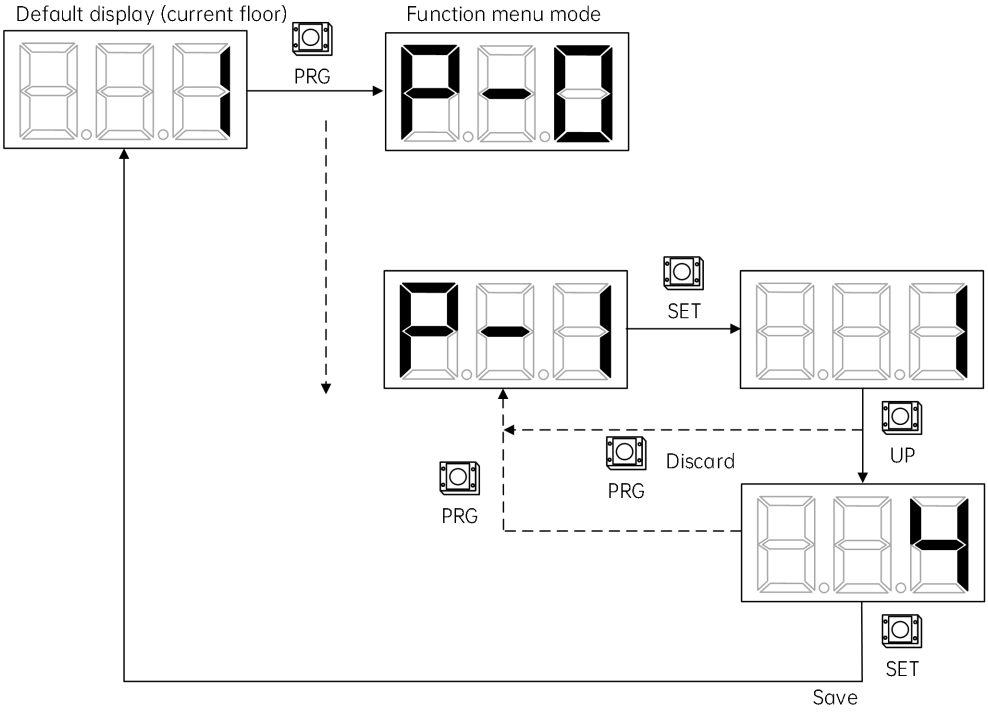


Figure 5-2 Flowchart of floor call via keypad

For the function description of the keypad menu, please refer to Section 9.1 "Keypad parameters".

5.2 Operating panel

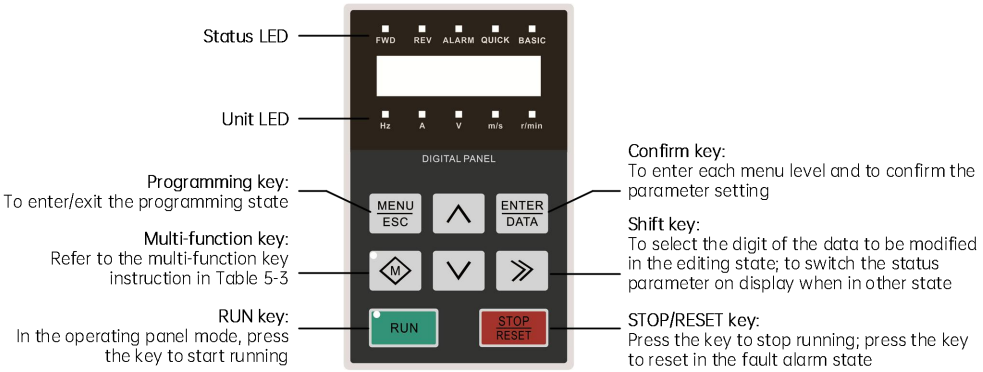


Figure 5-3 Operating panel appearance and functions

5.2.1 LED Indicator and multi-function key instructions

Table 5-2 Indicator instructions

LED indicator	Name	Definition	color
Status LED			
FWD	Forward running indicator	On: When in the stop state, the drive receives a FWD running command; When in the running state, the drive is running in the forward direction; Blinking: The running direction is switching from FWD to REV.	Green
REV	Reverse running indicator	On: When in the stop state, the drive receives a REV running command; When in the running state, the drive is running in the reverse direction; Blinking: The running direction is switching from REV to	Green

<table>
<tr><th>LED indicator</th><th>Name</th><th>Definition</th><th>color</th></tr>
<tr><td></td><td></td><td>FWD.</td><td></td></tr>
<tr><td>ALARM</td><td>Alarm indicator</td><td>On: The drive enters the alarm state.</td><td>Red</td></tr>
<tr><td>QUICK</td><td rowspan="5">Menu mode indicator</td><td rowspan="5"><table><tr><th>QUCIK LED</th><th>BASIC LED</th><th>Menu mode</th></tr><tr><td>On</td><td>Off</td><td>Quick menu</td></tr><tr><td>Off</td><td>On</td><td>Basic menu</td></tr><tr><td>Off</td><td>Off</td><td>Verification menu</td></tr></table></td><td>Green</td></tr>
<tr><td>BASIC</td><td>Green</td></tr>
<tr><td colspan="4">Unit LED</td></tr>
<tr><td>Hz</td><td>Frequency indicator</td><td>On:
The present parameter on display refers to the running frequency;
Flashing:
The present parameter on display refers to the frequency reference.</td><td>Green</td></tr>
<tr><td>A</td><td>Current indicator</td><td>On:
The present parameter on display refers to the current.</td><td>Green</td></tr>
<tr><td>V</td><td>Voltage indicator</td><td>On:
The present parameter on display refers to the voltage.</td><td>Green</td></tr>
<tr><td>m/s</td><td>Linear speed indicator</td><td>On:
The present parameter on display refers to the linear speed.</td><td>Green</td></tr>
<tr><td>r/min</td><td>Rotating speed indicator</td><td>On:
The present parameter on display refers to the rotating speed.</td><td>Green</td></tr>
</table>

Table 5-3 Multi-function key instructions

Key	Name	Function
0	No function	The multi-function (M) key is disabled.
1	JOG	The M key serves as the JOG key. When the operating panel works as the command channel, press and hold this key to start the drive

Key	Name	Function
		real-time jog running. To stop, release the key.
2	FWD/REV switchover	The M key serves as the FWD/REV switchover key. When the operating panel works as the command channel, press the key to switch the direction of the output frequency online.
3	Command channel switchover 1	The M key serves as the command channel switching key, which is valid in the stop state only. The command channel switching sequence is as follows: The operating panel as the command channel (the M key LED indicator is on) → The terminal as the command channel (the M key LED indicator is off) → The serial port as the command channel (the M key LED indicator is flashing) → The operating panel as the command channel (the M key LED indicator is on)
4	Command channel switchover 2	The M key serves as the command channel switching key, which is valid in the stop state and the in the running state. The switching sequence is the same as mentioned above.
5	Keypad lockout	The M key serves to lock the keypad. To lock the keypad, press and hold the M key, and tap the ∧ key three times simultaneously. The lockout mode is determined by the thousands place of this function code. To unlock the keypad, when the thousands place is set to 5, press and hold the M key, and tap the ∨ key three times simultaneously; when the thousands place is set to 0, the keypad lockout function is disabled.
6	Emergency stop	The M key serves as the emergency stop key. Press the key in the open loop mode or the V/F mode, and the elevator will immediately decelerate to stop.
7	Coast to stop	The M key serves as the "coast to stop" key. Press the key in any running mode, and the drive will coasts to stop.

5.2.2 LED display symbols

There are 5 digits on the panel display, which can display the frequency reference, the output frequency, the monitoring data of all categories, the fault code, etc.

Table 5-4 LED symbols and their meanings

Symbol	Meaning	Symbol	Meaning	Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
0	0	7	7	d	d	J	J	r	r
1	1	8	8	E	E	L	L	S	S
2	2	9	9	F	F	n	N	t	T
3	3	A	A	G	G	n	n	U	U
4	4	b	b	H	H	O	O	v	V
5	5	C	C	h	h	P	P	y	Y
6	6	c	c	I	I	q	q	-	-

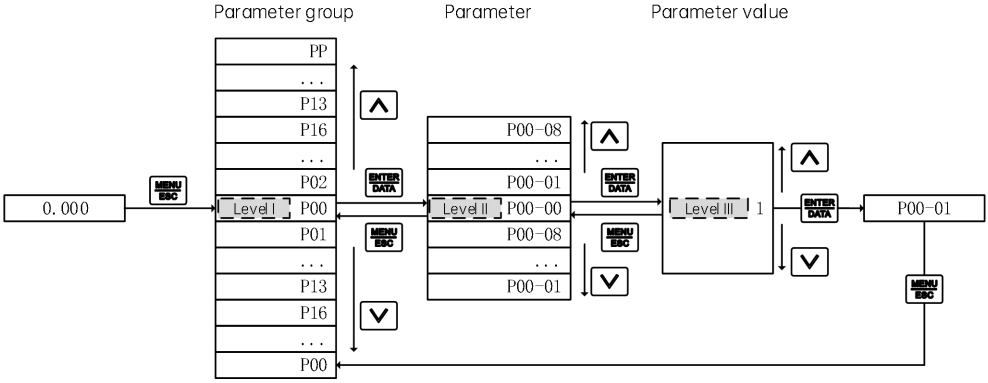
5.3 Basic operation

The operating panel menu adopts a three-level structure for the parameter setting, namely:

Level I: Parameter group

Level II: Parameter

Level III: Parameter value



5.3.1 Parameter display

Users can set the parameter display list via P13-01 (Parameter display in the running state) and P13-02 (Parameter display in the stop state). Each binary bit of P13-01 and P13-02 defines a specific parameter (for details, please refer to the parameter instruction). When the binary bit is set to 1, display of its corresponding parameter will be enabled; when it is set to 0, display of its corresponding parameter will be disabled.

In the running state or the stop state, press the [≫] key on the panel to switch among each byte of P13-01 and P13-02, so different status parameters can be displayed.

(1) Parameter display in the running state

In the running state, there are 16 running status parameters. Users can set the binary bit of P13-01 to determine whether the corresponding parameter of the bit can be displayed or not.

(2) Parameter display in the stop state

In the stop state, there are 16 stop status parameters. Users can set the binary bit of P13-02 to determine whether the corresponding parameter of the bit can be displayed or not.

Caution

For details, please refer to the explanation of P13-01 and P13-02.

5.3.2 Parameter viewing

Press the [MENU ESC] key on the panel, and then tap the [∧] or [∨] to display the parameter groups in the level I menu.

After the entry into each menu level, if any digit blinks, it indicates that the corresponding value of the digit is open to modification via the [∧] key, the [∨] key, and the [≫] key on the panel.

5.3.3 Parameter modification

After the entry into each menu level, if any digit blinks, it indicates that the corresponding value of the digit is open to modification via the [∧] key, the [∨] key, and the [≫] key on the panel.

When in the level III menu, users can press the [MENU ESC] key or the [ENTER DATA] key to return to the level II menu. However, there is difference between the two choices:

(1) If the [ENTER DATA] key is selected, the system will save the parameter change before returning to the level II menu, and automatically switches to the next parameter;

(2) If the [MENU ESC] key is selected, the system will discard the parameter change, and directly returns to the level II menu of the current parameter.

When in the level III menu, if the display digits of the parameter value do not blink, it indicates that this parameter value can not be modified, and the possible reasons include the followings:

(1) This parameter does not allow modification because it represents the drive type, the detected value, the running records, or the item alike;

(2) This parameter does not allow modification in the running state, but supports modification in the stop state.

Chapter 6 Electrical installation and circuit explanation

6.1 Safety instructions

(1) Precautions during wiring


Caution

- ✧ Non-professionals are strictly prohibited from performing equipment installation, wiring, maintenance, inspection, or component replacement!
- ✧ Do not perform wiring operations when the power supply is turned on. Otherwise, there is a risk of electric shock.
- ✧ Before wiring, please cut off the power supply of all equipment. After cutting off the power supply, there will be residual voltage in the capacitors inside the equipment. Please wait for at least 10 minutes before carrying out operations such as wiring.
- ✧ Please ensure that the equipment or products are properly grounded. Otherwise, there will be a risk of electric shock.
- ✧ Please follow the procedures specified in the electrostatic discharge (ESD) prevention measures, and wear an anti-static wrist strap when performing operations such as wiring to avoid damaging the internal circuits of the equipment or products.


Warning

- ✧ It is strictly prohibited to connect the input power supply to the output terminal of the equipment or product. Otherwise, it will cause damage to the equipment and may even lead to a fire.
- ✧ When connecting the driving device to the motor, make sure that the phase sequence of the terminals of the drive and the motor is accurately consistent to avoid the reverse rotation of the motor.
- ✧ When wiring, the cables used must meet the corresponding requirements for wire diameter, shielding, etc. The shielding layer of the shielded cable needs to be reliably grounded at a single end!
- ✧ After the wiring is completed, please ensure that no loose screws or exposed cables remain inside the equipment or product.

(2) Precautions when powering on


Danger

- ✧ Before powering on, please confirm that the equipment or products are properly installed, the wiring connections are secure, and the motor device allows for restarting.
- ✧ Before powering on, please confirm that the power supply meets the requirements of the equipment to to prevent equipment damage or fire hazards!
- ✧ When the power is turned on, the mechanical components of the equipment or product may activate unexpectedly. Please maintain safe distance from the mechanical components.
- ✧ After powering on, do not open the cabinet door of the equipment or the protective cover of the product. Otherwise, there is a risk of electric shock!
- ✧ It is strictly prohibited to touch any wiring terminals of the equipment when it is powered on. Otherwise, there is a risk of electric shock!
- ✧ It is strictly prohibited to disassemble any devices or components of the equipment or products while they are powered on. Otherwise, there is a risk of electric shock!

(3) Precautions during running


Danger

- ✧ It is strictly prohibited to touch any wiring terminals of the equipment during operation. Otherwise, there is a risk of electric shock!
- ✧ It is strictly prohibited to disassemble any devices or components of the equipment or products during operation. Otherwise, there is a risk of electric shock!
- ✧ It is strictly prohibited to touch the equipment enclosure, fan, or resistor to test the temperature. Otherwise, it may cause burns!
- ✧ Non-professional technicians are strictly prohibited from detecting signals during operation. Otherwise, it may cause personal injury or equipment damage.


Warning

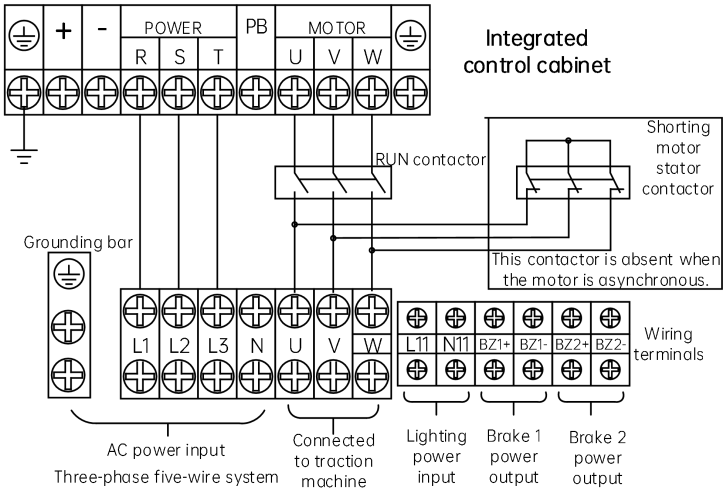
- ✧ During operation, avoid foreign items or metallic objects from entering into the equipment. Otherwise, it may cause damage to the equipment!
- ✧ Do not use the method of switching the contactor on and off to control the startup and shutdown of the equipment. Otherwise, it may cause damage to the equipment!

6.2 Main power supply circuit

Caution

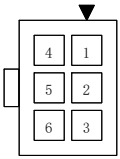
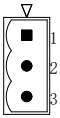
- ✧ The input power supply must be a three-phase five-wire system, and the neutral wire (N) must be connected; otherwise, normal operation will not be possible.
- ✧ The main power switch must be a four-pole switch, simultaneously controlling the three-phase power and the neutral wire (N).

6.2.1 MR control cabinet main power circuit instructions

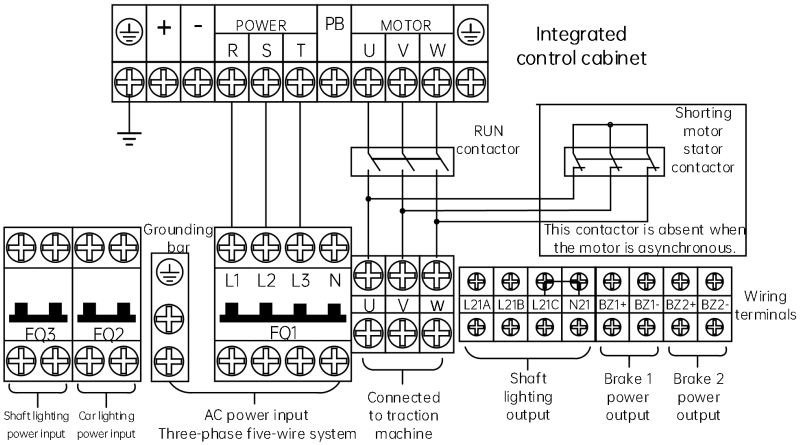


Component number	Port function	Remarks
L1/L2/L3/N/PE	Power supply input terminal	Three-phase five-wire system; please connect PE to the control cabinet grounding bar.
L11/N11	Lighting power supply input terminal	Power input for the control cabinet and the car lighting
U/V/W/PE	Traction machine power supply terminal	Please connect PE to the control cabinet grounding bar.
BZ1+ / BZ1- BZ2+ / BZ2-	Brake coil control power supply terminal	Independent control for brake coil 1 and brake coil 2 respectively: BZ1+ / BZ1- connects the control power supply to

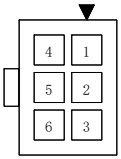
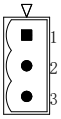
Component number	Port function	Remarks
		brake coil 1; BZ2+ / BZ2- connects the control power supply to brake coil 2.

Plugin number	Port	Plugin port definition	Port function	
JBZ (brake detection switch)	1		TCM	Traction machine overheat detection (NC)
	4		24+	
	2		BS2	Brake travel switch 2 (NC)
	5		24+	
	3		BS1	Brake travel switch 1 (NC)
	6		24+	
JM1 (winding drum wheel switch)	1		145	Winding drum wheel switch
	2		PE	
	3		147	

6.2.2 MRL control cabinet main power circuit instructions



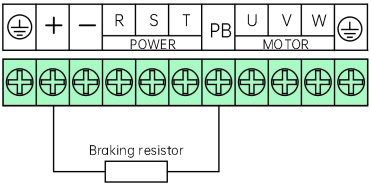
Component number	Port function	Remarks
FQ1	Power supply input (circuit breaker)	Three-phase five-wire system; please connect PE to the control cabinet grounding bar.
FQ2	Car lighting power input (circuit breaker)	Power input for the control cabinet and the car lighting
FQ3	Shaft lighting power input (circuit breaker)	Shaft lighting power supply
U/V/W/PE	Traction machine power supply terminal	Please connect PE to the control cabinet grounding bar.
BZ1+ / BZ1- BZ2+ / BZ2-	Brake coil control power supply terminal	Independent control for brake coil 1 and brake coil 2 respectively: BZ1+ / BZ1- connects the control power supply to brake coil 1; BZ2+ / BZ2- connects the control power supply to brake coil 2.

Plugin number	Port	Plugin port definition	Port function	
JBZ (brake detection switch)	1		TCM	Traction machine overheat detection (NC)
	4		24+	
	2		BS2	Brake travel switch 2 (NC)
	5		24+	
	3		BS1	Brake travel switch 1 (NC)
	6		24+	
JM1 (winding drum wheel switch)	1		145	Winding drum wheel switch
	2		PE	
	3		147	

6.2.3 Braking resistor installation

Caution

- ✧ Verify the braking resistor model and specifications based on the integrated control cabinet model;
- ✧ Inspect and confirm that the braking resistor is securely mounted and free from ground short-circuit.
- ✧ Inspect and confirm that the braking resistor cables are free from insulation damage, and that their wiring exhibits no inter-conductor short-circuit or ground faults.

Component number	Function	Remarks
+/PB	Drive braking resistor terminal	

Caution

- ✧ Please select the braking resistor with resistance closer to the minimum value in the specified range;
- ✧ For asynchronous motors with lower transmission efficiency, appropriately reduce the braking resistor power rating, or increase the braking resistance value.

Integrated cabinet model	Maximum (Ω)	Minimum (Ω)	Power (W)	Integrated cabinet model	Maximum (Ω)	Minimum (Ω)	Power (W)
Smile3000-2S1.1	90	64	650	Smile3000-2T2.2	90	64	1200
Smile3000-2S1.5	85	64	1000	Smile3000-2T3.7	85	64	1600
Smile3000-2S2.2	58	50	1200	Smile3000-2T5.5	32	18	2000
Smile3000-2S3.7	45	37	1600	Smile3000-2T7.5	23	17	2500
Smile3000-2S5.5	32	18	2000	Smile3000-2T11	19	15	3000
Smile3000-4T5.5	108	82	1800	Smile3000-4T22	33	25	6400
Smile3000-4T7.5	80	60	2500	Smile3000-4T30	21	16	9000

Integrated cabinet model	Maximum (Ω)	Minimum (Ω)	Power (W)	Integrated cabinet model	Maximum (Ω)	Minimum (Ω)	Power (W)
Smile3000-4T11	56	43	3500	Smile3000-4T37	18	14	11000
Smile3000-4T15	44	33	4500	Smile3000-4T45	14.5	11.5	15000
Smile3000-4T18.5	36	27	5500				

6.3 Encoder installation

Caution

Precautions during encoder cable connection:

- ✧ The routing of cables between PG card and encoder must be separated from cables of the control circuit and the power circuit. Parallel close-proximity routing is strictly prohibited;
- ✧ Shielded cables are mandatory for connections between PG card and encoder. The shield layer shall be connected to PE terminal at controller side (it is recommended to adopt single-end grounding to reduce interference);
- ✧ Cables between PG card and encoder shall be routed through dedicated conduits with reliably grounded metal jackets.

Asynchronous motor PG card model: PG-P

PG card appearance	Matching encoder type	PG card port		Encoder port	
	Push-pull output or open-collector output incremental encoders	1	12 V		V+
		2	COM (0 V)		V-
		3	PGA		A
		4	PGB		B

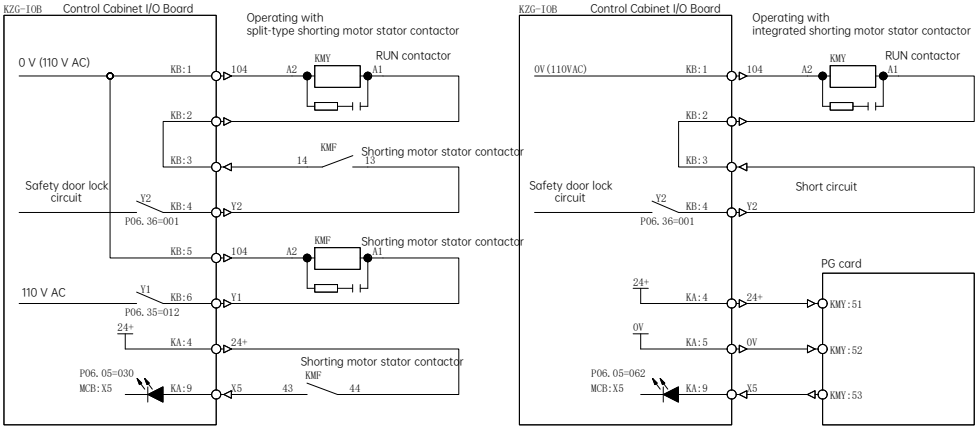
Synchronous motor PG card model: PG-S

	Matching encoder type	PG card port		Encoder port	
	Sin/Cos encoder (ERN1387)	1	B-	5a	B-
		2	NC		NC
		3	R+	4b	R+
		4	R-	4a	R-

	Matching encoder type	PG card port		Encoder port	
		5	A+	6b	A+
		6	A-	2a	A-
		7	0 V	3a+5b	0 V
		8	B+	3b	B+
		9	5V	7a+1b	5V
		10	C+	7b	C+
		11	C-	1a	C-
		12	D+	2b	D+
		13	D-	6a	D-
		14	NC		NC
		15	NC		NC

6.4 Shorting motor stator control circuit

6.4.1 Schematic diagram of shorting motor stator control circuit



6.4.2 Shorting motor stator control circuit parameter

Parameter	Name	Value	Definition	Description
A00-01	Motor type	11	00: Asynchronous 01: Synchronous 11: Synchronous (integrated-type shorting motor stator contactor) 12: Synchronous (split-type shorting motor stator contactor)	


Caution

When operating with a synchronous motor, it is mandatory to configure the shorting motor stator control circuit parameter. Otherwise, the system will trigger a fault alarm and prohibit operation.

6.4.3 Shorting motor stator control circuit instructions

When operating with a synchronous motor, two methods can be used:

Method 1: Split-type shorting motor stator contactor

when turned on, engage the shorting motor stator contactor first, and the shorting motor stator will be disconnected. Afterwards, engage the RUN contactor.

When turned off, disconnect the RUN contactor first. Afterwards, disconnect the shorting motor stator contactor, and the shoring motor stator will be implemented.

Method 2: Integrated shorting motor stator contactor

It is required to use an integrated shorting motor stator contactor which is dedicated with a built-in shorting stator contact. Each time when the power is turned on, the PG card generates pulses. The system continuously monitors these pulses for abnormalities. If abnormal pulses are detected, the system will report a fault and prohibit further operation.

After the power is turned on, the PG card generates pulses at one-hour intervals. The system continuously monitors these pulses for abnormalities. If abnormal pulses are detected, the system will report a fault and prohibit further operation.

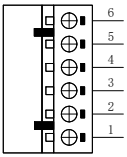
6.5 Safety circuit and door lock circuit

Caution

- ✧ When the EEO switch is set to the EEO status, the safety circuit will be disconnected;
- ✧ When the car top inspection switch is turned to the inspection state, the safety circuit will be disconnected;
- ✧ When the pit inspection switch is turned to the inspection state, the safety circuit will be disconnected;
- ✧ When pressing the up/down running button and the common button simultaneously, the safety circuit will be restored.

6.5.1 MCB safety circuit and door lock circuit ports

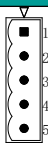
The MCB incorporates four high-voltage detection ports for safety and door lock monitoring.

Plugin number	Port	Plugin port definition	Port function	
JB4 (high-voltage input port) (for connection with the control cabinet I/O board)	1		XCOM	High-voltage detection COM (110 V AC)
	2		X25	Safety circuit high-voltage detection (110 V AC)
	3		X26	Front door lock short-circuit high-voltage detection (110 V AC)
	4		X27	Rear door lock short-circuit high-voltage detection (110 V AC)
	5		X28	Integrated door lock circuit high-voltage detection (110 V AC)
	6		XCOM	High-voltage detection COM (110 V AC)

6.5.2 Control cabinet I/O board safety circuit and door lock circuit ports

The control cabinet I/O board incorporates four high-voltage detection ports corresponding to the four ports on the MCB, which are for safety and door lock monitoring.

Plugin number	Port	Plugin port definition	Port function	
JB4	1		151	Safety circuit high-voltage detection (110 V AC)

Plugin number	Port	Plugin port definition	Port function	
(high-voltage input port) (for connection with the MCB)	2		155	Front door lock short-circuit high-voltage detection (110 V AC)
	3		159	Rear door lock short-circuit high-voltage detection (110 V AC)
	4		163	Integrated door lock circuit high-voltage detection (110 V AC)
	5		102	High-voltage detection COM (110 V AC)

6.5.3 Door lock circuit indicators and fault diagnosis

MCB indicators

Indicator mark	Function	Indicator status	Fault diagnosis
X25	High-voltage safety circuit	On	Check the JC3 plugin (155-157-159) car door lock circuit; Check the JH5 plugin (153-155) landing door 1 door lock circuit; Check the JH5 plugin (159-161) landing door 2 door lock circuit.
X26	High-voltage door lock 1 short-circuit	On	
X27	High-voltage door lock 2 short-circuit	On	
X28	High-voltage door lock 1 signal	On	

6.5.4 Safety circuit indicators and fault diagnosis

Indicator mark	Function	Indicator status	Fault diagnosis
DL11	110 V AC power indicator	On	Check the 110 V AC power supply.
DL12	Car safety circuit	On	Check the JC3 plugin (105-113A-119) circuit.
DL13	Machine room safety circuit 1	On	Check the JM2 plugin (119-121) (121-123) circuit. Check the JC3 plugin (123-125) circuit.
DL14	Shaft safety circuit	On	Check the JH2 plugin (125-127) circuit. Check the JH3 plugin (127-133A-143) circuit.

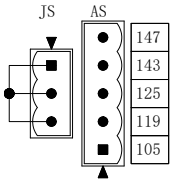
Indicator mark	Function	Indicator status	Fault diagnosis
DL15	Machine room safety circuit 2 (excluding control cabinet emergency stop)	On	Check the JH2 plugin (143-145) circuit. Check the JM1 plugin (145-147) circuit.

Caution

When all the I/O board safety indicator lights are on and the X25 on the MCB is off, please check the connection between the JMK plugin (147-151 control cabinet emergency stop) circuit and the JB4 plugin.

6.5.5 Safety bypass instructions

The control cabinet I/O board incorporates safety bypass plugin ports to facilitate on-site troubleshooting of safety circuit faults.

Plugin number			Port function
	1	105	110 V AC power supply
	2	119	Car safety circuit
	3	125	Machine room safety circuit 1
	4	143	Shaft safety circuit
	5	147	Machine room safety circuit 2 (excluding control cabinet emergency stop)

Caution

- ✧ When the JS plugin is pulled out, the bypass signal will be automatically disconnected; the X11 on the MCB will be off;
- ✧ In the bypass mode,only after the "door close limit" signal is valid are the EEO and inspection modes allowed to operate. When operating, the sound and light alarm device functions.

Bypass indicator instructions

Indicator mark	Function	Status description
X11	Door lock bypass	On: Normal Off: Bypass

6.5.6 Door lock short-circuit detection instructions

After the elevator levels and stops on a floor, and following a 3-second delay when the door open command is output, the Y5 on the MCB outputs door lock short-circuit detection signal (KAM), and the control cabinet I/O board Y5 relay will be engaged.

Single door:

If the MCB input port X26 is on, it indicates that the door 1 lock is short-circuited, and a fault E53 will be triggered;

The MCB input port X27 is invalid;

Double doors:

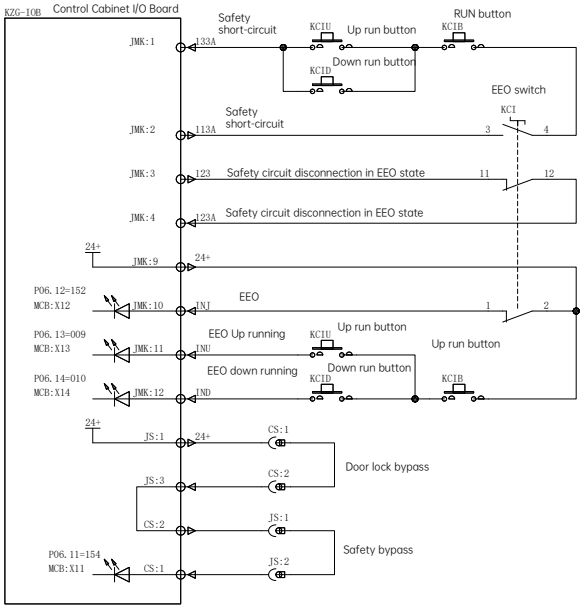
If the MCB input port X26 is on, it indicates that the door 1 lock is short-circuited, and a fault E53 will be triggered with a subcode of 5;

If the MCB input port X27 is on, it indicates that the door 2 lock is short-circuited, and a fault E53 will be triggered with a subcode of 6.

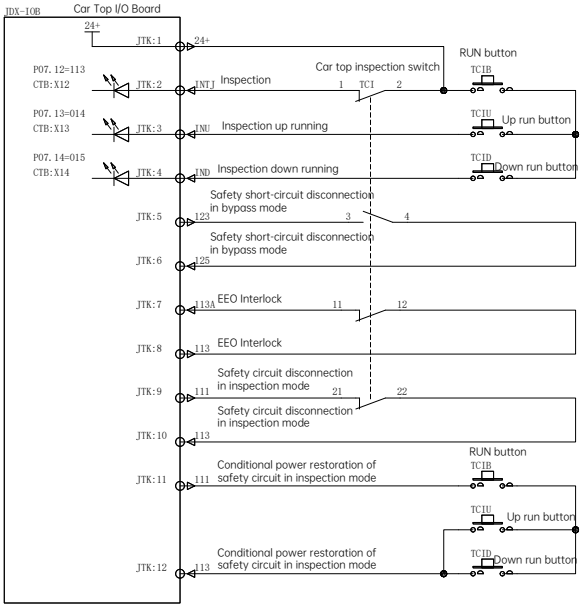
6.6 EEO circuit and car top inspection control circuit

6.6.1 EEO circuit and car top inspection control circuit diagram

EEO circuit



Car top inspection control circuit



6.6.2 EEO parameters and indicators

EEO parameters

Parameter	Name	Value	Description
Keypad P-c	Elevator running direction	0	0: Same direction 1: Reverse direction
A01-03	EEO running speed	0.25	Unit: m/s

MCB indicators

Indicator mark	Function	Status description
X11	Door lock bypass	On: Normal Off: Bypass
X12	EEO	On: Normal Off: EEO
X13	EEO up running	On: Existing command for up running
X14	EEO down running	On: Existing command for down running

6.6.3 EEO circuit instructions

When the EEO switch is set to the EEO state, the safety circuit is disconnected;

Press and hold the EEO up/down running button and the common button simultaneously, and the safety circuit will be restored;

When the EEO state is activated, the system will automatically short-circuit the final limit switch, buffer switch, safety gear switch, speed limiter switch, and rope gripper switch in the safety circuit;

The inspection (car top, and pit) is higher than EEO in priority hierarchy. EEO state is invalid when inspection is activated.

6.6.4 Car top inspection parameters and indicators

Parameters

Parameter	Name	Value	Definition	Description
A1-02	Inspection running speed	0.25		

CTB indicators

Indicator mark	Function	Status description
X12	Inspection	On: Normal Off: Inspection
X13	Inspection up running	
X14	Inspection down running	

6.6.5 Car top inspection instructions

The car top inspection function is activated via the communication between the CTB and the MCB;

When the car top inspection switch is set to the inspection state, the safety circuit will be disconnected;

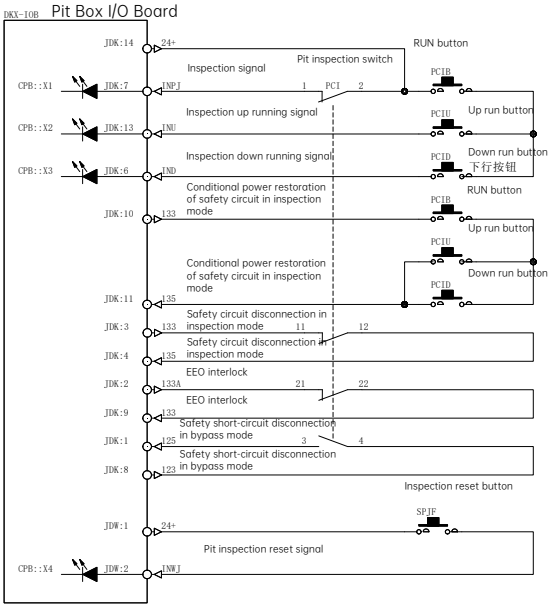
Press and hold the car top inspection up/down running button and the common button simultaneously, and the safety circuit will be restored;

The inspection (car top, and pit) is higher than EEO in priority hierarchy. EEO state is invalid when inspection is activated.

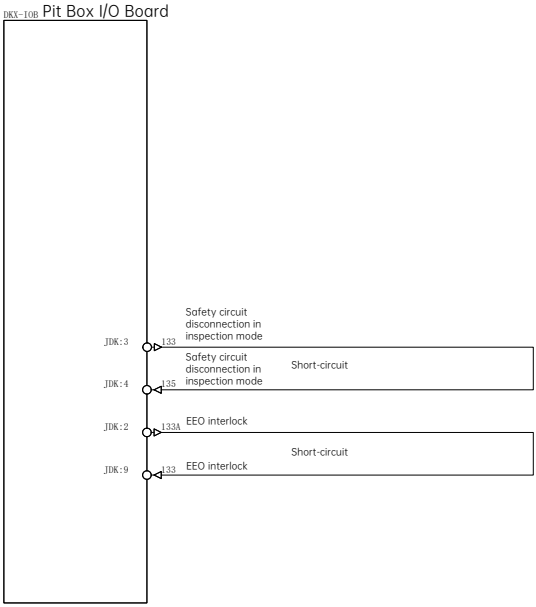
6.7 Pit inspection control circuit

6.7.1 Pit inspection control circuit diagram

Pit inspection included



Pit inspection excluded



6.7.2 Pit inspection parameters and indicators

Parameter	Name	Value	Definition	Description
A3-00	Pit inspection function	1	0: Disable 1: Enable	Inspection when disconnected; X1 is off.

Pit inspection board indicators

Indicator mark	Function	Status description
D5	Communication indicator	Flashing (green) when communication is normal.
X1	Inspection	On: Normal Off: Inspection
X2	Inspection up running	On when there is a command for inspection up running.
X3	Inspection down running	On when there is a command for inspection down running.
X4	Inspection reset signal	On when manually operating the inspection reset button.

6.7.3 Pit inspection instructions

The pit inspection function is enabled via the communication between the pit control board and the MCB;

When the pit inspection switch is set to the inspection state, the safety circuit is disconnected;

Press and hold the pit inspection up/down running button and the common button simultaneously, and the safety circuit will be restored;

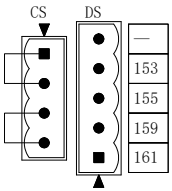
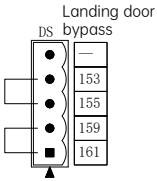
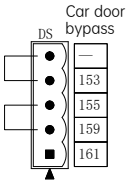
In the pit inspection state, when the pit inspection switch is restored to normal state, the system will not be restored to normal state automatically, but requires action by a dedicated reset button which functions as follows:

(1) Reset the pit inspection switch from "Inspection" to "Normal", and the indicator X1 is on;

(2) Press the SPJF "inspection reset" button to turn on the indicator X4; hold the button for 5 seconds, and the system will reset from pit inspection.

6.8 Door lock bypass ports

The control cabinet I/O board incorporates door lock bypass plugin ports.

Plugin number		Port function		
	1	161		
	2	159		
	3	155		
	4	153		
	5	——		

Caution

- ✧ When the CS plugin is pulled out, the bypass signal will be automatically disconnected, and the MCB X11 will be off;
- ✧ In the bypass mode, only after the "door close limit" signal is valid are the EEO and inspection modes allowed to operate. When operating, the sound and light alarm device functions.

Bypass indicator

Indicator mark	Function	Status description
X11	Door lock bypass	On: Normal Off: Bypass

Bypass operation instructions

(1) Under normal conditions, the CS plugin on the control cabinet plugin board must be short-circuited;

(2) To short-circuit a landing or car door, the short-circuit plug of the CS plugin must be pulled out and connected into the short-circuit plugin of the corresponding landing or car door (landing door and car door can not be short-circuit simultaneously);

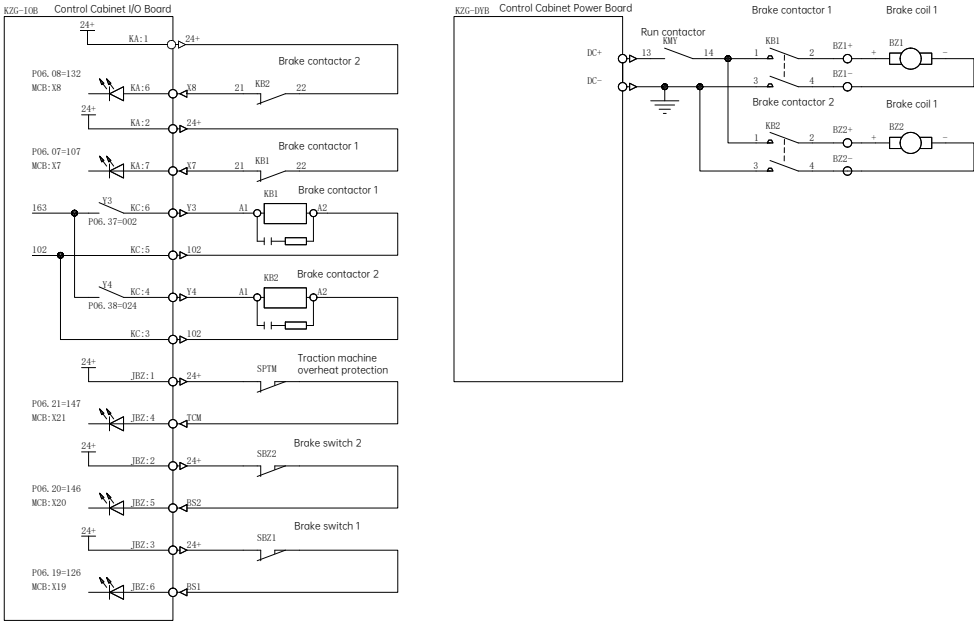
(3) After the short-circuit plug of the CS plugin is pulled out (the control board bypass input indicator X11 is off), the system will enter the bypass state;

(4) After the bypass state is activated, only EEO mode and inspection mode are allowed by the system;

(5) After the bypass state is activated, the elevator will operate only after a "door close limit" signal from the door operator is detected; under this condition, the elevator will run at the bypass speed, and the car sound and light alarm device functions simultaneously.

6.9 Brake control circuit

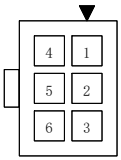
6.9.1 Brake control circuit diagram



6.9.2 Brake control indicator instructions

Indicator mark	Function	Status description
Y3	Brake contactor 1 output	On: Output
Y4	Brake contactor 2 output	On: Output
X7	Brake contactor 1 feedback	NC; on when stopped; off during running.
X8	Brake contactor 2 feedback	NC; on when stopped; off during running.
X19	Brake travel switch 1	NC; on when stopped; off during running.
X20	Brake travel switch 2	NC; on when stopped; off during running.
X21	Traction machine overheat	NC; on when normal; off when overheated

6.9.3 Brake control circuit port instructions

<table>
<tr><th>Plugin number</th><th colspan="2">Port</th><th>Plugin port definition</th><th colspan="2">Port function</th></tr>
<tr><td>BZ1+ / BZ1-
BZ2+ / BZ2-</td><td colspan="2">Terminal of brake coil control power supply</td><td colspan="3">Independent control for brake coil 1 and brake coil 2 respectively:
BZ1+ / BZ1- connects the control power supply to brake coil 1;
BZ2+ / BZ2- connects the control power supply to brake coil 2.</td></tr>
<tr><td rowspan="6">JBZ
(brake detection switch)</td><td>1</td><td rowspan="6"> 
</td><td>TCM</td><td rowspan="2">Traction machine overheat detection (NC)</td></tr>
<tr><td>4</td><td>24+</td></tr>
<tr><td>2</td><td>BS2</td><td rowspan="2">Brake travel switch 2 (NC)</td></tr>
<tr><td>5</td><td>24+</td></tr>
<tr><td>3</td><td>BS1</td><td rowspan="2">Brake travel switch 1 (NC)</td></tr>
<tr><td>6</td><td>24+</td></tr>
</table>

6.10 Car leveling control and door zone control circuit

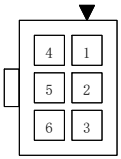
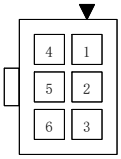
6.10.1 Leveling control and door zone control indicator instructions

The keypad main interface also provides the indication of this category. Please refer to the keypad instructions P-0.

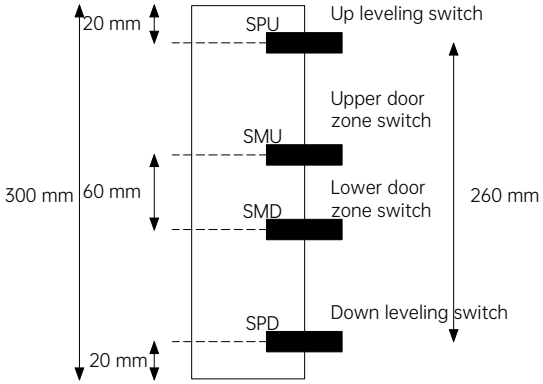
Indicator mark	Function	Status description
MCB X1	Up leveling	When not in the communication channel mode: On during leveling; Off during non-leveling time;
MCB X3	Down leveling	When not in the communication channel mode: On during leveling; Off during non-leveling time;
CTB X1	Up leveling	When in the communication channel mode: On during leveling;

Indicator mark	Function	Status description
		Off during non-leveling time;
CTB X3	Down leveling	When in the communication channel mode: On during leveling; Off during non-leveling time;
MCB X2	Door zone	On when in the door zone; Off when not in the door zone.

6.10.2 Leveling control and door zone control circuit port instructions

Plugin number	Port	Plugin port definition	Port function	
MQ (door zone switch cable port)	1		24+	Upper door zone switch
	2		0 V	
	3		SMU	
	4		24+	Lower door zone switch
	5		0 V	
	6		SMD	
PC (leveling switch cable port)	1		24+	Up leveling switch (communication)
	2		0 V	
	3		SPU	
	4		24+	Down leveling switch (communication)
	5		0 V	
	6		SPD	

6.10.3 Leveling control and door zone control circuit installation



The up/down leveling switch is connected to the CTB where the the connection is further extended to the control cabinet I/O board through traveling cables (communication), enabling direct communication between the up/down leveling switch and the MCB.

The upper/lower door zone switch is connected to the CTB where the the connection is further extended to the control cabinet I/O board through traveling cables. A door zone signal will then be generated inside the board and sent to the MCB afterwards;

The length and installation verticality of the leveling plates at each floor must be uniform

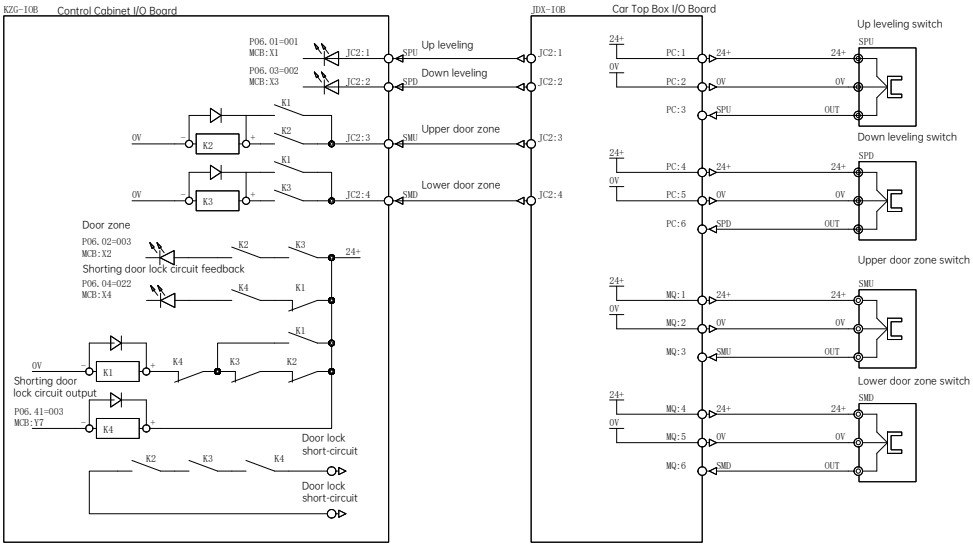
6.11 Advance door open control circuit

6.11.1 Advance door open control parameters

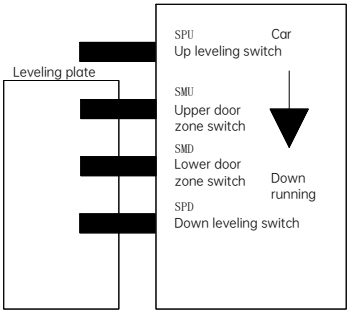
Advance door open control parameters (MCB)

Parameter	Name	Value	Definition	Description
P06-04	X4 function selection	022	Shorting door lock circuit output feedback	
P06-41	Y7 function selection	003	Shorting door lock circuit contactor	
P12-09	Function selection 1		Advance door open	Bit3=1: Advance door open function enabled

6.11.2 Advance door open control circuit diagram



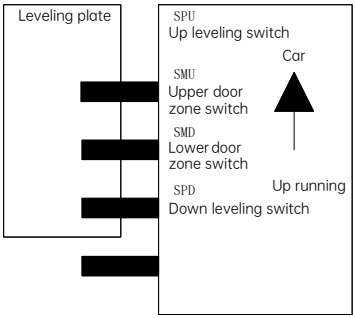
6.11.3 Advance door open control circuit instructions



During elevator down running:

1. During deceleration upon floor arrival in down running, when the elevator reaches the position indicated in the diagram above, the down leveling indicator X3 and the door zone indicator X2 on the MCB will be on;
2. When the elevator decelerates to the "advance door open allowable speed", the MCB sends a "shorting door lock circuit" signal (Y7 is on), and KZG-IOB outputs a "door lock short-circuit" signal to short-circuit the door lock switch. Simultaneously, a "shorting door lock circuit feedback" signal is sent to the MCB;

3. After receiving the "shorting door lock circuit feedback" signal (X4 is on), the MCB outputs a door open signal to activate door open by the door operator.



During elevator up running:

1. During deceleration upon floor arrival in up running, when the elevator reaches the position indicated in the diagram above, the up leveling indicator X1 and the door zone indicator X2 on the MCB will be on;

2. When the elevator decelerates to the "advance door open allowable speed", the MCB sends a "shorting door lock circuit" signal (Y7 is on), and KZG-IOB outputs a "door lock short-circuit" signal to short-circuit the door lock switch. Simultaneously, a "shorting door lock circuit feedback" signal is sent to the MCB;

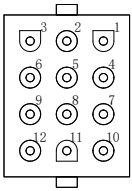
3. After receiving the "shorting door lock circuit feedback" signal (X4 is on), the MCB outputs a door open signal to activate door open by the door operator.

6.12 Upper shaft control circuit

6.12.1 Up slowdown indicators

Indicator mark	Function	Status description
MCB X15	Up level-1 slowdown	NC; on when normal; off during action; forced speed change is installed in the shaft)
MCB X16	Up level-2 slowdown	NC; on when normal; off during action; forced speed change is installed in the shaft)
CTB X15	Up level-1 slowdown	NC; on when normal; off during action; forced speed change is installed on the car top)
CTB X17	Up level-2 slowdown	NC; on when normal; off during action; forced speed change is installed on the car top)

6.12.2 Upper shaft control circuit ports and installation instructions

Plugin number	Port	Plugin port definition	Port function	
JH2 (upper shaft cable port)	1		24+	24 V DC (COM)
	2		PE	Ground wire
	3		127	Upper shaft safety return (short-circuited when not in use) (final limit switch is installed in the shaft)
	4		24+	24 V DC (COM)
	5		PE	Ground wire
	6		125	Upper shaft safety circuit (short-circuited when not in use) (final limit switch is installed in the shaft)
	7		SU1	Up level-1 slowdown (when installed in the shaft)
	8		PE	Ground wire
	9		143	Upper shaft emergency stop (short-circuited when not in use) (traction machine emergency stop, or machine room elevated-platform emergency stop)
	10		SU2	Up level-2 slowdown (when installed in the shaft)
	11		PE	Ground wire
	12		145	Upper shaft emergency stop return (short-circuited when not in use) (traction machine emergency stop, or machine room elevated-platform emergency stop)

Installation instructions for the connection between control cabinet and upper shaft electrical switches:

(1) When a final limit switch is installed on the car top, port 3 (127) and port 6 (125) of plugin JH2 have no cable connection, and are short-circuited directly;

(2) When a slowdown switch is installed on the car top, port 1 (24+) and port 7 (SU1) up level-1 slowdown of plugin JH2 have no cable connection;

(3) When a slowdown switch is installed on the car top, port 4 (24+) and port 10 (SU2) up level-2

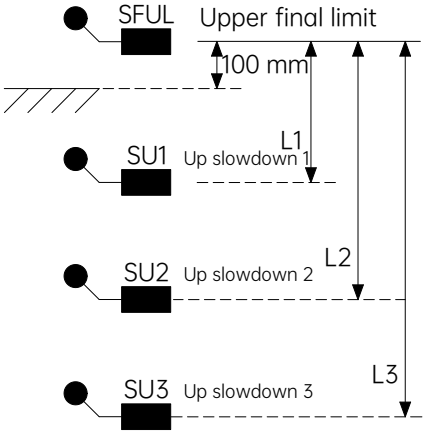
slowdown of plugin JH2 have no cable connection;

(4) When operating an MR elevator (machine room elevated-platform emergency stop is not needed), port 9 (143) and port 12 (145) of plugin JH2 have no cable connection, and are short-circuited directly;

(5) When operating an MRL elevator (traction machine emergency stop is not needed), port 9 (143) and port 12 (145) of plugin JH2 have no cable connection, and are short-circuited directly.

6.12.3 Upper shaft position limit switch installation diagram

When the car is reaching the leveling position of the top floor, it must ensure that the corresponding switch acts when the distance between the car and the upper final limit reaches a designated value as shown in the figure and table below.



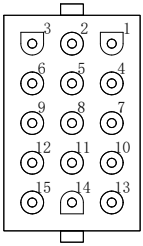
Speed / Distance	SU1 (L1)	SU2 (L2)	SU3 (L3)
Speed ⩽ 0.5 m/s	0.4 m	——	——
Speed ⩽ 1.0 m/s	1.0 m	——	——
Speed ⩽ 1.6 m/s	1.8 m	——	——
Speed ⩽ 1.75 m/s	2 m	——	——
Speed ⩽ 2.0 m/s	2 m	2.5 m	——
Speed ⩽ 2.5 m/s	2 m	4.0 m	——
Speed ⩽ 3.0 m/s	2 m	4.0 m	6.0 m

6.13 Lower shaft control circuit

6.13.1 Down slowdown indicators

Indicator mark	Function	Status description
MCB X18	Down level-2 slowdown	NC; on when normal; off during action; forced speed change is installed in the shaft)
CTB X16	Down level-1 slowdown	NC; on when normal; off during action; forced speed change is installed on the car top)
CTB X18	Down level-2 slowdown	NC; on when normal; off during action; forced speed change is installed on the car top)

6.13.2 Lower shaft control circuit ports and installation instructions

Plugin number	Port	Plugin port definition	Port function	
JH3 (lower shaft cable port)	1		24+	24 V DC (COM)
	2		TL+	Intercom device power supply 12 V DC (emergency power supply)
	3		143	Lower shaft safety return
	4		24+	24 V DC (COM)
	5		COM	0 V (12 V DC) (emergency power supply)
	6		123	Bypass short-circuit
	7		SD1	Down level-1 slowdown (when installed in the shaft)
	8		DL	Intercom signal L
	9		125	Bypass short-circuit
	10		SD2	Down level-2 slowdown (when installed in the shaft)
	11		DR	Intercom signal R
	12		127	Lower shaft safety circuit
	13		EL+	Emergency lighting power supply 12 V DC (emergency power supply)

Plugin number	Port	Plugin port definition	Port function	
	14		PE	Ground wire
	15		133A	EEO Interlock

Installation instructions for the connection between control cabinet and lower shaft electrical switches:

(1) When a slowdown switch is installed on the car top, port 1 (24+) and port 7 (SD1) down level-1 slowdown of plugin JH3 have no cable connection;

(2) When a slowdown switch is installed on the car top, port 4 (24+) and port 10 (SD2) down level-2 slowdown of plugin JH3 have no cable connection;

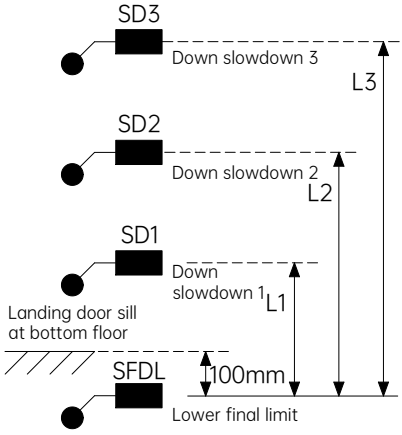
(3) There are two wiring methods for slowdown switch cables (please select the appropriate method based on actual conditions):

Connect the slowdown switch cables to the pit inspection box via plugin JH3, and then lead the cables out from the box;

Directly lead separate cables out from plugin JH3 and connect the cables directly to each slowdown switch.

6.13.3 Lower shaft position limit switch installation diagram

When the car is reaching the leveling position of the bottom floor, it must ensure that the corresponding switch acts when the distance between the car and the lower final limit reaches a designated value as shown in the figure and table below.



speed / Distance	SU1 (L1)	SU2 (L2)	SU3 (L3)
Speed ⩽ 0.5 m/s	0.4 m	——	——
Speed ⩽ 1.0 m/s	1.0 m	——	——
Speed ⩽ 1.6 m/s	1.8 m	——	——
Speed ⩽ 1.75 m/s	2 m	——	——
Speed ⩽ 2.0 m/s	2 m	2.5 m	——
Speed ⩽ 2.5 m/s	2 m	4.0 m	——
Speed ⩽ 3.0 m/s	2 m	4.0 m	6.0 m

6.14 Door operator control circuit

6.14.1 Door operator control circuit indicators

Indicator mark	Function	Status description
X1	Door 1 open limit	Off: Door 1 open limit
X2	Door 1 close limit	Off: Door 1 close limit
X3	Door operator 1 overheat	Off: Door operator 1 overheat
X4	Door 1 light curtain	Off: Door 1 light curtain action
X5	Door 1 safety edge	Off: Door 1 safety edge action (invalid in system default setting)
X6	Door 2 open limit	Off: Door 2 open limit
X7	Door 2 close limit	Off: Door 2 close limit
X8	Door operator 2 overheat	Off: Door operator 2 overheat
X9	Door 2 light curtain	Off: Door 2 light curtain action
X10	Door 2 safety edge	Off: Door 2 safety edge action (invalid in system default setting)
Y1	Door 1 open	On: Door 1 open output
Y2	Door 1 close	On: Door 1 close output

Indicator mark	Function	Status description
Y3	Forced door close of door 1	On: Door 1 forced close output
Y4	Door 2 open	On: Door 2 open output
Y5	Door 2 close	On: Door 2 close output
Y6	Forced door close of door 2	On: Door 2 forced close output

6.14.2 CTB door open/close test mode instructions

In car top inspection state (X12 is off), it indicates that the "CTB door open/close test" mode is activated when the "door open button X23" and the "door close button X24" on the car top I/O board are pressed and held for 5 seconds till the CTB Y9 outputs and triggers the sound and light alarm device.

In the "CTB door open/close test" mode:

Shield all door open/close protection signals (such as light curtain, door open/close limit, etc.) and other door open/close signals of the system;

Press the "door open button X23", and Y1/Y4 outputs door open signal;

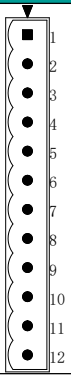
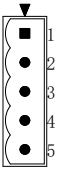
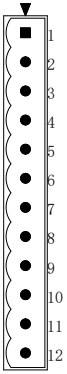
Press the "door close button X24", and Y2/Y5 outputs door close signal;

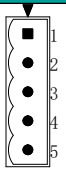
Check the installation of the door operator via testing (in case of a double-sided or through-type elevator, testing of operators can be conducted one by one and independently);

Upon receiving any running signals (EEO up/down running, inspection up/down running), the system automatically terminates the "CTB door open/close test" mode.

6.14.3 Door operator control circuit port instructions

Plugin number	Port	Plugin port definition	Port function	
MJ1 (door 1 operator)	1		205	220 V AC control power supply
	2		202	
	3		PE	
	4		YCM1	Door open/close COM
	5		KM1	Door 1 open
	6		GM1	Door 1 close
	7		GQ1	Forced door close of door 1

Plugin number	Port	Plugin port definition	Port function	
	8		XCM	24 V DC (input COM)
	9		SKM1	Door 1 open limit
	10		SGM1	Door 1 close limit
	11		XCM	24 V DC (input COM)
	12		TF1	Door operator 1 overheat protection (NC)
MS1 (door 1 car door lock)	1		157	Door 1 car door lock
	2		155	
	3		PE	Ground wire
	4		SGA	Auxiliary lock of door 1 car door
	5		SG2	
MJ2 (door 2 operator)	1		205	220 V AC control power supply
	2		202	
	3		PE	
	4		YCM2	Door open/close COM
	5		KM2	Door 2 open
	6		GM2	Door 2 close
	7		GQ2	Forced door close of door 2
	8		XCM	24 V DC (input COM)
	9		SKM2	Door 2 open limit
	10		SGM2	Door 2 close limit
	11		XCM	24 V DC(input COM)
	12		TF2	Door operator 2 overheat protection (NC)
MS2	1		159	Door 2 car door lock

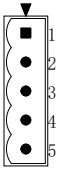
Plugin number	Port	Plugin port definition	Port function	
(door 2 car door lock)	2		157	
	3		PE	Ground wire
	4		SGA	Auxiliary lock of door 2 car door
	5		SG3	

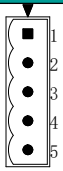
6.15 Light curtain control circuit

6.15.1 Light curtain control circuit indicators

Indicator mark	Function	Status description
X4	Door 1 light curtain	Off: Door 1 light curtain action
X5	Door 1 safety edge	Off: Door 1 safety edge action (invalid in system default setting)
X9	Door 2 light curtain	Off: Door 2 light curtain action
X10	Door 2 safety edge	Off: Door 2 safety edge action (invalid in system default setting)

6.15.2 Light curtain control circuit port instructions

Plugin number	Port	Plugin port definition	Port function	
GM1 (door 1 light curtain)	1		205	220 V AC control power supply
	2		202	
	3		PE	-
	4		XCM	24 V DC (input COM)
	5		SE1	Door 1 light curtain
	6		SC1	Door 1 safety edge
GM2	1		205	220 V AC control power supply

Plugin number	Port	Plugin port definition	Port function	
(door 2 light curtain)	2		202	
	3		PE	-
	4		XCM	24 V DC (input COM)
	5		SE2	Door 2 light curtain
	6		SC2	Door 2 safety edge

Chapter 7 System Commissioning

This chapter provides instructions for the basic commissioning steps of the Smile3000-M Integrated Elevator Control Cabinet. The procedures in this chapter allow for full elevator commissioning and normal operation of all basic functions.

7.1 Trial run commissioning flowchart

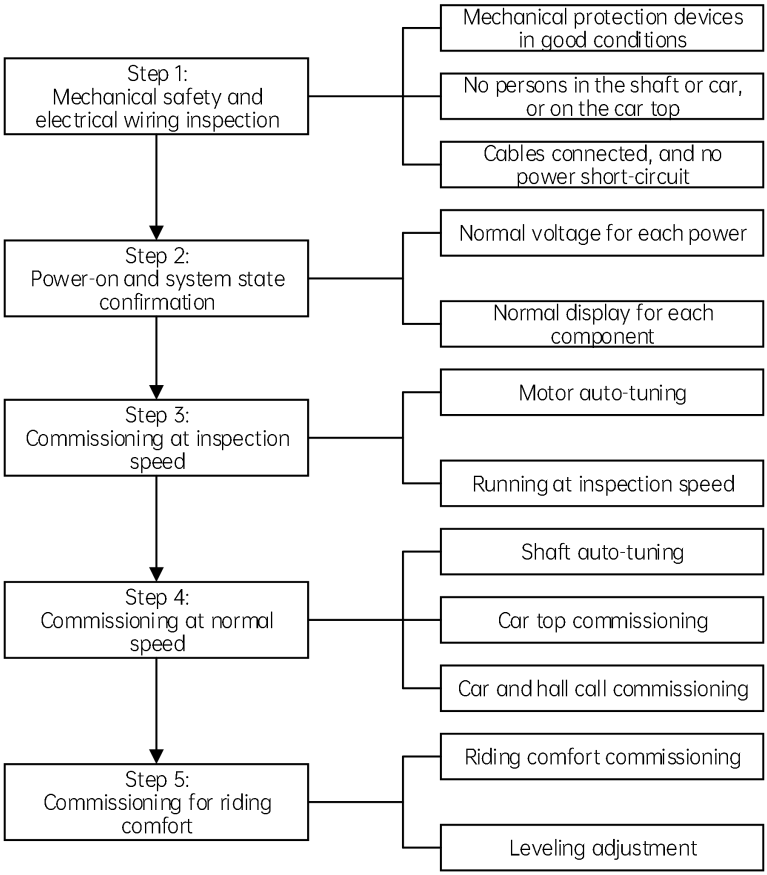


Figure 7-1 Smile3000-M control cabinet commissioning flowchart

7.2 Mechanical safety and electrical wiring inspection

Caution

The Smile3000-M series has default I/O allocations and settings. Users may reallocate and reconfigure them according to their application requirements The application examples in this manual are all based on the default settings.

7.2.1 System wiring diagram

The wiring diagram is detailed in Appendix B "System wiring diagram".

7.2.2 Safety inspection flowchart for system wiring

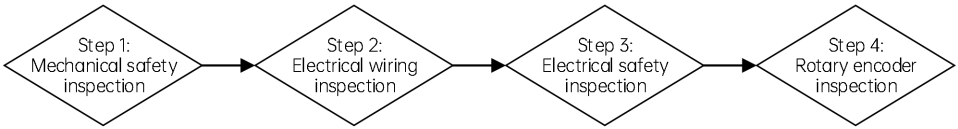


Figure 7-2 Flowchart of wiring and safety inspection before power-on

Step 1: Mechanical safety inspection

Please ensure that the mechanical safety devices are working normally, and there are no persons in the shaft, in the car, or on top of the car. Please ensure that the surrounding environment for elevator commissioning is safe.

Step 2: Electrical wiring inspection

(1) Ensure that the power input terminals (R/S/T) are connected correctly and securely;

(2) Ensure that motor cables (U/V/W) are connected to the controller correctly and securely;

(3) Ensure that the cabinet (controller) and motor are grounded correctly;

(4) Ensure that the safety circuit is conducted, and that the emergency stop buttons and switches in the cabinet and in the machine room function reliably;

(5) Ensure that the door lock circuit is conducted, and that the door lock circuit is disconnected when the car door or any landing door is fully opened.


Caution

- ✧ Use caution when deciding whether to short the safety circuit. Otherwise, severe injuries or death may occur if the elevator is started with the safety circuit shorted out.
- ✧ Before inspection running, ensure that there are no persons in the shaft. Failure to comply will cause personal injuries or death.
- ✧ It is forbidden to run the elevator at normal speed when the safety circuit is shorted out.
- ✧ Never start the elevator when the door lock circuit is shorted. Failure to comply will result in severe injuries or death.

Step 3: Electrical safety inspection

(1) Ensure that the line voltage of the user's power supply is within the range of 380 to 440 V AC;

(2) Ensure that the total lead-in wire gauge and total switching capacity meet the requirements.

(3) Ensure that input power supply (R/S/T) is not short-circuited between phases or to ground;

(4) Ensure that the inter-phase short-circuit or short-circuit to ground does not occur in the UVW phases of the controller, and that short-circuit to ground does not occur in the UVW phases of the motor;

(5) Ensure that the short-circuit to ground does not exist on the output side of the transformer;

(6) Ensure that the 220 V user's power supply is not short-circuited between phases or to ground;

(7) Ensure that the 24 V switched-mode power supply has no short-circuit to ground or between positive and negative output;

(8) Ensure that the CANbus/Modbus communication cables have no short-circuit to the 24 V power supply or short-circuit to ground.

Step 4: Rotary encoder inspection

(1) Ensure that the encoder is installed reliably with correct wiring;

(2) Ensure that the encoder signal cables and high-voltage circuit cables are routed through different conduits to minimize interference;

(3) It is recommended to directly connect the encoder to the control cabinet; if the cables are not long enough, an extension cable is required; the extension cable must be shielded and welded to the original encoder cables using soldering iron;

(4) Ensure that the shield of the encoder cable is reliably grounded on the controller side (single-end grounding is recommended to prevent interference).

7.3 Controller state confirmation

7.3.1 Electrical status check upon power-on

☐ √	Number	Item
☐	1	After power-on, check whether the line voltage of the three-phase controller input power supply (R/S/T) is within the range of 380 V to 440 V, with the phase unbalance factor not exceeding 3%. If the voltage is abnormal, turn the power off and check the user's power supply and the wiring of the input power supply (R/S/T).
☐	2	Check whether the input voltage of the MCB power supply terminal CN3 is DC 24 V ±15%. If the voltage is abnormal, turn the power off and check the switched-mode power supply and the wiring of DC 24 V circuit.

7.3.2 System status check upon normal power-on

☐ √	Number	Item
☐	1	Upon power-on, check whether the digital tube display is normal. If not, check the power supply.
☐	2	If the input signal indicators are partially on, it indicates that the DC 24 V power supply is normal, and the X input terminals on the MCB work properly. If none of the indicators is on, please check the external DC 24 V power supply.

7.3.3 Controller state and fault handling before commissioning

During commissioning, especially at first-time power-on, certain faults may occur, and that's because the conditions for automatic elevator running are not met or some peripheral signals are not connected. Such faults may include E41, E42, E35, E51, E52, and E58. The following table describes the troubleshooting before commissioning at inspection speed.

Table 7-1 Fault handling before commissioning at inspection speed

Fault	Name	Description	Solution
E41	Safety circuit fault	① At this fault, the elevator cannot run or be commissioned. ② By default, the safety circuit input signal is connected to terminals X4 and X25.	Check whether the signal indicator of input terminals X4 and X25 is on. If this indicator is off, the safety circuit is disconnected. In this case, please repair the safety circuit before

Fault	Name	Description	Solution
			commissioning at inspection speed.
E42	Door lock circuit fault	① At this fault, the elevator cannot run or be commissioned. ② By default, the door lock circuit signal is connected to terminals X5, X26, and X27.	Check whether the signal indicator of terminals X5, X26, and X27 is on. If this indicator is off, the door lock circuit is disconnected. In this case, please repair the door lock circuit before commissioning at inspection speed. Never short the door lock circuit when commissioning.
E35	Shaft auto-tuning data abnormal	This fault will be reported upon each power-on if shaft auto-tuning is not performed. It does not affect commissioning at inspection speed.	Press STOP RESET on the operating panel to cancel the fault display. Afterwards, perform the inspection at inspection speed.
E51	CAN communication fault	① This fault does not affect commissioning at inspection speed; however, it affects commissioning at normal speed. ② The COP indicator is off at this fault.	
E52	Hall call communication fault	① This fault does not affect motor auto-tuning or commissioning at inspection speed. ② The HOP indicator is off at this fault.	
E58	Shaft position limit switches abnormal	① The elevator cannot run. It is required to troubleshoot the fault first and then perform commissioning at inspection speed. ② The fault cause may be: The feedback inputs of both up and down level-1 slowdown switches are active simultaneously; feedback inputs of both up and down limit switches are active	① Connect X14 and X15 to level-1 slowdown switches (NC inputs) and check whether they are off simultaneously. Additionally, confirm that the level-1 slowdown switches are connected to the MCB and act properly. ② Terminals X12 and X13 are connected to the up and down limit switches (NC inputs). Check whether the signal indicators of

Fault	Name	Description	Solution
		simultaneously.	both X12 and X13 are off. Confirm that the limit switches are connected to the MCB. Check whether the limited switches act properly.

7.4 Commissioning at inspection speed

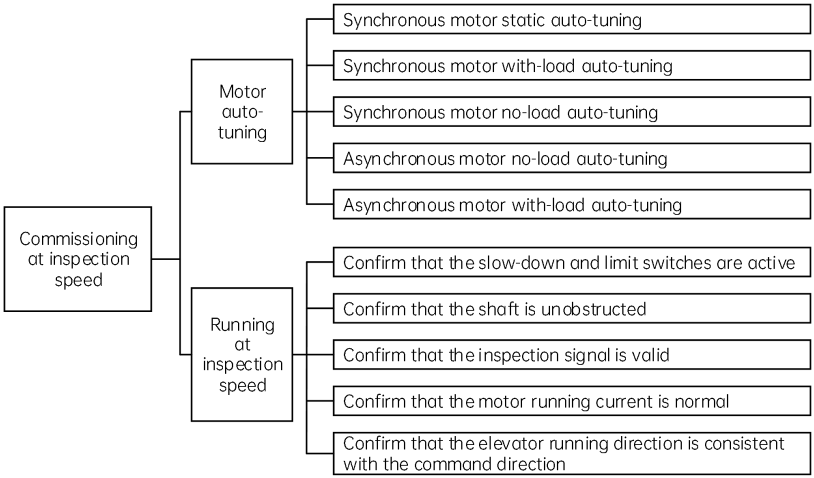
Caution

- ✧ Before starting commissioning at inspection speed, make sure that all installations and wiring comply with the technical specifications for electrical safety;
- ✧ During auto-tuning with the car, pay attention to the motor running direction to prevent the elevator from getting too close to terminal floors. It is recommended to start commissioning at inspection speed at a floor at least two floors away from the terminal floor;
- ✧ For certain cabinets, EEO is used instead of inspection running. Note that EEO shorts certain safety circuit in the shaft. So when performing EEO during commissioning at inspection speed, use caution when the car runs in a position close to the terminal floor.

Danger

- ✧ The motor may rotate during auto-tuning. Keep a safe distance from the motor to prevent personal injuries;
- ✧ During with-load auto-tuning, make sure that no personnel are in the shaft. Failure to comply will cause personal injuries or death.

The commissioning at inspection speed includes two stages: motor auto-tuning and test running at inspection speed.



7.4.1 Motor auto-tuning

7.4.1.1 Motor auto-tuning related parameters

Parameter	Description	Note
P02-00	Motor type	0: Asynchronous motor 1: Synchronous motor
P02-08	Encoder type	0: Sin/Cos encoder 1: UVW encoder 2: ABZ encoder 3: Reserved
P02-09	Encoder PPR	0 to 10000
P02-01 to P02-05	Rated motor power/voltage/ current/ frequency/speed	Model dependent; manual input
P00-01	Command source selection	0: Operating panel control 1: Distance control
P02-11	Auto-tuning mode	0: No operation 1: Rotary with-load auto-tuning

Parameter	Description	Note
		2: Rotary no-load auto-tuning 3: Shaft auto-tuning 1 4: Shaft auto-tuning 2 5: Synchronous motor static auto-tuning

7.4.1.2 Motor auto-tuning flowcharts

(1) Synchronous motor auto-tuning

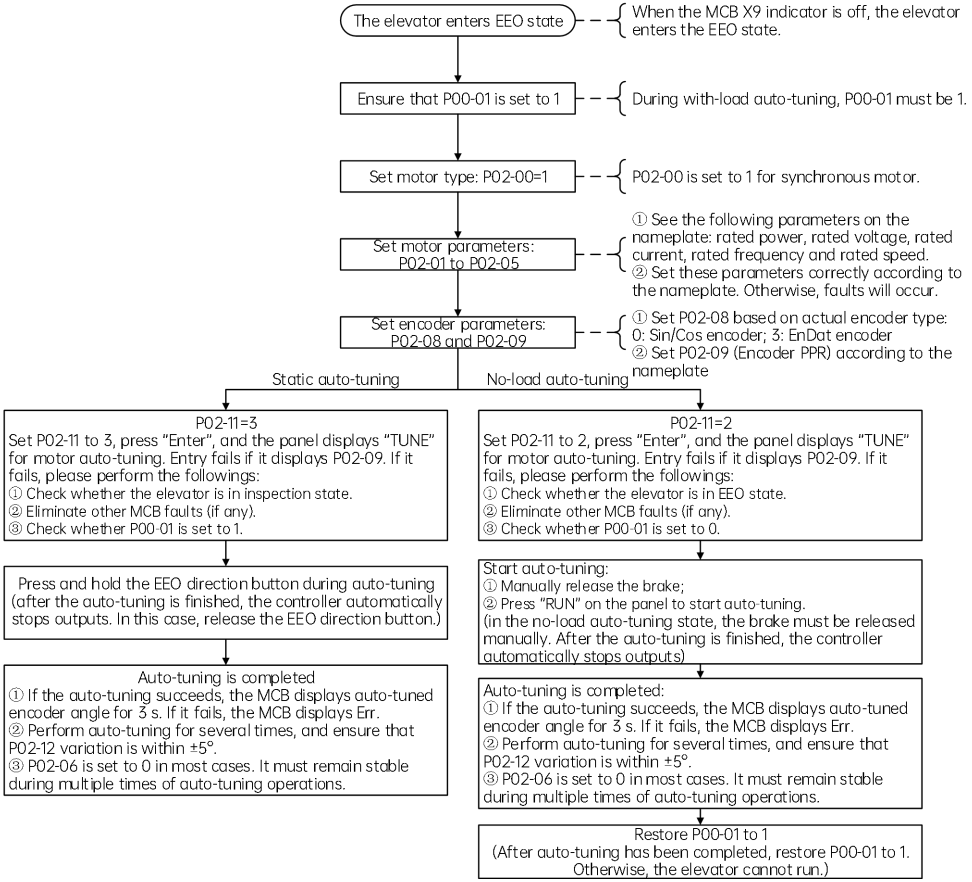


Figure 7-3 Synchronous motor auto-tuning flowchart


Caution

- ✧ Static auto-tuning is only applicable to the Sin/Cos encoder and absolute encoder when these encoders are working with synchronous motors. Ensure that the wiring sequence of output UVW cables is consistent with that of encoder AB and CD. Otherwise, the motor auto-tuning will fail, and it is required to manually change the sequence of any two phases among UVW and do auto-tuning again. Auto-tuning is successful if there is not fault during inspection running;
- ✧ During static auto-tuning, the motor is auto-tuned along with the car. Under this condition, the brake is not released and the motor is not rotating;
- ✧ During no-load auto-tuning, the motor must be disconnected from the car before tuning.

Precautions for synchronous motor auto-tuning include the followings.

(1) Synchronous motor auto-tuning learns the initial motor pole angle, initial encoder angle, motor wiring mode, and D-axis and Q-axis inductance.

(2) Perform three or more times of auto-tuning. Compare the obtained values of P02-12 (Encoder initial angle), and ensure a difference is within ±5°.

(3) Each time the encoder type, encoder cables, or motor wiring sequence as well as rated motor current, frequency, or speed is changed, perform motor auto-tuning again.

(4) User can modify P02-12 manually. The modification takes effect immediately. Therefore, after replacing the MCB, user can directly run the controller by manually setting P02-12 to the previous value and without performing motor auto-tuning.

(2). Asynchronous motor auto-tuning

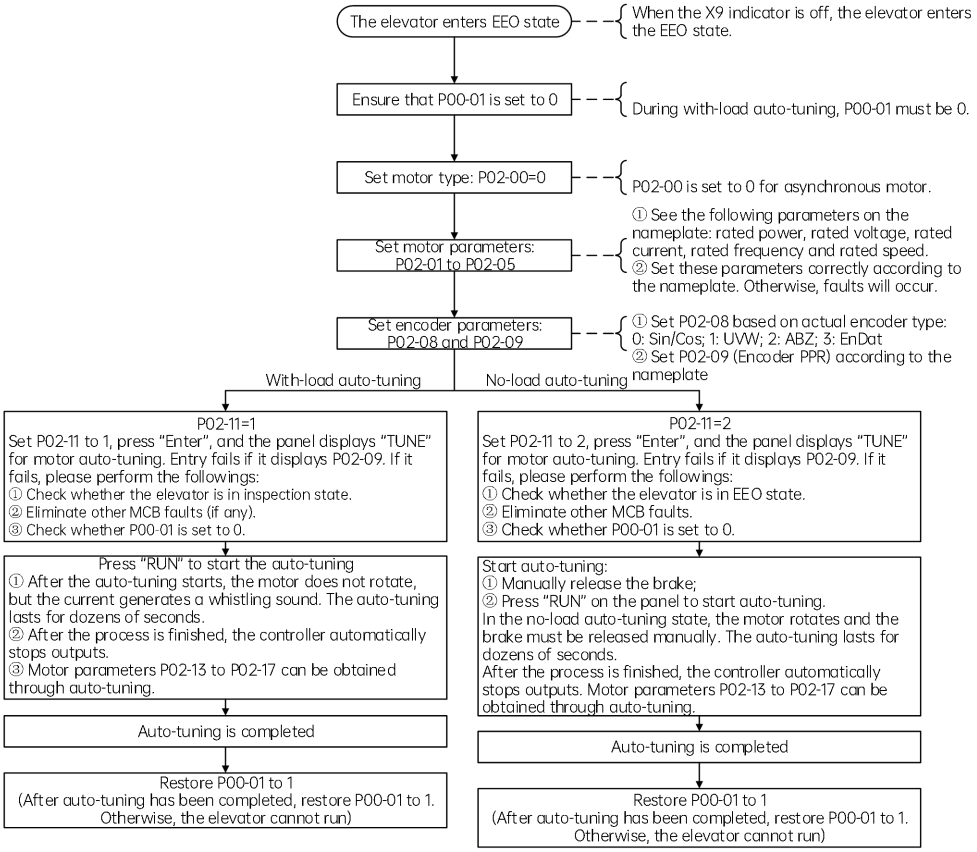


Figure 7-4 Asynchronous motor auto-tuning flowchart

Precautions for asynchronous motor auto-tuning include the followings.

(1) For asynchronous motor with-load auto-tuning, the motor is auto-tuned along with the car; for asynchronous motor no-load auto-tuning, the motor must be disconnected from the car for auto-tuning.

(2) The A/B phase sequence of the encoder must be correct. If the sequence is incorrect, Err38 is reported. To solve the problem, interchange the A/B phase of the encoder.

The system handles the output commands to the RUN contactor or brake contactor differently in different motor auto-tuning modes, as described in the following table.

Table 7-2 Output state of RUN and brake contactors and motor state

Working status / Tuning mode / Controlled object	No-load auto-tuning		With-load auto-tuning		
	Synchronous motor	Asynchronous motor	Synchronous motor	Synchronous motor static	Asynchronous motor
RUN contactor	Working	Working	Working	Working	Working
Brake contactor	Not working	Not working	Working	Not working	Not working
Motor	Rotating	Rotating	Rotating	Not rotating	Not rotating

Possible faults and their solutions

Issue	Symptom	Solution
Faults in dynamic auto-tuning	Subcode 1: Compared with the phase sequence of power lines UVW, AB in same direction, CD in different direction	Set P04-30 to reverse the encoder CD direction, then perform dynamic auto-tuning again.
	Subcode 2: Compared with the phase sequence of power lines UVW, AB in different direction, CD in same direction	Set P04-29 to reverse the encoder AB direction, then perform dynamic auto-tuning again.
	Subcode 3: The directions of AB and CD are opposite to UVW	① Check whether encoder pulses per revolution (PPR) is set correctly. ② Check whether the encoder signal is interfered: whether the encoder cable runs through the conduit independently, whether the cable is too long, and whether the shield layer is grounded at one end. ③ Check whether the encoder is installed firmly, and whether the rotating shaft is firmly connected to the motor shaft by observing whether the encoder is stable during normal-speed running. ④ Check whether the encoder wiring is correct.
	Subcode 4: AB, CD and power lines are in the same direction, but the installation angle result is large deviated, causing AB and CD abnormalities	
	Subcode 5: CD signal abnormal	
	Subcode 6: AB signal abnormal	
	Subcode 7: AB and CD signals abnormal	

Caution

- ✧ When the above problems occur, change the sequence of motor cables connected to the controller;
- ✧ Adjustment principle of motor wiring sequence: interchange any two adjacent motor cables once; do not change for multiple times.

7.4.2 Running test at inspection speed

Parameters related to the running test at inspection speed are listed below.

Parameter	Description	Note	Default
P00-07	Elevator running direction	0: Running direction unchanged 1: Running direction reversed	0
P03-05	Elevator speed in the EEO state	0.100 to 0.300 m/s	1.000 m/s

Running test process at inspection speed

(1) Ensure that the motor running direction is correct.

After the auto-tuning is completed, perform test run at inspection speed to check whether the actual motor running direction is consistent with the command direction. If not, change the motor direction by modifying F00-07 (Elevator running direction).

(2) Ensure that the motor running current is normal.

In the inspection state, the motor current during no-load running shall be smaller than 1 A, and does not exceed the rated motor current during with-load running at a constant speed in most cases. After multiple times of auto-tuning, if the difference between two adjacent auto-tuned encoder angles is very small but the motor current during with-load running at a constant speed exceeds the rated motor current, check the following items:

① Check whether the brake is fully released;

② Check whether the elevator balance coefficient is normal;

③ Check whether the guide shoes for car or counterweight are too tight.

(3) Confirm that car top inspection is valid.

Confirm that the car top inspection signal is active and the EEO is inactive when the car top inspection signal is active. That is, the car top inspection takes precedence over the EEO.

(4) Confirm that the shaft is unobstructed.

Check that the shaft is unobstructed and with no obstacles, to reduce the risk of car damage.

(5) Confirm that the slowdown switches and limit switches at the terminal floor are active.

Check whether the slowdown switches and limit switches are active when the car moves to a terminal floor. Take care in this process. Avoid too long running time and distance each time

because over-travel will cause mechanical damage to the car.

7.5 Commissioning at normal speed

7.5.1 Shaft auto-tuning

7.5.1.1 Preparations for shaft auto-tuning

(1) Ensure that shaft switches act properly.

The shaft switches include final limit switches, limit switches, slowdown switches, and leveling switches.

(2) Ensure that the acting sequence of the leveling switches is correct.

Installing one leveling switch is recommended. If multiple leveling switches are installed, check that the acting sequence is correct. For example, if three leveling switches are installed:

① Acting sequence at inspection up running: up leveling switch → door zone switch → down leveling switch

② Acting sequence at inspection down running: down leveling switch → door zone switch → up leveling switch

(3) Confirm that CAN communication is normal.

Ensure that CAN communication between the MCB and the CTB is normal (the signal indicator CAN1 flashing and E51 not reported). If CAN communication is abnormal, see E51 in "Fault handling" section to find solutions.

Related parameters:

Parameter	Description	Range	Default	Note
P00-04	Rated speed	0.250 to 4.000 m/s	1.600 m/s	-
P11-06	Top floor of elevator	1 to 48	9	Actual number of floors + 1 - bottom floor
P11-07	Bottom floor of elevator	1 to 48	1	-
P03-06	Shaft auto-tuning speed	0.100 to 0.630	0.500 m/s	-

Caution

After modifying P00-04, perform shaft auto-tuning again. Otherwise, the elevator will run improperly.

7.5.1.2 Conditions for shaft auto-tuning

(1) The elevator is in the EEO state.

(2) The elevator runs to a position below the leveling position of the bottom floor and at least one leveling switch is disconnected from the leveling plate. The down level -1 slowdown switch signal input to the MCB is active (This condition is specific to two-floor elevators).

(3) The system is not in the fault state. If there is a fault, press STOP RESET to reset the fault.

7.5.1.3 Perform shaft auto-tuning

When the preceding conditions are met, start shaft auto-tuning using any of the following methods:

(1) Set P02-11 to 3 on the operating panel and switch EEO (or inspection) to normal state;

(2) Set P7 to 1 on the keypad of the MCB. Switch EEO (or inspection) to normal state.

After shaft auto-tuning starts, the elevator runs at the speed set in P03-06 (Shaft auto-tuning speed). It automatically runs down to the limit position at the bottom floor and then runs up to the leveling plate of the top floor and stops. If the keypad on the MCB displays the current floor number (top floor) at this time, it indicates that shaft auto-tuning succeeds.

If E35 is reported during shaft auto-tuning, it indicates that shaft auto-tuning fails. Refer to "Fault handling" section to solve the problem and perform shaft auto-tuning again.

7.5.1.4 Test running at normal speed

After shaft auto-tuning has been completed successfully, the running at normal speed may fail because the door operator controller and full-load and overload functions are not commissioned. To solve this problem, enable the door open forbidden and overload functions by setting parameters before performing a running test at normal speed:

Step 1: Prohibit door open by setting P17-05 to 1;

Step 2: Shield the overload signal by setting P17-06 to 1;

Step 3: Turn the inspection switch to the normal state. Ensure that the elevator parameter D01-14 is automatic running;

Step 4: Call the floor for test at normal speed by setting P17-00;

Step 5: After the running test at normal speed is completed, set P17-00 to P17-07 to 0.


Caution

After power-off and then power-on, P17-00/01/02/05/06/07 will be restored to 0. If user needs to continue the test at normal speed, set these parameters again.

7.5.2 CTB commissioning

This section takes the single-door (door 1) elevator system as the example. Related signals include: light curtain 1, door 1 open and close limit, door 1 open and close output, and so on, as shown below.

Table 7-3 Car top commissioning related signals

CTB terminal	Function code	Terminal definition
X1	P07-01=103	Front door open limit
X2	P07-02=105	Front door close limit
X4	P07-02=101	Front door light curtain
Y1	P07-05=1	Front door open output
Y2	P07-05=2	Front door close output

Caution

- ✧ Ensure that the car top inspection is in the active state to avoid personal injuries.
- ✧ Change the level active conditions (high or low) of input signals.

For a two-door system, door 2 is controlled by terminals like light curtain 2, door 2 open and close limit, etc., the same as door 1. Hence, no further description will be made in this section.

The system can monitor the input and output of light curtain and door control signals and their corresponding valid states.

Input and output status shown by the corresponding indicators on CTB

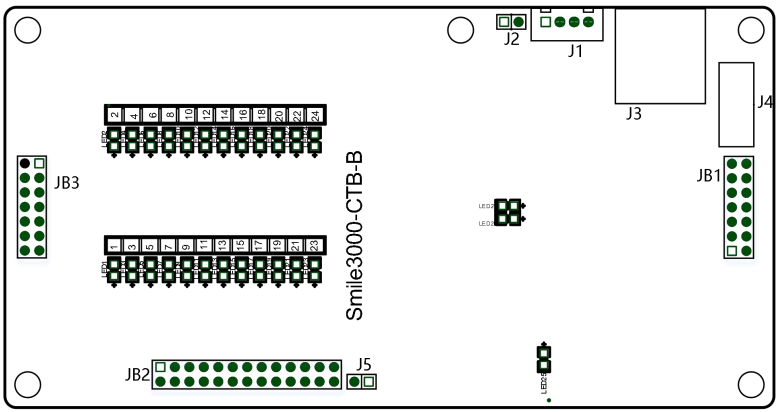


Figure 7-5 Car top board signals

Table 7-4 Signal indicator status

Indicator	Status
X1 to X24 input indicators on	It indicates high-level input at corresponding input terminal.
Y1 to Y10 output indicators on	It indicates output at corresponding output terminal.

7.5.2.1 Light curtain commissioning

(1) Check whether the light curtain wiring is correct and firm, and whether the power supply voltage is proper.

(2) Confirm whether the light curtain works normally through the input indicator on the CTB. If X4 keeps unchanged or changes abnormally, it indicates that the light curtain is abnormal.

Table 7-5 Light curtain judgment

Signal / State	Light curtain block state	X4 indicator state
When the light curtain signal is "NO"	Unblocked	Off
	Blocked	On
When the light curtain signal is "NC"	Unblocked	On
	Blocked	Off

(3) After the commissioning of light curtain, check whether the settings of P07 parameters are consistent with the actual "NO/NC" state of light curtain. If not consistent, the input signals shall be opposite.

7.5.2.2. Door operator commissioning

The interaction between the door operator controller and the elevator system is: door open and close command output by CTB, and door open and close limit signal feedback by the door operator controller. After the door operator commissioning and installation, check whether the wiring is correct, and whether the limit signals are consistent with the system default settings.

Perform door operator commissioning using the following steps:

(1) Check that P17-05 is set to 0 (door open is allowed).

(2) Check whether the door operator controller is wired correctly and securely, and whether the power voltage is proper.

(3) Perform door operator commissioning, and check whether the input and output control of door operator controller are normal in the terminal control mode.

Check whether the door open/close output is normal:

① Short Y1 on the CTB, and door 1 opens.

② Short Y2 on the CTB, and door 1 closes.

If the door acts abnormally after shorting Y1 or Y2 on the CTB, check:

① whether the wiring between the CTB and the door operator controller is correct.

② whether the function setting of door open/close input terminals is correct.

③ whether door operator controller commissioning failed. If failed, perform commissioning again.

Check whether the door open/close limit signal feedback from the door operator controller is normal by observing the X input terminal indicators on the CTB according to the following table.

Table 7-6 Door open/close limit judgment

Signal / State	Door state	X3 indicator state	X5 indicator state
When the door open/close signal is "NO"	At door open limit	Steady On	Steady Off
	During door open/close	Steady Off	Steady Off
	At door close limit	Steady Off	Steady On
When the door open/close signal is "NC"	At door open limit	Steady Off	Steady On
	During door open/close	Steady On	Steady On
	At door close limit	Steady On	Steady Off

If the states of X3 and X5 indicators are inconsistent with the actual door state or stay unchanged, check:

① whether the wiring between the CTB and the door operator controller is correct.

② whether the function setting of door open/close limit output terminals is correct.

③ whether door operator controller commissioning failed. If failed, perform commissioning again.

(4) After the commissioning of door operator controller, check whether the settings of P07-01 and P07-02 are consistent with the actual "NO/NC" state of door open/close limit signals. If not consistent, it is required to change the NO/NC of the input signals.

Troubleshooting for common door control abnormalities:

(1) When the door is closed, an open command cannot open the door.

① Check whether the "door open limit" signal is constantly effective.

② Check whether D03-01 has a door open output (segment 1 of digital tube 1). If there is an output, user needs to check whether the wiring between the CTB and the door operator controller is correct, or whether the door operator controller is working normally.

(2) When the door is open, a close command cannot close the door.

① Check whether the light curtain signal is constantly effective.

② Check whether D03-01 has a door close output (segment 2 of digital tube 1). If there is an output,

user needs to check whether the wiring between the CTB and the door operator controller is correct, or whether the door operator controller is working normally.

(3) If the elevator does not open the door at door zone, E53 is reported. Refer to the "Fault handling" section for instructions.

7.5.3 HCB installation and setting

This section describes hall call board (HCB) installation and setting of an independent single-door elevator system. For HCB description of double-sided (through-type) door and parallel door systems, refer to the sections related to through-type door solution and parallel & group control.

(1) HCB installation

The number of service floors is the same as the number of HCBs. Non-service floors do not need HCBs, as shown in the following figure.

HCB communicates with the main board through Modbus. All HCBs are in parallel and connected to the MCB.

(2) HCB address setting

User needs to set an address for each HCB before use.

The HCBs must be configured with different addresses. To learn how to set HCB addresses, refer to the corresponding HCB manual).

Set the address based on the floor leveling plate number.

From the bottom floor, set the HCB address to N if the N^{th} leveling plate is located at the floor, as shown in the following figure.

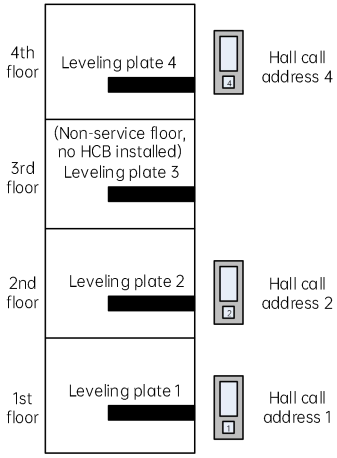


Figure 7-6 HCB installation and address setting

After completing HCB installation and address setting, user can call the elevator by the HCB to start

normal-speed running.


Caution

When the display board is installed in the car, its address must be set to 0.

7.6 Comfort adjustment

Auto-tuning mode	Type	Adjustment method
Auto-tuning at inspection speed	Riding comfort adjustment	Elevator startup/stop comfort adjustment
		Running curve comfort adjustment
	Leveling accuracy adjustment	Proper use of leveling components
		All floors leveling accuracy adjustment
		Single floor leveling accuracy adjustment

7.6.1 Riding comfort adjustment

The riding comfort is an important factor of the elevator's overall performance. Improper installation/selection of mechanical parts will cause discomfort. Thus, improving the riding comfort mainly involves the adjustment of output control and the elevator's mechanical construction.

7.6.1.1 Adjustment of system control performance

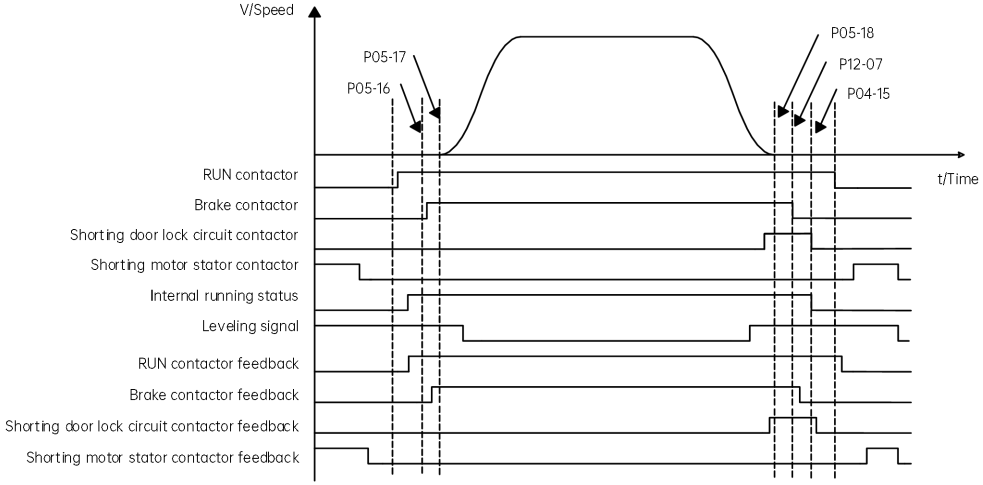


Figure 7-7 Running time sequence of the controller

(1) Elevator startup and stop comfort adjustment

Related parameters

Parameter	Name	Range	Default
P04-00	Speed loop proportional gain 1	0 to 100	40
P04-01	Speed loop integral time 1	0.01 to 10.00 s	0.60 s
P04-03	Speed loop proportional gain 2	0 to 100	35
P04-04	Speed loop integral time 2	0.01 to 10.00 s	0.80 s

a) Adjustment to abnormal motor startup

Parameters P04-00, P04-01, P04-03, and P04-04 are used to adjust the speed dynamic response characteristics of the motor.

To achieve a faster system response, increase the proportional gain or reduce the integral time. Be aware that either too big gain or too short time may lead to system oscillation.

Decreasing the proportional gain or increasing the integral time will slow the dynamic response of the motor. However, too small proportional gain or too long integral time may cause motor speed tracking abnormality, resulting the fault E33 or unstable leveling at stop.

The default setting is proper for motors of common power ratings, and no modifications are required. These parameters need to be adjusted only for small-power motors (Power ≤ 5.5 kW) because an oscillation may occur.

Perform the following steps to adjust:

① Decrease the proportional gain first (between 10 and 40) to ensure that the system does not oscillate.

② Reduce the integral time (between 0.1 and 0.8) to ensure that the system has a quick response but small overshoot.

b) Adjustment of comfort at elevator startup

No-load-cell (sensor) startup comfort adjustment

Related parameters:

Parameter	Name	Range	Default	Description
P12-00	Pre-torque selection	0: Pre-torque disabled 1: Pre-torque enabled 2: Automatic compensation enabled 3: Both zero servo and load cell pre-torque compensation enabled	0	When a load cell is used and the inconsistency of startup effects at different loads is caused by improper load cell linearity, set P12-00 to 3
P12-01	Pre-torque offset	0.0% to 100.0%	50.0%	Load cell pre-torque compensation regulation parameters
P12-02	Drive gain	0.00 to 2.00	0.60	
P12-03	Brake gain	0.00 to 2.00	0.60	
P04-09	Zero servo gain coefficient	2.0% to 50.0%	15.0%	Zero servo adjustment parameters (P04-09, P04-10 and P04-11 are valid only when P12-00 is set to 2 or 3.)
P04-10	Zero servo proportional gain	0.00 to 2.00	0.50	
P04-11	Zero servo integral gain	0.00 to 2.00	0.60	

Adjustment description:

When the load cell and automatic pre-torque compensation are both enabled, the controller identifies the motor state (braking or driving) according to the load cell signal and then automatically computes the required torque compensation. It also rectifies the compensation value quickly based on the slight movement of the encoder startup.

Adjust the riding comfort at startup based on the methods used in "Adjustment for no-load-cell startup" and "Adjustment for load cell startup".

c) Handling of rollback at elevator startup and stop

Related parameters:

Parameter	Name	Range	Default
P05-17	Holding time of zero-speed torque current upon brake release	0.000 to 2.000 s	0.600 s
P12-07	Holding time of zero-speed torque current upon brake close	0.200 to 1.500 s	0.600 s

P05-17 specifies the time from the moment the system sends a brake release command. Within the set time range, the system maintains the zero-speed torque current output to prevent rollback. If there is obvious rollback at elevator startup, increase P05-17 properly.

P12-07 specifies the time from the moment the system sends a brake close command. Within the set time range, the system maintains the zero-speed torque current output to prevent rollback. If there is obvious rollback at elevator startup, increase P12-07 properly.

d) Handling of current noise at motor startup and stop

During elevator startup or stop, certain motors may generate noise when the current is applied before the brake is released or when the current is removed after the brake is closed. In this case, increase P04-14 and P04-15 properly.

Parameter	Name	Range	Default
P04-14	Torque acceleration time	1 to 500 ms	1 ms
P04-15	Torque deceleration time	1 to 3000 ms	350 ms

e) Adjustment of large mechanical static friction

Parameter	Name	Range	Default
P05-00	Startup speed	0.000 to 0.050 m/s	0.000 m/s
P05-01	Holding time of startup speed	0.000 to 5.000 s	0.000 s

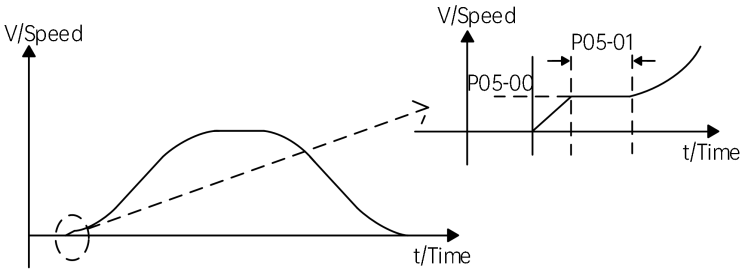


Figure 7-8 Startup timing diagram for countering static friction

Terrible riding experience due to static friction may often exist in villa elevators. Great static friction is generated at the moment of startup out of the large friction between the guide shoes and the guide

rails. You need to start the elevator at a specified speed by setting P05-00 and F05-01 to counter static friction for riding comfort.

(2) Running curve adjustment for riding comfort

Parameter	Name	Range	Default
P05-02	Accelerate rate	0.200 to 1.500 m/s²	0.700 m/s²
P05-03	Acceleration start segment	0.300 to 4.000 s	1.500 s
P05-04	Acceleration end segment	0.300 to 4.000 s	1.500 s
P05-05	Deceleration rate	0.200 to 1.500 m/s²	0.700 m/s²
P05-06	Deceleration end segment	0.300 to 4.000 s	1.500 s
P05-07	Deceleration start segment	0.300 to 4.000 s	1.500 s

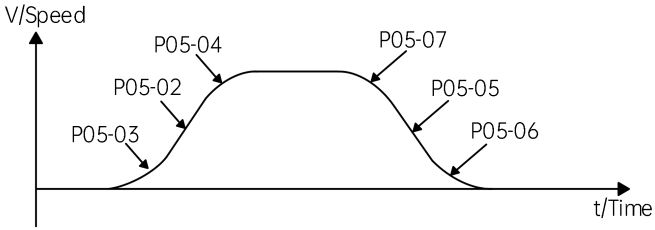


Figure 7-9 Running curve

P05-02, P05-03, and P05-04 are used to set the running curve during which the elevator accelerates from zero at startup to the maximum speed. If the acceleration is too fast causing bad riding comfort, decrease P05-02 and increase P05-03 and P05-04 to make the acceleration curve smoother. If the acceleration is found too slow, increase P05-02, and decrease P05-03 and P05-04.

Similarly, adjust P05-05, P05-06 and P05-07 properly to make the deceleration process more acceptable.

7.6.1.2 Mechanical factors affecting riding comfort

The mechanical factors affecting the riding comfort include guide rails, guide shoes, steel rope, brake, car balancing level, as well as the vibration resonance. For asynchronous motors, gearbox wear or installation errors may also lead to poor riding experience.

Number	Mechanical factor	Description
1	Guide rail	Installation of the guide rail mainly involves perpendicularity, surface flatness, joint connection smoothness and parallel level between two guide rails.

Number	Mechanical factor	Description
2	Guide shoe	Tightness of the guide shoes influences the riding comfort. The guide shoes must not be too loose or tight.
3	Steel rope	The steel ropes help the traction machine to drive the car. Too flexible steel ropes combined with irregular resistance during the car running may cause oscillation of the car. In addition, unbalanced stress of multiple steel ropes may cause the car to jitter during running.
4	Brake	The riding comfort during running may be influenced if the brake arm is installed too tightly or released incompletely.
5	Car balancing level	If the car weight is unbalanced, it will cause uneven stress of the guide shoes that connect the car and guide rails. As a result, the guide shoes will rub with the guide rails during running, affecting the riding comfort.
6	Gearbox	For asynchronous motors, gearbox wear or installation errors may affect the riding comfort.
7	Vibration resonance	Resonance is an inherent feature of a physical system, related to the material and quality of system components. Reduce the vibration resonance by adjusting the car weight or counterweight and adding isolators at component connections (for example, placing rubber gasket under the traction machine)

7.6.2 Leveling accuracy adjustment

7.6.2.1 Description of leveling components

(1) Leveling plate

The length of the leveling plate needs to match the leveling switch.

Generally, when the leveling switch runs across the middle of the leveling plate, there is at least 10 mm distance between the leveling switch and each end of the leveling plate. All leveling plates must have roughly the same length, with deviation smaller than 5 mm.

(2) Leveling switch

The leveling plate must be perpendicular to the leveling switch. When the car arrives at the floor, the leveling plate must be into the leveling switch by at least 2/3 of its own length.

(3) Optoelectronic switch

The NO-type photoelectric switches are recommended to improve signal sensing stability.

7.6.2.2 Leveling accuracy adjustment description

(1) All-floor adjustment

Parameter	Name	Range	Default
P11-00	Leveling adjustment	0 to 60 mm	30 mm

P11-00 is used to adjust the car landing position at all floors, which is 30 mm by default. The landing position at all floors will change after P11-00 is modified.

Simple principle: Increase P11-00 if under-leveling occurs at every floor, and decrease P11-00 if over-leveling occurs at every floor.

(2) Single-floor adjustment

Adjust the car landing position at each floor separately by setting group P20 parameters.

Leveling adjustment parameters in group P20:

Parameter	Name	Range	Default	Unit
P20-00	Leveling adjustment mode	0 to 1	0	-
P20-01	Leveling adjustment record 1	00000 to 60060	30030	mm
P20-02	Leveling adjustment record 2		30030	mm
...	...		...	...
P20-23	Leveling adjustment record 23		30030	mm

The leveling adjustment method is described below:

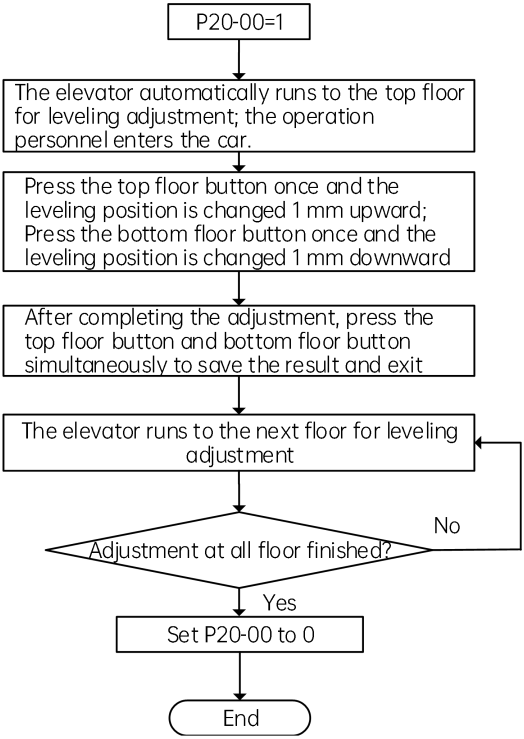


Figure 7-10 Single-floor leveling accuracy adjustment

Caution

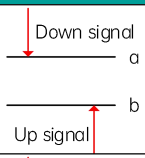
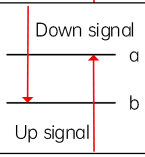
- ✧ Ensure that shaft auto-tuning has been completed successfully, and the elevator runs properly at normal speed.
- ✧ After P20-00 is set to 1, the elevator does not respond to hall calls any more. It automatically runs to to top floor and keeps the door open after arrival.
- ✧ During adjustment, the car display board displays 00 or the value after adjustment. Positive value: up arrow + value; Negative value: down arrow + value; Adjustment range: ±30 mm.
- ✧ After saving the adjustment result, the car display board displays the current floor number.
- ✧ Note: If the leveling accuracy at a certain floor needs no adjustment, user also needs to save the data once. Otherwise, the car calls cannot be registered.

7.6.2.3 Leveling adjustment guide

(1) If the stop positions when the elevator arrives at each floor are fixed and the same in up and down directions and the car is not leveled with the hall sill, make adjustment for related floors by setting group P20 parameters.

(2) If the stop positions when the elevator arrives at each floor are fixed but different in up and down directions, make adjustment by setting both P11-00 and group P20 parameters. The specific adjustment methods are as follows:

First, adjust the overall leveling error of all floors by setting P11-00. Assume that the car landing positions in down and up directions are "a" and "b" respectively. The values to be adjusted and the adjustment methods are shown in the following table.

Type	Name	Value to be adjusted	Adjustment method
Under-leveling		H=(a-b)/2	(P11-00)+H
Over-leveling		H=(b-a)/2	(P11-00)-H

Then, adjust the leveling accuracy of all the floors with leveling error by setting parameters in group P20.

Additional information:

Prevent over-adjustment in group P20 parameters when the leveling deviation is too large.

Assume that after the car arrives at the leveling zone, the distance between the edge of the leveling switch and the edge of the leveling plate is A, and the height deviation between the car sill and the landing door sill is B (shown in the following figure). If B $\geqslant$ A for a certain floor, you need to adjust the leveling plate position of this floor first to ensure that B $\leqslant$ A upon arrival. Otherwise, the elevator may still stop outside the leveling zone even if you have adjusted the leveling accuracy of this floor by setting parameters in group P20.

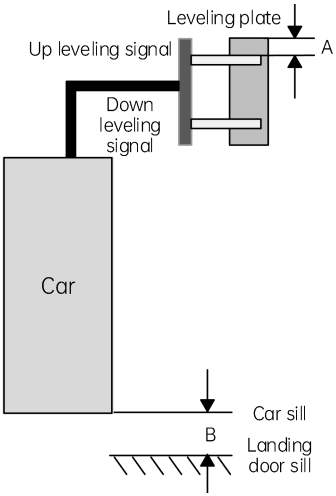


Figure 7-11 Leveling distance

If the elevator stop position or leveling is not consistent for different travels or loads, it may be caused by improper speed loop parameters. To solve the problem, adjust the speed loop proportional gain or reduce the speed loop integral time properly.

Chapter 8 Function Description

8.1 Elevator lockout and scheduled lockout

Activation method

Set the X1 port function of any HOP to 1 (lockout signal). The elevator will enter the lockout mode when the lockout signal is valid.

Set the MCB I/O input port function to 028 or 128 (lockout signal). The elevator will enter the lockout mode when the lockout signal is valid.

Parameter	Name	Range	Default	Unit
P11-11	Parking floor for elevator lockout	A01-07 to A01-06	1	-

8.2 Returning to fire emergency floor (fire-fighting linkage)

8.2.1 Function description

The elevator cancels all car commands and car calls, and stops responding to hall calls.

When switching to the fire emergency state, the elevator automatically exits the parallel/group control mode if it previously exists.

(1) If the elevator is at a non-fire-emergency floor before returning:

① The elevator will directly run to the fire emergency floor if the door is in the close state;

② If the door is open, the car buzzer will automatically output sound alarm till the door is fully closed; if the door close is obstructed, a forced door close will be implemented after 15 seconds; the elevator will return to the fire emergency floor when the door is fully closed.

(2) If the elevator is running in the opposite direction of the fire emergency floor when a return signal is received, the car will be landed at the nearest floor, and then return to the fire emergency floor without opening the door.

(3) If the elevator is running in the direction of the fire emergency floor when a return signal is received

① When the speed is high, the elevator will cancel all calls, and directly return to the fire emergency floor in a non-stop fashion;

② When the elevator is approaching the destination floor with slowing speed, the elevator will stop at the destination floor first, and then return to the fire emergency floor without opening the door.

After the arrival at the fire emergency floor, the elevator will keep the door open, and output a "Fire emergency floor arrival" signal.

8.2.2 Activation method

Set the HOP input port function to 2 (fire emergency signal). when the signal is valid, the elevator will enter the "Returning to fire emergency floor" mode.

Input via the control cabinet port, and enter the "Returning to fire emergency floor" mode.

Plugin port	Indicator	Port mark	Port function
BIO	Y8	Y8	Fire emergency linkage output (fire emergency floor arrival)
		Y8M	Passive signal
	X34	X34	Fire emergency linkage input
		24+	Passive signal

8.2.3 Related parameters

Parameter	Name	Range	Default	Unit
A01-07	Fire emergency floor	P11-07 to P11-06	1	-

8.3 Auto-return to parking floor and standby car door mode

When the elevator remains idle for a time span exceeding the value set by P16-00, the car will automatically return to the parking floor. User can also set the door open/close mode for the standby elevator.

Parameter	Name	Range	Default	Unit
P11-08	Parking floor for idle elevator	P11-07 to P11-06	1	-
When the elevator remains idle for a time span exceeding the value set by P16-00, the car will automatically return to the parking floor set by this parameter.				
P16-00	Maximum idle time before returning to parking floor	0 to 240	10	min
When this parameter is set to 0, the corresponding function is disabled. When the elevator remains idle for a time span exceeding the value set by P16-00, the car will				

Parameter	Name	Range	Default	Unit
automatically return to the parking floor				
P08-10	Door state for standby elevator	0: Standby with door closed at parking floor 1: Standby with door open at parking floor 2: Standby with door open at each floor	0	-
This parameter sets the door state for a standby elevator when the car is at the parking floor.				

8.4 Lighting/Fan control

Parameter	Name	Range	Default	Unit
P16-01	Car energy-saving time	0 to 240	2	min
When this parameter is set to 0, the corresponding function is disabled. During automatic running, if there has been no calls for a time span set by P16-01, the system will automatically cut off the power of the lighting and the fan.				

8.5 Soft limit

Parameter	Name	Range	Default	Unit
P11-49	Program control selection 1	Bit1 (Soft limit function)	Bit1=1	-
When Bit1=1, the soft limit function will be enabled. If the up slowdown and the down leveling are valid, and the up leveling is invalid, it is determine to be up limit; If the down slowdown and the up leveling are valid, and the down leveling is invalid, it is determined to be down limit.				

8.6 Wrong call cancellation

Parameter	Name	Range	Default	Unit
P12-09	Elevator function	Bit11 (Wrong car call	Bit11=0	-

Parameter	Name	Range	Default	Unit
	selection 1	cancellation)		
When Bit11=1, double press the button of the car call to cancel the registration. (Same function with P11-57 Bit2)				
P12-09	Elevator function selection 1	Bit12 (Wrong call cancellation)	Bit12=0	-
When Bit12=1, double press the button of the call to cancel the registration.				

8.7 Overload/Full-load

8.7.1 Related parameters

Overload:

Command board buzzer alarm;

The elevator keeps the door open, and the door close button is disabled;

The system displays "Overload" in the car, and the hall call board displays "Full-load".

Full-load:

The system registers and responds to car calls;

The system registers hall calls, but not respond;

The hall call board displays "Full-load";

Load cell installation mode

Parameter	Name	Range	Default	Unit
P10-00	Load cell input selection	0: Invalid 1: CTB digital input 2: CTB analog input 3: MCB analog input 4: MCB digital input	1	-

8.7.2 Machine room overload

Parameter	Name	Range	Default	Unit
P06-31	MCB X31 function	Overload	114	-

Parameter	Name	Range	Default	Unit
	selection			

Plugin port	Indicator	Port mark	Port function
BI0	X31	X31	Machine room overload (NC)
		24+	
		0V	

8.7.3 Car overload/full-load

Parameter	Name	Range	Default	Unit
P07-21	CTB X21 function selection	Overload	108	-
P07-22	CTBX22 function selection	Full-load	009	-

Plugin port	Indicator	Port mark	Port function
CZK (Digital overload/full-load)	-	24+	24 V DC
	-	0 V	0 V (24 V DC)
	-	24+	24 V DC (COM)
	X21	MOL	Overload signal (NC)
	-	24+	24 V DC (COM)
	X22	MFL	Full-load signal (NO)

8.8 Anti-nuisance

8.8.1 Function description

The system automatically compare the number of car passengers with the number of calls. If the calls' number exceeds the passengers' number, a nuisance state will thus be detected, and the system automatically cancel all car calls. Passengers need to register their calls again correctly.

There are three methods for the judgement:

(1) Load cell judgement: In the analog load cell mode, if the car load is lower than 20% of the rated load, yet the number of car calls exceeds 3, the system will determine a nuisance state;

(2) Light curtain judgement: If there have been no change in the light curtain signal for three consecutive times of normal running, the system will determine a nuisance state;

(3) Light-load judgement: In the digital load cell mode, if the car is running with light load (a light-load switch is required), yet the number of car calls exceeds 3, the system will determine a nuisance state.

8.8.2 Related parameters

Parameter	Name	Range	Default	Unit
P10-05	Anti-nuisance function selection	0: Disabled 1: Load cell judgement 2: Light curtain judgement 3: Light-load judgement	0	-

8.9 VIP service

8.9.1 Function description

This function enables direct ride for the VIP users to their destination floors.

In the VIP service mode:

(1) The elevator responds to car calls only; all hall calls will be rejected and canceled;

(2) The elevator does not close the door automatically; it is required to press and hold the close button manually to close the door;

(3) When the door is closing, if the close button is released, the elevator will automatically re-open the door.

8.9.2 Related parameters

Parameter	Name	Range	Default	Unit
P11-12	VIP floor	0 to P11-06	0	-
P12-09	Elevator function selection 1	Bit9 (VIP service)	Bit9=0	

Parameter	Name	Range	Default	Unit
Bit9=0: Disabled. Bit9=1: Enabled.				
P11-55	VIP function selection	Bit0 (VIP call activated (VIP floor))	Bit0=0	
Bit0=0: Disabled. Bit0=1: Enabled. When the VIP floor (P11-12) call signal is valid, the system activates VIP service.				
P11-55	VIP function selection	Bit1 (VIP call activated (terminal activation))	Bit1=0	
Bit1=0: Disabled. Bit1=1: Enabled. When the HOP input port function is set to 4 (P09-00/01=4 VIP signal), the system will activate the VIP service if the signal is valid. In the above mode, if the VIP input signal is valid, the elevator will directly run to the VIP floor, automatically open the door, and wait for calls.				

8.10 Security floor service

Parameter	Name	Range	Default	Unit
P11-14	Security floor	0 to P11-06	0	-
Security floor service activation method: Set the HOP input port function to 5 (security signal); when the signal is valid, the system enters the security mode. When P12-09 Bit5=1, night security-floor service will be enabled. After the entry into the security mode, the elevator will stop automatically at the security floor each time it passes this floor, and open and close the door before continuing to the destination floor.				
P12-09	Elevator function selection 1	Bit5 (night security-floor service)	Bit5=0	
Bit5=0: Disabled. Bit5=1: Enabled. The system enters and stays in the security mode during 22: 00 and 6: 00 the next day. Each time the elevator passes the security floor, the car will automatically stop, open and close the door once, and continues running to the destination floor.				

8.11 Collective selective control mode

Parameter	Name	Range	Default	Unit
P11-23	Collective selective control mode	0 to 2	0	-
When the value is set to 0, the system adopts full collective selective mode, and responds to both up and down calls; When the value is set to 1, the system adopts down collective selective mode, and responds to down calls only, with up calls not responded; When the value is set to 2, the system adopts up collective selective mode, and respond to up calls only, with down calls not responded.				

8.12 Peak service in down collective selective mode

Parameter	Name	Range	Default	Unit
P11-24	Start time of down collective selective 1	00.00 to 23.59	00.00	HH.MM
P11-25	End time of down collective selective 1	00.00 to 23.59	00.00	HH.MM
P11-26	Start time of down collective selective 2	00.00 to 23.59	00.00	HH.MM
P11-27	End time of down collective selective 2	00.00 to 23.59	00.00	HH.MM
During the above two time periods, the elevator works in down collective selective mode, i.e., it responds to the down calls only. Activation method: set P12-09 Bit 6=1.				
P12-09	Elevator function selection 1	Bit6 (peak service in down collective selective mode)	Bit6=0	
Bit6=0: Disabled. Bit6=1: Enabled. The elevator works in down collective selective mode, i.e., it responds to the down calls only.				

8.13 Time-based and floor-based service

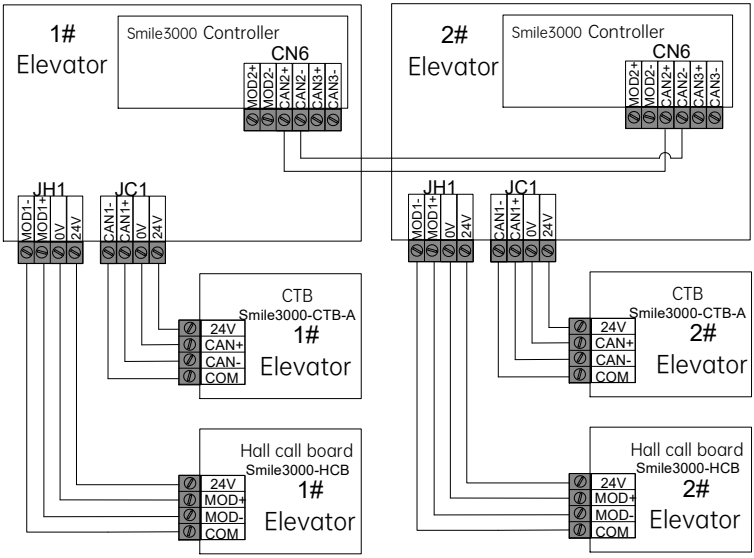
Parameter	Name	Range	Default	Unit
P11-28	Time-based service 1 start	00.00 to 23.59	00.00	HH.MM
P11-29	Time-based service 1 finish	00.00 to 23.59	00.00	HH.MM
During the designated period, the system responds to calls of the service floors set by P11-30/31/32 only. Time-based service activation method: set P12-09 Bit 8=1.				
P11-30	Time-based service 1 service floor 1 (1st to 16th floor)	0 to 65535	65535	-
P11-31	Time-based service 1 service floor 2 (17th to 32nd floor)	0 to 65535	65535	-
P11-32	Time-based service 1 service floor 3 (33th to 48th floor)	0 to 65535	65535	-
Set the corresponding bit to 0: The system does not respond to the car calls and hall calls of the corresponding floor; Set the corresponding bit to 1: The system responds to the car calls and hall calls of the corresponding floor.				
P11-33	Time-based service 2 start	00.00 to 23.59	00.00	HH.MM
P11-34	Time-based service 2 finish	00.00 to 23.59	00.00	HH.MM
During the designated period, the system responds to calls of the service floors set by P11-35/36/37 only. Time-based service activation method: set P12-09 Bit 8=1.				
P11-35	Time-based service 2 service floor 1 (1st to 16th floor)	0 to 65535	65535	-

Parameter	Name	Range	Default	Unit
P11-36	Time-based service 2 service floor 2 (17th to 32nd floor)	0 to 65535	65535	-
P11-37	Time-based service 2 service floor 3 (33th to 48th floor)	0 to 65535	65535	-
Set the corresponding bit to 0: The system does not respond to the car calls and hall calls of the corresponding floor; Set the corresponding bit to 1: The system responds to the car calls and hall calls of the corresponding floor.				
P12-09	Elevator function selection 1	Bit8 (time-based service selection)	Bit8=0	
Bit8=0: Disabled. Bit8=1: Enabled. During the period of time-based service, the system responds to calls of the set time-based service floors only.				

8.14 Parallel control

8.14.1 Installation

For parallel control of two elevators, please connect via the MCB CAN2 communication port as shown in the figure below.



8.14.2 Related parameters

Parameter	Name	Range	Default	Unit
A01-03	Top floor of elevator	A01-04 to A01-48	9	-
A01-04	Bottom floor of elevator	1 to A01-03	1	-
The above two parameters set the top and the bottom floor of the elevator service, and the value shall be determined based on the number of leveling plates actually installed.				
P11-18	Number of elevators in group control	1 to 8	1	-
This parameter sets the number of elevators allowed in parallel/group control.				
P11-19	Elevator serial number	1 to 8	1	-
This parameter determines the serial number of the elevator in the parallel/group control.				
P11-20	Floor offset in parallel control	0 to 48	0	-
This parameter caters to the situation where the bottom floors of the two elevators in the same parallel control system are not consistent. Set the parameter to 0 if the corresponding elevator bottom floor is lower than the other; set the				

Parameter	Name	Range	Default	Unit
parameter to the offset value of the two bottom floors if the corresponding elevator bottom floor is higher than the other.				
P11-21	Program selection	Bit3 (CAN2 parallel/group control)	Bit3=0	-
When Bit3=1, the system uses MCB CAN2 port for parallel connection.				
P11-51	Program control selection 3	Bit11 (independent switch (in parallel control))	Bit11=0	-
When Bit11=0, independent switch is enabled, and the system exits from parallel connection and activates VIP service; When Bit11=1, independent switch is enabled, and the system exits from parallel connection and enters normal state.				

8.14.3 Operation instructions of parallel control

(1) If the bottom floor of one elevator is consistent with that of the other elevator, their P11-20 (floor offset in parallel control) values shall both be set to 0;

(2) Set the bottom floor and the top floor of each elevator based on their physical floor structure;

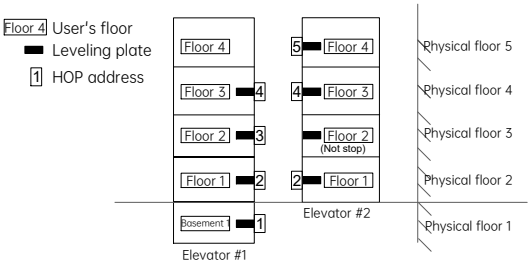
(3) Leveling plates shall be applied at each physical floor where both elevators pass. Even if one of the two elevators does not stop at one of the floors, it is still required to install leveling plates for this elevator at this floor, although this elevator can disable the service of this floor through user's setting;

(4) Set the HOP addresses based on the physical floors of the elevator; it is allowed that different elevators have different physical floor structures.

Example of parallel control:

Elevator #1 has one basement floor and four floors above ground, but offers service to the basement floor, and floor 1, 2, and 3 above ground;

Elevator #2 has four floors above ground (no basement), but offers service to floor 1, 3, and 4.



		Elevator #1		Elevator #2	
Number of elevator in group control (P11-08)		2		2	
Elevator number (P11-09)		1 (main elevator)		2 (auxiliary floor)	
User's floor	Physical floor	HOP address	HOP display	HOP address	HOP display
B1	1	1	P21-01=1101	1	P21-01=1901
1	2	2	P21-02=1901	No call (leveling plate required)	No call
2	3	3	P21-03=1902	3	P21-03=1903
3	4	4	P21-04=1903	4	P21-04=1904
4	5	No call	No call		
Top floor (P11-06)		4		4	
Bottom floor (P11-07)		1		1	
Floor offset in parallel control		0		1	

8.15 Peak service in parallel/group control

Parameter	Name	Range	Default	Unit
P11-38	Parallel/group control peak service 1 start	00.00 to 23.59	00.00	HH.MM
P11-39	Parallel/group control peak service 1 finish	00.00 to 23.59	00.00	HH.MM
P11-40	Peak service 1 floor	P11-07 to P11-06	1	-
P11-41	Parallel/group control peak service 2 start	00.00 to 23.59	00.00	HH.MM
P11-42	Parallel/group control peak service 2 finish	00.00 to 23.59	00.00	HH.MM
P11-43	Peak service 2 floor	P11-07 to P11-06	1	-
Within the period of peak service, once the number of car calls registered at peak service floor exceeds 3, the system enters peak service and all the car calls registered at this floor shall be valid. The				

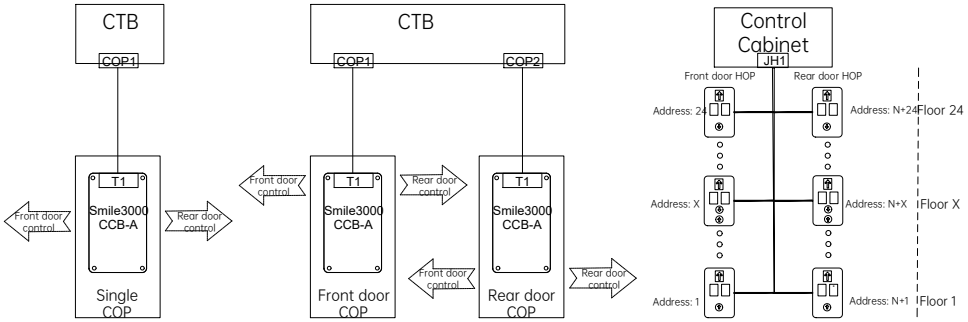
Parameter	Name	Range	Default	Unit
elevator returns to this floor during idle time. Activation method of peak service in parallel/group service: set P12-09 Bit 7=1.				
P12-09	Elevator function selection 1	Bit7 (peak service in parallel/group control)	Bit7=0	
Bit7=0: Disabled. Bit7=1: Enabled. Within the period of peak service, once the number of car calls registered at peak service floor exceeds 3, the system enters peak service and all the car calls registered at this floor shall be valid. The elevator returns to this floor during idle time.				

8.16 Double-sided (through-type) elevator service

Four control modes are available as described below.

Mode		Description
Mode 1	Simultaneous control of front and rear doors	HOP controls the front and the rear doors simultaneously; COP controls the front and the rear doors simultaneously.
Mode 2	Isolated HOP Integrated COP	The front HOP controls the front door, and the rear HOP controls the rear door; COP controls the front and the rear doors simultaneously.
Mode 3	Isolated HOP Manual operation of COP	The front HOP controls the front door, and the rear HOP controls the rear door; The front/rear door open is selected by the corresponding button/switch on COP; Selection method: Front/Rear.
Mode 4	Isolated HOP Isolated COP	The front HOP controls the front door, and the rear HOP controls the rear door; The front COP controls the front door, and the rear COP controls the rear door;

8.16.1 Installation method



The function configuration of COP setting switch S1 is described in the table below.

DIP switch S1-1	DIP switch S1-2	COP selection
OFF	OFF	Front door COP
OFF	ON	Rear door COP

8.16.2 Related parameters

COP type	Single/Double COP	Single/Double COP	Single COP	Double COP
Control mode	Simultaneous control of front and rear doors	Isolated HOP; Integrated COP	Isolated HOP; Manual operation of COP	Isolated HOP; Isolated COP
Number of door operators	A01-14/P08-00=2	A01-14/P08-00=2	A01-14/P08-00=2	A01-14/P08-00=2
Double-sided elevator function	A01-21/P08-20=0	A01-21/P08-20=1	A01-21/P08-20=2	A01-21/P08-20=3
Address offset of rear door HOP	The setting of P09-04=N (default value is 50) serves to set the start address of rear door HOP for double-sided elevators; Rear door HOP address = Front door HOP address of the same floor + Setting value of P09-04; **Note:** Make sure that the front door HOP addresses do not overlap the rear door HOP addresses.			

Front/Rear door mode selection	——	——	P11-49 Bit4=1 Only one door is controlled.	——
Front/Rear door selection button JP19	——	——	Set P07-50=54; Disable P11-49 Bit2	——
Front/Rear door selection switch JP23 (X8)	——	——	Set P07-48=8; Disable P11-49 Bit15=1	——

8.17 Door open/close control and time

Parameter	Name	Range	Default	Unit
P08-07	Door open protection time	5 to 99	10	-
When the system sends a door open command and receives no door open limit signal after a time span defined by P08-07, it reports fault E48 and continues operation. The fault will be automatically removed if a door close command is received.				
P08-08	Door close protection time	5 to 99	15	s
When the system sends a door close command and receives no door close limit signal or door lock engagement signal after a time span defined by P08-08, it re-performs door open and close. When the number of door open/close times reaches the value of P08-09, the system will keep the door open, report a fault E49, and disable operation.				
P08-09	Door open/close times	0 to 20	0	-
When this parameter is set to 0, the corresponding function is disabled. This parameter refers to the maximum number of repeated door open/close times when a door open/close abnormality occurs.				
P08-11	Door open holding time for hall calls	1 to 1000	5	s
P08-11 sets the door open holding time for hall calls (door open upon car arrival via hall calls registered at other floors, or door open via hall calls registered at this floor). The door will close immediately upon a door close command.				

Parameter	Name	Range	Default	Unit
P08-12	Door open holding time for car calls	1 to 1000	3	s
P08-12 sets the door open holding time for car calls (door open upon car arrival via car calls registered at other floors, or door open via car calls registered at this floor). The door will close immediately upon a door close command.				
P08-13	Door open holding time at main floor	1 to 1000	10	s
P08-13 sets the door open holding time when the car arrives at the main parking floor. The door will close immediately upon a door close command.				
P08-14	Duration of door open holding time delay	10 to 1000	30	s
P08-14 sets the extended door open holding time after the door open delay button is triggered. The door will close immediately upon a door close command.				
P08-15	Special door open holding time	10 to 1000	30	s
P08-15 sets the door open holding time for calls from disability COP and disability HOP.				
P08-17	Forced door close time	5 to 180	120	s
When P12-10 Bit7=1, the forced door close function is enabled. In automatic running mode, if the door does not close after the time span defined by P08-17, the system will output a forced door close signal. Under this condition, the light curtain signal is invalid, and the buzzer outputs alarm.				
P11-51	Program control selection 3	Bit3 (Door close output during running)	Bit3=1	-
When Bit3=1, the system continuously outputs door close signals during running.				
P14-00	Program control selection	Bit9 (no door open/close limit)	Bit9=0	-
When Bit9=1, there is no need to install door open/close limit switches. The system automatically handles door open/close signals in the following method: Door open limit is valid 3 seconds after a door open signal is output; Door close limit is valid 3 seconds after a door close signal is output.				

8.18 Accessibility function

8.18.1 Function description

This function is realized via the dedicated disability COP and disability HOP, and mainly includes the followings:

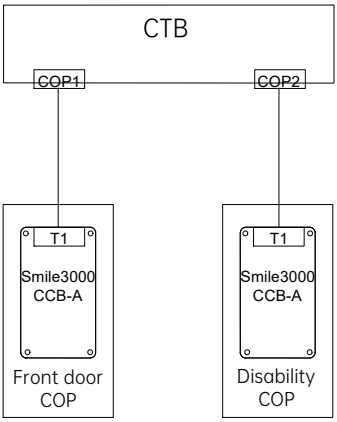
(1) When there is a floor call registered through the disability COP, the door open holding time upon car arrival will be extended;

(2) When there is a door open command registered through the disability COP, the door open holding time will be extended;

(3) When there is a command registered through the disability HOP, the door open holding time upon car arrival will be extended;

(4) When there is a hall call registered through the disability HOP of this floor, the door open holding time will be extended.

8.18.2 Installation method



The function configuration of COP setting switch S1 is described in the table below.

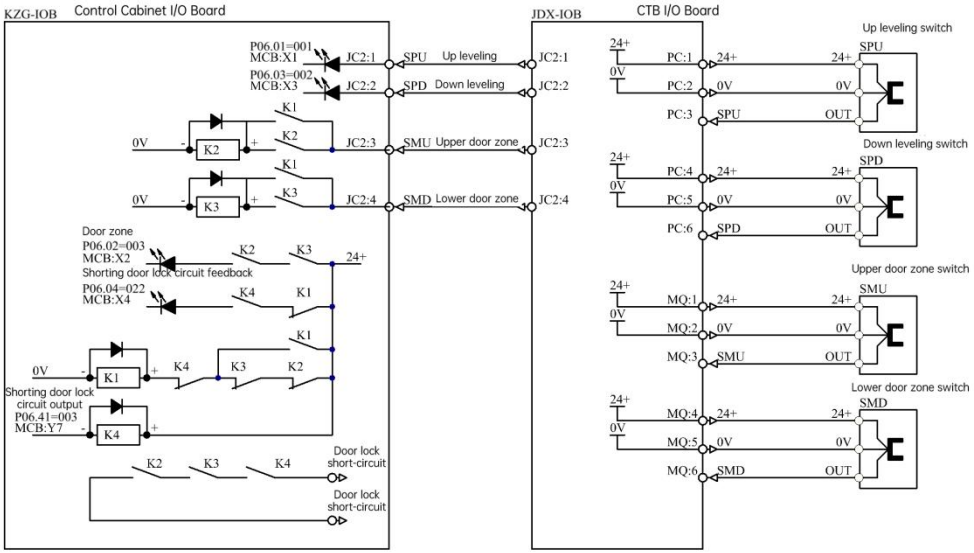
DIP switch S1-1	DIP switch S1-2	COP selection
OFF	OFF	Front door COP
ON	ON	Rear door COP

8.18.3 Related parameters

Parameter	Name	Range	Default	Unit
P11-49	Program control selection 1	Bit0 (disability function)	Bit0=0	-
When Bit0=1, the disability function is enabled.				
P08-15	Special door open holding time	10 to 1000	30	s
P08-15 sets the door open holding time for calls from disability COP and disability HOP.				

8.19 Advance door open

8.19.1 Advance door open control diagram

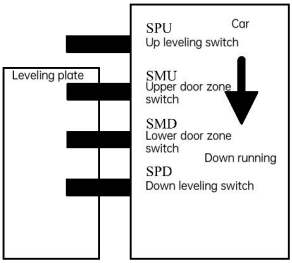


8.19.2 Advance door open control parameters

Parameter	Name	Default	Definition	Description
P06-04	X4 function selection	022	Shorting door lock	

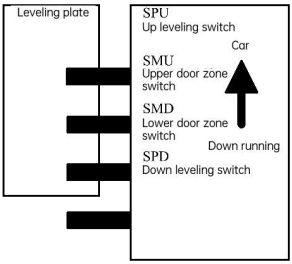
Parameter	Name	Default	Definition	Description
			circuit output feedback	
P06-41	Y7 function selection	003	Shorting door lock circuit contactor	
P12-09	Function selection 1	Bit3=0	Advance door open function	When Bit3=1, advance door open function is enabled.

8.19.3 Advance door open control description



Elevator down running

1. When approaching the destination floor with the speed decelerating during down running, if the elevator reaches the position as shown in the left figure, the MCB down leveling indicator (X3) and door zone indicator (X2) will be on;
2. After the elevator decelerates to the value of "advance door open permissible speed", the MCB outputs a "shorting door lock circuit control" signal (indicator Y7 will be on); KZG-CJB outputs a "door lock short-circuit" signal to short the door lock switch, and, at the same time, outputs a "shorting door lock circuit feedback" signal to the MCB;
3. After receiving the "shorting door lock circuit feedback" signal (indicator X4 will be on), the MCB outputs a door open signal, and the door operator opens the door.



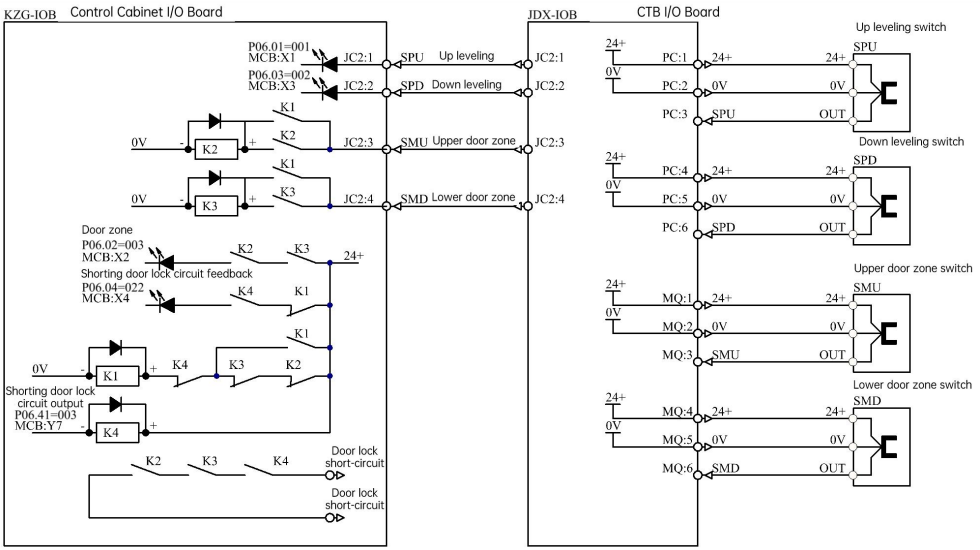
Elevator up running

1. When approaching the destination floor with the speed decelerating during up running, if the elevator reaches the position as shown in the left figure, the MCB up leveling indicator (X1) and door zone indicator (X2) will be on;
2. After the elevator decelerates to the value of "advance door open permissible speed", the MCB outputs a "shorting door lock circuit control" signal (indicator Y7 will be on); KZG-CJB outputs a "door lock short-circuit" signal to short the door lock switch, and, at the same time, outputs a "shorting door lock circuit feedback" signal to the MCB;
3. After receiving the "shorting door lock circuit feedback"

	signal (indicator X4 will be on), the MCB outputs a door open signal, and the door operator opens the door.

8.20 Re-leveling at door open

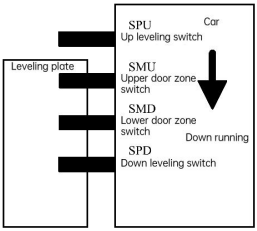
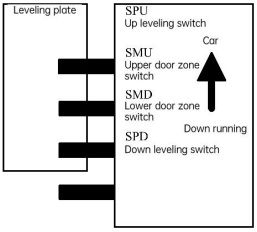
8.20.1 Control diagram of re-leveling at door open



8.20.2 Related parameters of re-leveling at door open

Parameter	Name	Default	Definition	Description
P06-04	X4 function selection	022	Shorting door lock circuit output feedback	
P06-41	Y7 function selection	003	Shorting door lock circuit contactor	
P12-09	Function selection 1	Bit2=0	Re-leveling function	When Bit2=1, re-leveling function is enabled.

8.20.3 Re-leveling at door open control description

	1. Car load may change after leveling, causing minor rise of the car position. When the car rises to the position indicated in the left figure, the MCB will output a "shorting door lock circuit control" signal (indicator Y7 will be on); KZG-CJB outputs "door lock short-circuit" signal to short the door lock switch, and, at the same time, outputs a "shorting door lock circuit feedback" signal to the MCB; 2. Upon receiving the "shorting door lock circuit feedback" signal (indicator X4 will be on) and the "integrated door lock detection" signal (indicator X28 will be on), the MCB will output a RUN signal, and the elevator will then run downwards at re-leveling speed till it reaches the leveling state again; 3. After re-leveling, the elevator will stop outputting "shorting door lock circuit control" signal.
	1. Car load may change after leveling, causing minor rise of the car position. When the car rises to the position indicated in the left figure, the MCB will output a "shorting door lock circuit control" signal (indicator Y7 will be on); KZG-CJB outputs "door lock short-circuit" signal to short the door lock switch, and, at the same time, outputs a "shorting door lock circuit feedback" signal to the MCB; 2. Upon receiving the "shorting door lock circuit feedback" signal (indicator X4 will be on) and the "integrated door lock detection" signal (indicator X28 will be on), the MCB will output a RUN signal, and the elevator will then run upwards at re-leveling speed till it reaches the leveling state again; 3. After re-leveling, the elevator will stop outputting "shorting door lock circuit control" signal.

8.21 Leveling adjustment

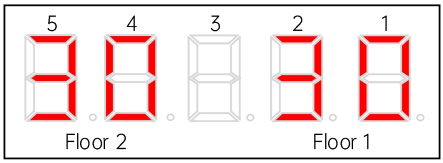
8.21.1 Unified adjustment

Modification of this parameter affects all service floors.

Parameter	Name	Range	Default	Unit
P11-22	Leveling sensor delay	10 to 50	14	ms
This parameter sets the delay between the leveling sensor action and the leveling signal validation. No need for modification by user.				
A03-04 P11-00	Leveling adjustment	0 to 60	30	mm
Properly decrease the value if over-leveling exists at all service floors; Properly increase the value if under-leveling exists at all service floors; The parameter takes effect in leveling at all service floors. Thus, it is not recommended to use this parameter if only a small part of service floors exhibit inaccurate leveling. In the circumstances, please adjust the position of the leveling plates or modify the parameters in Group P20.				

8.21.2 Single floor adjustment

Parameter	Name	Range	Default	Unit
P20-00	Leveling adjustment mode	0: Disabled 1: Leveling adjustment in the car	0	
P20-01	Leveling adjustment 1 (floor 2—1)	00000 to 60060	30030	mm
P20-02	Leveling adjustment 2 (floor 4—3)	00000 to 60060	30030	mm
P20-03	Leveling adjustment 3 (floor 6—5)	00000 to 60060	30030	mm
P20-04	Leveling adjustment 4 (floor 8—7)	00000 to 60060	30030	mm
P20-05	Leveling adjustment 5 (floor 10—9)	00000 to 60060	30030	mm
...	...	00000 to 60060	30030	mm
P20-24	Leveling adjustment 24 (floor 48—47)	00000 to 60060	30030	mm

Parameter	Name	Range	Default	Unit
		Each of the parameters retains the adjustment information of two floor, as indicated by the left figure. The default value is 30 mm. **Adjustment method** 1. Reduce the value if the car leveling is higher than the sill; 2. Increase the value if the car leveling is lower than the sill; 3. The adjustment range is ±30 mm.		

Activation method for in-car leveling adjustment: set P20-00=1.

When activated, the elevator will reject registration of all calls, transport the car to the top floor, and keep the door open; if the car is already at the top floor, the elevator won't transport the car, but will directly hold the door open.

Enter the car, press the door open button, and hold the button for 3 seconds to initiate the leveling adjustment of this floor. It will display 00 in the car if no adjustment has been conducted previously. If conducted, it will display the current adjusted value (Positive: up arrow + value. Negative: down arrow + value).

Press the top floor car call button, and the leveling will be adjusted upwards for 1 mm. Press the bottom floor car call button, and the leveling will be adjusted downwards for 1 mm. The car will display the adjusted value (Positive: up arrow + value. Negative: down arrow + value). The adjustment range is ±30 mm.

When finished, press the door close button to save the adjustment of this floor, The car display will turn to the normal state, and the elevator will close the door simultaneously. Register a call to the next floor for adjustment, and the elevator will hold the door open upon arrival.

When adjustment is all completed, set P20-00 to 0 to disable the leveling adjustment function. Otherwise, the elevator will not be available for normal use.

8.22 UCMP test

When the elevator conducts a normal stop at a floor, unintended car movement may result from failure of any single component in the drive motor or drive control system while the car/landing door remains open, causing the car to move away from the leveling position. To prevent such movement or bring it to an immediate halt, a safety mechanism is equipped to the elevator.

This section explains the function which checks whether the UCMP mechanism meets the requirements.

Caution

- ✧ Ensure that the elevator is completely unoccupied by any personnel to safeguard operational safety;
- ✧ The elevator has successfully concluded the inspection-speed commissioning and is now capable of performing EEO up and down running;
- ✧ The UCMP board has been correctly integrated into the system and is functioning properly;
- ✧ The elevator is parked at the leveling position (both the two leveling signals and the two door zone signals are valid);
- ✧ Both the car door and the landing door are closed, and the door lock circuits are conducting;
- ✧ EEO switch is set to the EEO state;
- ✧ The above-mentioned requirements must be met; otherwise, the UCMP test cannot be carried out.

8.22.1 Related parameters

Parameter	Name	默认值	定义	说明
P-8	Test function (keypad parameter)	0	7: UCMP test	

8.22.2 Testing method

(1) Set the elevator to the EEO state; make sure both the car door and the landing door are closed, and ensure the door lock circuits are conducting;

(2) Make sure the car is positioned in the door zone, and both the two leveling signals and the two door zone signals are valid;

(3) Set P-8=7 to enable UCMP test, and the keypad will then display E88; if E88 is not displayed, it indicates that the testing requirements have not been fully met, and a thorough check is required. P-8 will be automatically reset to 0 if the testing requirements are not met or after 30 seconds of no action;

(4) Pull the UCMP testing plug out of the control cabinet plugin board to manually disconnect the door lock circuit;

(5) Press the inspection up/down button and the common button manually; the shorting door lock circuit relay will then output first to short the door lock; the elevator will then perform EEO running; the EEO running can not be stopped during the process; otherwise, P-8 will be automatically reset, and it is

required to manually set P-8=7 to continue the process;

(6) During testing, the keypad will be displaying E88 in a flashing manner;

(7) Keep the elevator in EEO running state; once the car fully exits the door zone, UCMP will be automatically triggered to let the braking system stop the car; the system reports a fault E65, and the elevator running will be disabled;

(8) Reset;

① The fault E65 rejects automatic reset and power-off reset;

② When there is no additional braking device, follow the steps to reset: re-connect the UCMP plugin with the control cabinet plugin board; set P-2 to 1 on keypad; press the SET button to remove the system faults; set the control cabinet EEO switch to the normal state; the elevator will land at the nearest floor and open the door after leveling; then, the elevator returns to the normal running state;

③ When there are additional braking devices, follow the steps to reset: reset the additional brakes; re-connect the UCMP plugin with the control cabinet plugin board; set P-2 to 1 on keypad; press the SET button to remove the system faults; set the control cabinet EEO switch to the normal state; the elevator will land at the nearest floor and open the door after leveling; then, the elevator returns to the normal running state;

8.23 Static test of braking force

The control system performs regular tests of braking force to prevent failures of the motor brakes.

During the test, the system sends a command to make the motor output torque of a certain amount, and then checks the feedback from the encoder to determine whether the braking force meets the requirement. The system also automatically determines whether to perform a single-arm test or a dual-arm test.

Caution

- ✧ The system performs a dual-arm test when the MCB output port function is set to "Brake contactor 1 output" only;
- ✧ The system performs a single-arm test when the MCB output port functions are set to both "Brake contactor 1 output" "Brake contactor 2 output".
- ✧ When using the two brake contactors to control the brakes on both sides respectively, the feedback wiring sequence of the two brake contactors, the feedback wiring sequence of the brake switches, and the input port function settings shall correspond to the outputs respectively; otherwise, a fault will be triggered during the test;
- ✧ The elevator has completed the normal-speed commissioning and is ready for normal use;
- ✧ Make sure the car is not occupied by any personnel, and that the door is fully closed.

8.23.1 Related parameters

Parameter	Name	Range	Default	Unit
P12-24	Test cycle of braking force	0 to 1440	1440	min
When this parameter is set to 0, the system disables both the automatic braking force test and the automatic rollback test with motor stator shorted.				
P12-25	Duration of braking force test	0 to 10	5	s
This parameter defines the duration of torque output during braking force test. When set to 0, the system will automatically process it according to the default value of 5 seconds.				
P12-26	Torque of braking force test	1 to 150%	110	%
This parameter defines the torque value for the braking force test (indicated as a percentage of the rated torque). When set to 0, the system will automatically output a torque at a default value of 80% of the rated torque. When conducting a single-arm test, the default value is 50% of the P12-26 setting value.				
P12-27	Pulses for braking force test	0 to 100	30	-
This parameter defines the encoder feedback pulses for the braking force test. When set to 0, the system will automatically process it according to the default value of 30 pulses.				
P12-28	Detection value of rollback distance	0 to 20	0	°
This parameter defines the mechanical angle of motor rotation. When set to 0, the system will automatically process it according to the default value of 5 degrees for synchronous motors or 10 degrees for asynchronous motors.				
P12-29	Braking force test result	0: Not recommended for reference 1: Braking force meets the requirement 2: Braking force does not meet the requirement 3: Braking force of brake 1	0	-

Parameter	Name	Range	Default	Unit
		does not meet the requirement 4: Braking force of brake 2 does not meet the requirement		
P-8	Test function (keypad parameter)	8: Manual static test of braking force		

8.23.2 Braking force static test instructions

Manual static test of braking force

(1) The elevator has completed the normal-speed commissioning and is ready for normal use;

(2) Make sure the car is not occupied by any personnel, and that the door is fully closed;

(3) Set the EEO switch to the EEO state;

(4) Set P-8=8 on keypad and press the SET button to confirm the setting; the system will then enter the "Manual static test of braking force" mode, and the keypad will display E88; if E88 is not displayed, it indicates that the related testing requirements have not been met; the system will reset P-8 to 0 if such requirements are not met or after 30 seconds of no action.

(5) Set the EEO switch to the normal state; the system will then start the automatic test; the keypad will display "E88" in a flashing manner;

(6) Both the shorting motor stator contactor and the RUN contactor are engaged;

(7) Single-arm test: (P12-30 Bit1=0 as default setting)

① Close KAJ and engage the brake contactor 2; the system outputs up running torque to test brake 1; the LED displays "b01" in a flashing manner;

② Disconnect the brake contactor 2, and wait for 2 seconds;

③ Close KAJ and engage the brake contactor 2; the system outputs down running torque to test brake 1; the LED displays "b01" in a flashing manner;

④ Disconnect the brake contactor 2; the test of brake 1 is finished;

⑤ Wait for 2 seconds;

⑥ Close KAJ and engage the brake contactor 1; the system outputs up running torque to test brake 2; the LED displays "b02" in a flashing manner;

⑦ Disconnect the brake contactor 1, and wait for 2 seconds;

⑧ Close KAJ and engage the brake contactor 1; the system outputs down running torque to test brake 2; the LED displays "b02" in a flashing manner;

⑨ Disconnect the brake contactor 1; the test of brake 2 is finished;

(8) Dual-arm test; (P12-30 Bit1=1)

① Engage the brake contactor; the system outputs up running torque to test the brake; the LED displays "b03" in a flashing manner;

② Disconnect the brake contactor; the up running test is finished;

③ Wait for 2 seconds;

④ Engage the brake contactor; the system outputs down running torque to test the brake; the LED displays "b03" in a flashing manner;

⑤ Disconnect the brake contactor; the down running test is finished;

(9) If the detected amount of motor rotation exceeds the setting value, it indicates that the braking force does not meet the requirement. The test shall be stopped immediately, and the test result will be displayed by P12-29.

Automatic static test of braking force

(1) When P12-24 is set to 0, the automatic test function is disabled (the system defaults to single brake test);

(2) After 12 hours, the system will determine whether Condition 1 is met; if met, the system will activate the test automatically, and the testing procedures are the same with the manual test step 6 to step 9; if not met, the system will enforce mandatory test as indicated by Condition 2;

(3) Condition 1: normal test of braking force; normal test will be performed when:

① The elevator is in the automatic running state;

② There are no car/hall calls;

③ The energy-saving time is finished (if the energy-saving time is set to 0, the system will default to 3 minutes);

(4) Condition2: mandatory test of braking force; the system initiates the Condition 2 verification 10 minutes in advance (the buzzer will output alarm for 30 seconds if P12-24 is set to 10 minutes or less); if verified, the elevator will register hall calls if any but not respond, and it will not register any car calls ; when the elevator completes the existing car calls, it will close the door automatically and start testing;

(5) During automatic testing, the HOP does not display faults, but the keypad displays the E88 testing state; the elevator will register hall calls if any but not respond; the elevator cancels all car calls, and will not register any car calls; door open/close function is disabled;

(6) When the automatic test is concluded, the system returns to the normal state and starts to execute the registered hall calls;

When the test is concluded, the result will be displayed by P12-29;

When P12-29=1, it indicates that the result meets the requirement, and the timing function will be restored to 24 hours;

When P12-29=2, it indicates that the result does not meet the requirement, and the system will report E66 (the braking force is not qualified; subcode: 01—03); the elevator stops operation;

A E66 fault will be reported if the braking force test result is not qualified; the elevator will then stop operation; this fault can not be reset (including power-off reset);

If the test result is not qualified, it is required to conduct manual tests. The fault can be reset only after the result is qualified.

8.24 Dynamic test of braking force

This function serves to detect whether the braking force meets the requirements when brakes are used during rated-speed running. Both single-arm test and dual-arm test are provided.

Caution

- ✧ The system performs a dual-arm test when the MCB output port function is set to "Brake contactor 1 output" only;
- ✧ The system performs a single-arm test when the MCB output port functions are set to both "Brake contactor 1 output" "Brake contactor 2 output".
- ✧ When using the two brake contactors to control the brakes on both sides respectively, the feedback wiring sequence of the two brake contactors, the feedback wiring sequence of the brake switches, and the input port function settings shall correspond to the outputs respectively; otherwise, a fault will be triggered during the test;
- ✧ The elevator has completed the normal-speed commissioning and is ready for normal use;
- ✧ Make sure the car is not occupied by any personnel, and that the door is fully closed.

8.24.1 Related parameters

Parameter	Name	Range	Default	Unit
P-8	Keypad parameter	20-23: Single-arm braking force dynamic test 30-31: Dual-arm braking force dynamic test	0	-

8.24.2 Dynamic test instructions

(1) The elevator has completed the normal-speed commissioning and is ready for normal use;

(2) Make sure the car is not occupied by any personnel, and that the door is fully closed;

(3) Set the EEO switch to the EEO state;

(4) When setting P-8 to the following values, the corresponding test mode will be activated:

20: Braking force dynamic test of up running brake 1;

21: Braking force dynamic test of up running brake 2;

22: Braking force dynamic test of down running brake 1;

23: Braking force dynamic test of down running brake 2;

30: Braking force dynamic test of up running brakes (dual brakes);

31: Braking force dynamic test of down running brakes (dual brakes);

Please select a proper mode, and press the SET button to confirm and to enter the corresponding test mode; at the time, the keypad will display "TST"; if not displayed, it indicates that the corresponding requirements are not met, and a check is required; the system will automatically reset P-8 to 0 if the requirements are not met or after 30 seconds of no action;

(5) Set the EEO switch to the normal state; the system will then start the automatic test (the system rejects registration of all car/hall calls); the keypad will display "TST" in a flashing manner;

(6) Before up running inspection, the elevator automatically transports the car to the lower terminal floor, and the keypad displays "TST" in a flashing manner; after leveling at the lower terminal floor, the car will wait for 5 seconds before automatically running upwards for inspection;

Before down running inspection, the elevator automatically transports the car to the upper terminal floor, and the keypad displays "TST" in a flashing manner; after leveling at the upper terminal floor, the car will wait for 5 seconds before automatically running downwards for inspection;

(7) **Brake 1 test:**

① The car reaches a normal-running speed;

② Close KAJ;

③ LED displays "b01" in a flashing manner during running;

④ An emergency car stop is triggered;

⑤ The RUN contactor, the shorting motor stator contactor, and the brake 1 contactor are disconnected;

⑥ Brake contactor 2 is engaged;

Brake 2 test:

① The car reaches a normal-running speed;

② Close KAJ;

③ LED displays "b02" in a flashing manner during running;

④ An emergency car stop is triggered;

⑤ The RUN contactor, the shorting motor stator contactor, and the brake 2 contactor are disconnected;

⑥ Brake contactor 1 is engaged;

Dual brake test:

① The car reaches a normal-running speed;

② LED displays "b03" in a flashing manner;

③ An emergency car stop is triggered;

④ The RUN contactor, the shorting motor stator contactor, and the brake contactors are disconnected;

If the elevator stops within 4 seconds (speed feedback is less than 0.02 m/s), it indicates a success of test; otherwise, it indicates a failure;

If the brake system is qualified through the test, the LED will display "SUC" in a flashing manner; if not qualified, it will display "Err";

Normal running will remain disabled after each time of test completion, and will be enabled only after the EEO switch is set to the EEO state.

If needed, user can test the braking force of each brake under various working conditions one by one.

8.25 Function test of shorting motor stator

8.25.1 Methods of shorting motor stator

For synchronous motors, two methods of shorting motor stator are provided as shown below.

Method 1:

Split type of shorting motor stator

When starting, close the shorting motor stator contactor first, then disconnect it before closing the RUN contactor;

When stopping, disconnect the RUN contactor first, then disconnect the shorting motor stator to short the motor stator.

Method 2:

Integrated type of shorting motor stator

Please use a dedicated integrated shorting motor stator contactor which incorporates a built-in shorting motor stator contact. Each time the system is powered on, the PG card generates pulses. If the pulses are detected as normal by the system, it indicates a normal state; if detected as abnormal, it will report a fault and disable further operations;

After power-on, pulses will be generated every one hour.

8.25.2 Related parameters of shorting motor stator function test

For synchronous motors, it requires regular inspection to ensure that the shorting motor stator

contactor remains effective.


Caution

- ✧ The elevator has completed the normal-speed commissioning and is ready for normal use;
- ✧ Make sure the car is not occupied by any personnel, and that the door is fully closed;
- ✧ When synchronized independent shorting motor stator contactor is activated, the test function remains effective.

Related parameters

Parameter	Name	Range	Default	Unit
P04-33	Inspection running speed at rollback during shorting motor stator period	0.000 to rated speed	0.3	m/s
When conducting inspection at rollback during shorting motor stator period, if the speed feedback is greater than the setting value, it indicates that the result is not qualified, and the system reports a fault E7001.				
P12-28	Detection value of rollback distance	0 to 20	0	°
This parameter sets the detection value of the motor rotation mechanical angle. When set to 0, the synchronous motor defaults to 5° and the asynchronous motor defaults to 10°.				
P04-34	Inspection running time for rollback during shorting motor stator period	10 to 30 (add this parameter if not existing previously)	15	s
This parameter sets the execution duration of inspection at rollback during shorting motor stator period.				
D01-33	Shorting motor stator test result	0: Invalid 1: Success 2: Failure	-	
P05-21	Test type selection	0: Invalid 1: Slip test 2: UCMP test 24: Running test of up running overspeed protection	0	-

Parameter	Name	Range	Default	Unit
		25: Rollback test of up running overspeed protection 26: Manual test of shorting motor stator function 29: Linkage test of speed limiter and safety gear		
P-8	Keypad parameter	12: Manual test of shorting motor stator rollback		

8.25.3 Testing procedure

Manual test	Automatic test
(1) The elevator has completed the normal-speed commissioning and is ready for normal use; (2) Make sure the car is not occupied by any personnel, and that the door is fully closed; (3) Set the EEO switch to the EEO state; (4) Set P-8=26 through keypad to activate the manual test of shorting motor stator function; the keypad displays "TST"; if not displayed, it indicates that the testing conditions are not met, and a check is needed; the system will automatically reset P-8 to 0 if conditions are not met or after 30 seconds of no action; (5) Set the EEO switch back to the normal state, and the system will start testing (the elevator rejects registration of all car/hall calls); the keypad displays "TST" in a flashing manner; (6) The elevator automatically runs to the middle floor, and waits for 5 seconds after leveling; (7) Disconnect the RUN contactor; keep the shorting motor stator contactor in the closed state; close KAJ; engage the brake contactor; release the brake, and the car performs automatic rollback; (8) The keypad displays the current rollback	(1) When P12-24=0, the automatic test function is disabled; (2) If the result of the static braking force test (automatic) is qualified, the system will transport the car automatically to the middle floor to perform rollback test during shorting motor stator period; (3) During the test, the system rejects registration of all car/hall calls, and the keypad displays "TST" in a flashing manner; (4) For other testing procedures, please refer to the manual test step 6 to step 10;

Manual test	Automatic test
speed; (9) The MCB monitors the rollback speed in real time; if the rollback speed is equal to or less than the rollback inspection speed (default value of P12-37 is 0.3 m/s) within a distance of 1.2 m, it indicates that the result is qualified, and the test comes to an end; (10) If the testing duration is reached (default value of P12-38 is 20 seconds) and the rollback distance ⩽ 1.2 m, it indicates that the result is qualified, and the test comes to an end.	
The result will be displayed by D01-33 upon the completion of the test: When D01-33=1, it indicates that the result is qualified, and the elevator will re-level automatically before switching back to normal running; When D01-33=2, it indicates that the result is not qualified, and the system will report a fault E7001 (shorting motor stator fault) before bringing its service to a halt; If the result is not qualified, the elevator will disable normal running. Service will be restored only when the elevator passes another test (and the fault is removed).	

8.26 Up running overspeed protection test

Caution

- ✧ The elevator has completed the normal-speed commissioning and is ready for normal use;
- ✧ Make sure the car is not occupied by any personnel, and that the door is fully closed.

8.26.1 Related parameters

Parameter	Name	Range	Default	Unit
P12-39	Speed for up running overspeed protection test	100 to 150	130	%
The speed for the up running overspeed protection test is the maximum speed that is allowed during the test, and it equals the value of the rated elevator speed multiplied by the setting value of P12-39.				

Parameter	Name	Range	Default	Unit
P05-21	Test type selection	0: Invalid 1: Slip test 2: UCMP test 24: Running test of up running overspeed protection 25: Rollback test of up running overspeed protection 26: Manual test of shorting motor stator function 29: Linkage test of speed limiter and safety gear	0	-
P-8	Test function (keypad parameter)	24: Test of up run overspeed protection	0	-

8.26.2 Testing procedure

Rollback test	Running test
(1) The elevator has completed the normal-speed commissioning and is ready for normal use; (2) Transport the car to the bottom floor; make sure the car is not occupied by any personnel, and that the door is fully closed. (3) Set the EEO switch to the EEO state; (4) Disconnect the power cables UVW which serves to output power from the control cabinet to the traction machine (record the corresponding cable sequence); (5) Set P-8=25 on keypad, and press the SET button to confirm and to enter the rollback test mode; at the time, the keypad will display "TST"; if not displayed, it indicates that the testing conditions are not met, and a check is needed; the system will automatically restore P-8 to 0 if the conditions are not met or after 30 seconds of no action;	(1) The elevator has completed the normal-speed commissioning and is ready for normal use; (2) Make sure the car is not occupied by any personnel, and that the door is fully closed. (3) Set the EEO switch to the EEO state; (4) Set P-8=24 on keypad, and press the SET button to confirm and to enter the running test mode; at the time, the keypad will display "TST"; if not displayed, it indicates that the testing conditions are not met, and a check is needed; the system will automatically restore P-8 to 0 if the conditions are not met or after 30 seconds of no action; (5) Set the EEO switch back to the normal state, and the system will start automatic test (the elevator rejects registration of all car/hall calls); the keypad displays "TST" in a flashing manner;

Rollback test	Running test
(6) Set the EEO switch back to the normal state, and the system will start automatic test (the elevator rejects registration of all car/hall calls); (7) The system operates normally (the speed deviation fault signal is shielded), the car performs a rollback upwards, and the keypad displays "TST" in a flashing manner; (8) When the up running speed exceeds the value of the speed limiter action value, the speed limiter up running overspeed switch will disconnect the safety circuit, and the system will report a fault E41 before stop; (9) Re-connect the power cable UVW, check and restore the related safety switches and mechanical devices, and the test is finished.	(6) The elevator automatically runs to the bottom floor, and waits for 5 seconds; (7) The elevator runs upwards (the speed deviation fault signal is shielded) at a speed which equals to the rated speed multiplied by the setting value of P12-39 (default value is 130%), and the up running continues till the speed limiter up running overspeed switch acts to disconnect the safety circuit; the system reports a fault E41, and the elevator stops; (9) Check and restore the related safety switches and mechanical devices, and the test is finished.
When the test is finished and the related safety switches and mechanical devices are restored correctly, it is recommended to conduct a normal-speed test run to confirm the normality of operation.	

8.27 Linkage test of speed limiter and safety gear

Caution

- ✧ The elevator has completed the normal-speed commissioning and is ready for normal use;
- ✧ Make sure the car is not occupied by any personnel.

8.27.1 Related parameters

Parameter	Name	Range	Default	Unit
P05-21	Test type selection	0: Invalid 1: Slip test 2: UCMP test 24: Running test of up running overspeed protection 25: Rollback test of up running	0	-

Parameter	Name	Range	Default	Unit
		overspeed protection 26: Manual test of shorting motor stator function 29: Linkage test of speed limiter and safety gear		
P-8	Test function (keypad parameter)	29: Linkage test of speed limiter and safety gear (125%)	0	-

8.27.2 Testing procedure

Linkage test	Speed limiter reset
(1) During normal running, transport the car to the top floor and open the door; set the EEO switch to the EEO state, and add 125% load into the car; (2) Manually short the JMB plugin INSK---24+ on the control cabinet I/O board; (3) Set P-8=29 on keypad to activate the linkage test; at the time, the keypad displays "TST"; if not displayed, it indicates that the testing conditions are not met, and a check is needed; the system will automatically restore P-8 to 0 if the conditions are not met or after 30 seconds of no action; (4) The overload signal is shielded automatically by the system; Set the EEO switch back to the normal state, and the system starts the test (the elevator rejects registration of all car/hall calls); the keypad displays "TST" in a flashing manner; The elevator automatically runs to the bottom floor; when its speed reaches the rated value, the keypad will display "000" in a flashing manner; at the time, press the speed limiter action button and the common button	(1) Set the EEO switch to the EEO state, and remove the jumper wire of the JMB plugin INSK---24+; (2) Press the speed limiter reset button and the common button simultaneously, and restore the speed limiter mechanism and the related safety switches; (3) Enter the P-8 menu on the keypad, and select 6; after entry, set the parameter to 1 to enable the slip mode; (4) Transport the car upwards in the EEO up running mode till the safety gear is fully restored; (5) Check and reset the related safety gear electrical switches; (6) Remove the load, and the test is finished.

Linkage test	Speed limiter reset
simultaneously, and the speed limiter will act; then, the safety gear will be activated to stop the elevator; If the safety gear brings the elevator to a successful stop, it indicates the test is a success; then, restore the elevator according to the "Speed limiter reset" procedures; If the safety gear does not bring the elevator to a successful stop, troubleshooting will be needed, and another test is required.	

8.28 Steel rope slip test

Caution

- ✧ The elevator has completed the normal-speed commissioning and is ready for normal use;
- ✧ The car is stopped at the upper terminal floor in the shaft;
- ✧ Make sure the car is not occupied by any personnel, and that the door is fully closed.

8.28.1 Related parameters

Parameter	Name	Range	Default	Unit
P12-08	Compensation coefficient of steel rope slip	0 to 100	50	-
This parameter serve to facilitate the compensation when a steel rope slip occurs. Activation method for steel rope slip compensation: set P11-50 Bit5=1.				
P11-50	Program selection selection 2	Bit5 (steel rope slip compensation)	Bit5=0	-
When Bit5=1, the steel rope slip compensation function is enabled. Set P12-08 to designate the compensation coefficient.				
P05-21	Test type selection	0: Invalid	0	-

Parameter	Name	Range	Default	Unit
		1: Slip test 2: UCMP test 24: Running test of up running overspeed protection 25: Rollback test of up running overspeed protection 26: Manual test of shorting motor stator function 29: Linkage test of speed limiter and safety gear		
P-8	Test function (keypad parameter)	6: Slip test		

8.28.2 Test method

(1) The elevator has completed the normal-speed commissioning and is ready for normal use;

(2) Make sure the car is not occupied by any personnel, and that the door is fully closed;

(3) Set the EEO switch to the EEO state;

(4) Set P-8=6 on keypad to activate the slip test; at the time, the keypad displays "TST"; if not displayed, it indicates that the testing conditions are not met, and a check is needed;

(5) The system will automatically restore P-8 to 0 if the conditions are not met or after 30 seconds of no action

At the time, the up limit function is invalid;

The system automatically increases the output torque;

The system keeps the fan working;

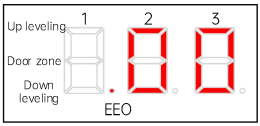
(6) Press the EEO up running button and the common button simultaneously, and the elevator will run upwards at the EEO speed;

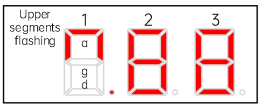
(7) when the elevator counterweight touches the buffer, check whether slippage/vibration occurs between the traction sheave and the steel rope;

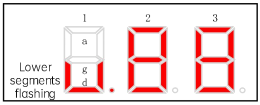
(8) When the elevator stops, the slip test command is automatically removed;

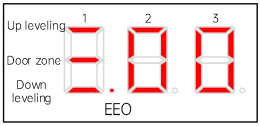
When P-8 is set to 6, after each time of running, it will be reset to 0 (including being reset to 0 after power-off).

8.29 Electrical brake release instructions

The elevator stops without leveling.		Digital tube 1: it displays the leveling status; Digital tube 2 and digital tube 3: the two display the current floor number of the elevator for 3 seconds in a flashing manner, and then display (stay on and not flashing) the current speed for 3 seconds (.**).

During upward rollback		Digital tube 1: it displays the content as shown in the left figure in a flashing manner during up running;
		Digital tube 1
		a: Stay on = Up leveling;
		g: Stay on = Door zone;
		d: Stay on = Down leveling;
		Digital tube 2 and digital tube 3: the two display the current floor number of the elevator for 3 seconds in a flashing manner, and then display (stay on and not flashing) the current speed for 3 seconds (.**).

During downward rollback		Digital tube 1: it displays the content as shown in the left figure in a flashing manner during down running;
		Digital tube 1
		a: Stay on = Up leveling;
		g: Stay on = Door zone;
		d: Stay on = Down leveling;
		Digital tube 2 and digital tube 3: the two display the current floor number of the elevator for 3 seconds in a flashing manner, and then display (stay on and not flashing) the current speed for 3 seconds (.**).

The elevator stops with car leveling		Digital tube 1: it displays the leveling status; Digital tube 2 and digital tube 3: the two display the current floor of the elevator.

(1) Close the car door and the landing door; make sure the door lock circuit is conducting;

(2) Turn off the switch of the external power input; set the EEO switch to the EEO state;

(3) Press and hold the power restart button till the standby power is activated; the MCB is in the normal state; the system automatically checks whether the conditions (door lock circuit and safety circuit) for a brake release test is met;

(4) Press the brake release ready button and the release button simultaneously; the elevator releases the brake and performs a slow rollback till it reaches the leveling position and stops; if the rollback speed exceeds the setting value, the system will automatically stop the car and restart the rollback; after the elevator leveling, evacuate the people inside in the car;

(5) During the brake release, the MCB displays the current direction, speed, and floor;

(6) When the elevator is in the leveling state, press the forced release button first, and then press the brake release ready button and the release button simultaneously to perform a forced rollback;

(7) The standby power will continuously work for 45 seconds; if car leveling is not completed, the power will automatically stop outputting; please press the power restart button to start again.

8.30 Rescue work instructions

The rescue work requires two personnel at least, and one person should be in charge of unified command. Good communication should be maintained among them, and the operations should be carried out synchronously.

(1) Use the intercom device to contact the people inside the elevator car, communicate with and soothe them, find out the approximate position of the elevator car, and require the people inside the car not to approach the car door and wait for rescue;

(2) Reach the actual floor where the elevator car is located;

(3) Notify the people inside the elevator car to get ready for the rescue;

(4) When the elevator car is within the door lock opening area of a certain floor: The rescuers use the triangular lock key to open the door and release the trapped people.

(5) When the elevator car is outside the door lock opening area of a certain floor:

When power is provided:

① Confirm that both the car door and the landing door are properly closed;

② Set the EEO switch to the EEO state;

③ Clear the fault, and transport the car to the leveling position in the EEO state; then, set the EEO switch back to the normal state, and the door opens automatically to release the passengers.

④ If the fault cannot be cleared, please refer to the following steps for the situation when power is cut off;

When power is cut off:

Please refer to the section "Electrical brake release instructions".

When the total weight of the car is exactly balanced with that of the counterweight:

Open the landing door of the bottom floor and enter the pit; use hanging tools and counterweights to change the balanced state;

Open the landing door of the floor above the floor where the car is parked, and use ropes and hooks to

place heavy objects (sandbags) on the top of the car to change the balanced state;

After the balanced state is changed, repeat the above rescue operations.

8.31 MRL speed limiter test instructions

(1) Close the car door and the landing door; make sure the door lock circuit is conducting;

(2) Set the EEO switch to the EEO state;

(3) Press the speed limiter action button and the common button simultaneously to trigger the safety gear; the gear will then stop the elevator;

(4) Press the speed limiter reset button and the common button to restore the speed limiter mechanism and the related safety switches.

8.32 CTB door open/close test

When the elevator is in the car top inspection mode (indicator X12 is off), press and hold both the "door open button X23" and "door close button X24" on the car top I/O board for 5 seconds until the "CTB Y9" outputs a signal, activating the light and sound alarm. This indicates the activation of the CTB door open/close test mode.

When in the CTB door open/close test mode:

All door open/close protection signals (e.g., light curtain and door open/close limit) and other door open/close signals are temporarily shielded;

Press the door open button X23 to trigger the output of the door open signal by Y1/Y4;

Press the door close button X24 to trigger the output of the door close signal by Y2/Y5;

The system allows the test of the door operator installation state (for double-sided elevators, the front and rear doors can be tested one by one individually).

The system automatically exits this mode upon receiving any elevator operation signal (e.g., EEO up/down running, or inspection up/down running).

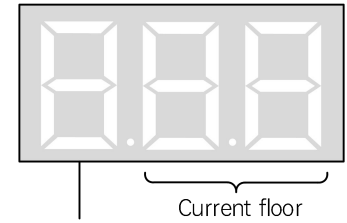
Chapter 9 Parameter Description

9.1 Keypad parameter description

The function menus displayed on the keypad are described as follows:

- P-0: Display of floor and running direction

  By default, the P-0 menu is displayed on the keypad upon power-on. The first LED indicates the running direction, and the last two LEDs indicate the current floor number. When the elevator stops, the first LED has no display. When the elevator runs up/down, the first LED flashes to indicate the running direction. When the system has a fault (no fault exists before), the fault code scrolls automatically. If the fault is reset automatically, the P-0 menu is displayed.



- P-1: Command input of the running floor

  After user enters the P-1 menu by pressing the PRG, UP and SET keys, the LEDs display the bottom floor of the elevator (P11-07). Use the UP key to set user's destination floor and press SET to save the setting. Then, the elevator runs to the destination floor, and the display automatically switches to the P menu.

- P-2: Fault reset and fault time display

  After user enters the P-2 menu by pressing the PRG, UP and SET keys, the LEDs displays "0". User can press the UP key to change the setting to 0–2:

  "1": If user selects this value and press the SET key, the system fault is cleared. Then, the display automatically switches to the P-0 menu.

  "2": If user selects this value and press the SET key, the LEDs display the codes and occurrence time of 10 faults. User can press the PRG key to exit.

- P-3: Time display

  After user enters the P-3 menu by pressing the PRG, UP and SET keys, the LEDs display the current

system time.

- P-4: Contract number display

  After user enters the P-4 menu by pressing the PRG, UP and SET keys, the LEDs display the user's contract number.

- P-5: Running times display

  After user enters the P-5 menu, the LEDs display the elevator running times.

- P-6: Door open/close control

  After user enters the P-6 menu by pressing the PRG, UP and SET keys, the LEDs display 1-1, and UP and SET control the door open and close respectively. User can press the PRG key to exit.

- P-7: Floor auto-tuning command input

  After user enters the P-7 menu by pressing the PRG, UP and SET keys, the LEDs display "0". User can choose 0–2 using the UP key. 1 and 2 indicate the shaft auto-tuning command (1: Leveling adjustment parameters in group P20 not cleared; 2: Leveling adjustment parameters in group P20 cleared). After user selects 1 or 2 and press SET, shaft auto-tuning is implemented if the conditions are met. Meanwhile, the display switches to the P-0 menu. After shaft auto-tuning is completed, P-7 is back to 0 automatically. If shaft auto-tuning conditions are not met, fault code E35 is displayed.

- P-8: Test function

  After user enters the P-8 menu by pressing the PRG, UP and SET keys, the LEDs display "0". The setting of P-8 is described as follows:

1	Hall call forbidden
2	Door open forbidden
3	Overload forbidden
4	Limit switches disabled
6	Slip test
7	Manual UCMP test
8	Manual braking force test

  After setting, press the SET key to save. The LEDs flashes "E88", indicating the elevator is under test. When user presses PRG to exit, P-8 restores to 0 automatically.

- P-9: Reserved

- P-A: Auto-tuning

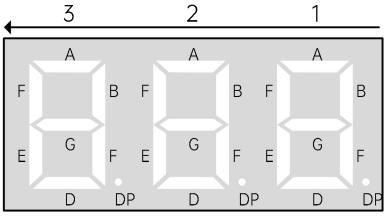
  After user enters the P-A menu by press the PRG, UP and SET keys, the LEDs display "0".

0	Disabled
1	With-load auto-tuning

After setting, press the SET key to save. The LEDs display "TUNE", and the elevator enters the auto-tuning state. After confirming that the safe running conditions are met, press the SET key again to start motor auto-tuning. After the auto-tuning is finished, the LEDs display the current angle for 2 s and then switch to the P-0 menu automatically. User can press the PRG key to exit the auto-tuning state.

- P-b: CTB state display

After user enters the P-b menu by pressing the PRG, UP and SET keys, the LEDs display the input/output state of the CTB. The following figure shows the meaning of each segment:



LED segments ON: valid signal
LED segments OFF: invalid signal

	1	2	3
A	Light curtain 1 input	Light-load	Door open 1 output
B	Light curtain 2 input	-	Door close 1 output
C	Door open limit 1 input	-	Forced door close 1 output
D	Door open limit 2 input	-	Door open 2 output
E	Door close limit 1 input	-	Door close 2 output
F	Door close limit 2 input	-	Forced door close 2 output
G	Full-load input	-	Up arrival gong output
DP	Overload input	-	Down arrival gong output

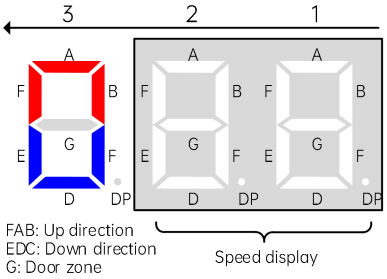
- P-C: Do not modify the value of PC randomly. The function of PC is the same as that of P00-07.

  0: Direction unchanged

  1: Direction reversed

- P-d: Emergency and test operation functions

After user enters the Pd menu by pressing the PRG, UP and SET keys, the LEDs display the car state under emergency and test operation. The following figure shows the meaning of each segment of the LEDs:



The system automatically displays this interface in the emergency evacuation, 12 V supply or shorting stator braking state.

Note:

When the elevator speed is below 1.000 m/s, ".xx m/s" is displayed. When the speed is greater than 1 m/s, "x.x m/s" is displayed. Therefore, the decimal places are different.

9.2 Operating panel parameter description

There are 3 levels for Smile3000 parameters, as described below:

① Function parameter groups correspond to the level I menu

② Function parameters correspond to the level II menu

③ Parameter values correspond to the level III menu

(1) Term explanation of the function code table

Field	Meaning
Parameter	Parameter No.
Name	Full name of parameter
Range	Value range of parameter
Default	Factory setting of parameter
Unit	Unit of parameter
Property	○: indicates that the function code can be modified during running. ×: indicates that the function code can only be modified at stop. *: indicates that the function code is read-only and cannot be modified.

(The system has made fool-proofing design on the modification properties of function codes to prevent misoperation.)

(2) Parameter group

After pressing MENU ESC and then ∧/∧ on the LED operating panel, user can view the parameter groups.The following table shows the details.

Group	Name	Group	Name
P00	Basic parameters	P15	Communication parameters
P01	User parameters	P16	Time parameters
P02	Motor parameters	P17	Test function parameters
P03	Speed control parameters	P18	Maintenance parameters
P04	Vector control parameters	P19	Floor height parameters
P05	Running control parameters	P20	Leveling adjustment parameters
P06	MCB terminal parameters	P21	Floor display parameters
P07	CTB terminal parameters	D00	Basic configuration
P08	Door operator parameters	D01	Running state
P09	Hall call parameters	D02	MCB state
P10	Load cell parameters	D03	CTB state
P11	Basic elevator parameters	D04	Communication state
P13	Keypad setting parameters	E00 to E10	Fault record parameters

9.2.1 P00: Basic parameters

Parameter	Name	Range	Default	Unit	Property
P00-00	Control mode	0: SVC 1: FVC 2: V/F 3: I/F	1	-	×

It is used to set the control mode of the system, as described in the following table:

Value	Control mode	Function	Encoder needed?
0	SVC	It is applicable to: Low-speed running during no-load commissioning and fault judgment at inspection of the asynchronous motor;	No

Parameter	Name	Range	Default	Unit	Property
		Synchronous motor running under special operating conditions (used only by professional engineers, not specified in this manual)			
1	FVC	It is applicable to normal running under distance control			Yes
2	V/F	It is applicable to equipment detection (Almost fixed voltage/frequency ratio, simple control, and poor low-frequency torque characteristics)			No
3	I/F	-			No

Parameter	Name	Range	Default	Unit	Property
P00-01	Command source selection	0: Operating panel control 1: Distance control	1	-	×

It is used to set the source of running commands and running speed references, as described in the following table:

Value	Running mode	Working mode		Application	Note
		(X) input	(Y) output		
0	Operating panel control	X input signals not judged	No output (During motor auto-tuning, the relay controlling the RUN contactor has an output.)	Applies only to motor test or no-load auto-tuning	Control by pressing the RUN and STOP keys on the operating panel, and the running speed is set by P00-02 (Running speed under operating panel control).
1	Distance control	X input signals judged	Output	Used during normal elevator running	① During inspection, the elevator runs at the speed set in P03-01. ② During normal running, the control system automatically computes the speed (within the rated speed range) and running curve for the elevator based on the distance between the current floor and the destination floor, and it

Parameter	Name	Range	Default	Unit	Property
			implements direct travel ride.		

Parameter	Name	Range	Default	Unit	Property
P00-02	Running speed under operating panel control	0.050 to P00-04	0.050	m/s	○
P00-03	Maximum running speed of elevator	0.250 to P00-04	1.600	m/s	×
P00-04	Rated elevator speed	0.250 to 4.000	1.600	m/s	×
P00-02 is used to set the running speed in the operating panel control mode. P00-03 is used to set the actual maximum running speed of the elevator. The value is not greater than the rated elevator speed. P00-04 is used to set the nominal rated speed of the elevator. The value of this parameter depends on the elevator mechanism and the traction motor. Do not modify it randomly.					

Parameter	Name	Range	Default	Unit	Property
P00-05	Rated load	300 to 9999	1000	kg	×
Used to set the rated elevator load capacity. It is used in the anti-nuisance function.					

Parameter	Name	Range	Default	Unit	Property
P00-06	Maximum frequency	P02-04 to 99.00	50.00	Hz	×
Used to set the maximum output frequency of the system. This value must be greater than the rated motor frequency.					

Parameter	Name	Range	Default	Unit	Property
P00-07	Elevator running direction	0, 1	0	-	×
Used to set the elevator running direction. The values are as follows: 0: Direction unchanged 1: Direction reversed User can modify F00-07 to reverse the motor running direction without changing motor wiring. When					

Parameter	Name	Range	Default	Unit	Property
user performs inspection running for the first time after motor auto-tuning is successful, check whether the actual motor running direction is consistent with the inspection command direction. If not, change the motor running direction by setting F00-07. Pay attention to the setting of this parameter when restoring the factory parameters.					

Parameter	Name	Range	Default	Unit	Property
P00-08	Carrier frequency	0.5 to 16.0	6.0	kHz	×

Used to set the carrier frequency of the controller.

The carrier frequency is closely related to the motor noise during running. When the carrier frequency is generally set above 6 kHz, quiet running is achieved. It is recommended to set the carrier frequency to a much lower value within the allowable noise range, which reduces the controller loss and radio frequency interference.

- When the carrier frequency is low, the high harmonic components of output current will increase with greater motor loss and temperature rise.
- When the carrier frequency is high, the motor loss and temperature rise decrease with greater controller loss, temperature rise, and interference.

The correlation between the carrier frequency and the system performance is shown in the following table.

Carrier frequency	Low/High
Motor noise	Large/Small
Output current waveform	Bad/Good
Motor temperature rise	High/Low
Controller temperature rise	Low/High
Leakage current	Small/Large
External radiation interference	Small/Large

9.2.2 P01: User parameters

Parameter	Name	Range	Default	Unit	Property
P01-00	Level 1 password	0 to 65535	0	-	○

Parameter	Name	Range	Default	Unit	Property
Used to set the user password (0: No password). The password prohibits unauthorized personnel from viewing and modifying parameters. If it is set to any non-zero number, the password protection function is enabled. After a password has been set and taken effect, user must enter the correct password in order to enter the menu. If the entered password is incorrect, user cannot view or modify parameters. If P01-00 is set to 00000, the previously set user password is cleared, and the password protection function is disabled. Remember the password that user sets. If the password is set incorrectly or forgotten, contact the manufacturer to replace the control board.					

Parameter	Name	Range	Default	Unit	Property
P01-01	Parameter update	0: Not available 1: Restoring default parameters 2: Clearing records 3: Clearing shaft data	0	-	×
P01-01 is used to reset some system parameters. The possible values are as follows: 0: Not available 1: Restoring default parameters: It is to restore factory parameters except group P02. Use this function with caution. 2: Clearing fault records: Fault records are cleared. E00-00 to E00-10 and parameters in groups E1 to E10 are set to 0. 3: Clearing shaft data: Floor pulse data in the shaft is cleared. Shaft pulses of P05-10 to P05-15 and group P19 are set to 0. The leveling adjustment parameters in group P20 are set to 30030. Shaft auto-tuning must be performed again after clearing.					

Parameter	Name	Range	Default	Unit	Property
P01-02	Check on user-defined parameters	0: Inactive 1: Active	0	-	×
P01-02 is used to view the parameters that are different from the default settings. When it is set to 1, user can view the parameters that are different from the default parameters.					

Parameter	Name	Range	Default	Unit	Property
P01-03	Level 2 password	0 to 65535	0	-	×
P01-04	Level 3 password	0 to 65535	0	-	×

9.2.3 P02: Motor parameters

Parameter	Name	Range	Default	Unit	Property
P02-00	Motor type	0, 1	1	-	×
This parameter is used to select the motor type. The values are as follows: 0: Asynchronous motor 1: Synchronous motor					

Parameter	Name	Range	Default	Unit	Property
P02-01	Rated motor power	0.7 to 75.0	11.0	kW	×
P02-02	Rated motor voltage	0 to 600	380	V	×
P02-03	Rated motor current	0.00 to 655.00	21.80	A	×
P02-04	Rated motor frequency	0.00 to P00-06	50.00	Hz	×
P02-05	Rated motor speed	0 to 3000	1460	rpm	×
Set these parameters according to the motor type and motor nameplate.					

Parameter	Name	Range	Default	Unit	Property
P02-06	Wiring mode	0, 1	0	-	×
P02-06 specifies the motor wiring mode, that is, whether the output phase sequence of the drive board is consistent with the UVW phase sequence of the motor. If the value obtained by means of no-load auto-tuning is an even number, the phase sequence is correct. If the value is an odd number, the sequence is incorrect; in this case, interchange any two phases.					

Parameter	Name	Range	Default	Unit	Property
P02-07	DSP fault block	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
P02-08	Encoder type selection	0: Sin/Cos encoder 1: UVW encoder 2: ABZ encoder 3: Reserved	0	-	×

Set P02-08 to a proper value according to the type of encoder used together with the motor.

- When P02-00 is set to 1 (Synchronous motor), set this parameter correctly before auto-tuning. Otherwise, the motor cannot run properly.
- When P02-00 is set to 0 (Asynchronous motor), this parameter is automatically changed to 2 (ABZ encoder). User needs not modify it manually.

Parameter	Name	Range	Default	Unit	Property
P02-09	Encoder pulses per revolution	0 to 10000	2048	PPR	×

Used to set the pulses per revolution of the encoder (according to the encoder nameplate).

Parameter	Name	Range	Default	Unit	Property
P02-10	Encoder disconnection detection time	0 to 10.0	0	s	×

Used to set the time that the encoder disconnection lasts before it is detected.

After the elevator starts running at non-zero speed, the system prompts the encoder fault and stops running if there is no encoder signal input within the time set in this parameter. When the value is smaller than 0.5 s, this function is disabled.

Parameter	Name	Range	Default	Unit	Property
P02-11	Auto-tuning selection	0 to 5	0	-	×

Used to select the auto-tuning mode. The values are as follows:

0: No operation

1: Rotary with-load auto-tuning

2: Rotary no-load auto-tuning

3: Shaft auto-tuning 1

Parameter	Name	Range	Default	Unit	Property
4: Shaft auto-tuning 2 5: Synchronous motor static auto-tuning					

Parameter	Name	Range	Default	Unit	Property
P02-12	Encoder installation angle	0.0 to 359.9	0	°	×
P02-12 specifies the encoder angle at zero point. After multiple times of auto-tuning, compare the obtained values, and the value deviation of P02-12 shall be within ±5°.					

Parameter	Name	Range	Default	Unit	Property
P02-13	Stator resistance	0.001 to 30.000	0.400	Ω	×
P02-14	Rotor resistance	0.001 to 30.000	0.001	Ω	×
P02-15	Leakage inductance	0.01 to 300.00	0.01	mH	×
P02-16	Mutual inductance	0.1 to 3000.0	0.1	mH	×
P02-17	No-load current	0.01 to 300.00	0.01	A	×
These parameters are obtained through asynchronous motor auto-tuning. After motor auto-tuning is completed, the parameter values are updated automatically. If motor auto-tuning cannot be performed on-site, manually enter the parameter values of the motor with same nameplate. Each time the rated power (P02-01) of the asynchronous motor is modified, these parameters automatically restore to the standard default values.					

Parameter	Name	Range	Default	Unit	Property
P02-18	Q-axis inductance (torque)	0.00 to 650.00	3.00	mH	×
P02-19	D-axis inductance (excitation)	0.00 to 650.00	3.00	mH	×
P02-20	Back EMF coefficient	0 to 65535	0	-	×
P02-18 to F02-20 are used to display the D-axis and Q-axis inductance and back EMF coefficient of the synchronous motor obtained by means of motor auto-tuning.					

9.2.4 P03: Speed control parameters

Parameter	Name	Range	Default	Unit	Property
P03-00	Re-leveling speed	0.020 to 0.080	0.040	m/s	×
Used to set the elevator speed during re-leveling. This parameter is valid when the advance door opening module is added for the re-leveling function (set in P12-09).					

Parameter	Name	Range	Default	Unit	Property
P03-01	Inspection speed	0.100 to 0.630	0.250	m/s	×
P03-01 is used to set the elevator speed during inspection.					

Parameter	Name	Range	Default	Unit	Property
P03-02	Low-speed re-leveling speed	0.080 to P03-01	0.100	m/s	×
P03-02 is used to set the elevator speed of returning to the leveling position at normal non-leveling stop.					
Parameter	Name	Range	Default	Unit	Property
P03-03	Emergency evacuation speed at power failure	0.020 to 0.300	0.050	m/s	×
P03-03 is used to set the elevator speed for emergency evacuation operation at power failure.					

Parameter	Name	Range	Default	Unit	Property
P03-04	Emergency evacuation switching speed	0.010 to 0.630	0.010	m/s	×
P03-05	Elevator speed in the EEO state	0.100 to 0.300	0.250	m/s	×
P03-06	Shaft auto-tuning speed	0.100 to 0.630	0.250	m/s	×
P03-04 is used to set the switching speed for the switchover of the shorting stator braking mode to controller drive.					

9.2.5 P04: Vector control parameters

Parameter	Name	Range	Default	Unit	Property
P04-00	Speed loop proportional gain 1	0 to 100	15	-	×
P04-01	Speed loop integral time 1	0.01 to 10.00	0.80	s	×
P04-02	Switchover frequency 1	0.00 to P04-05	2.00	Hz	×
P04-03	Speed loop proportional gain 2	0 to 100	20	-	×
P04-04	Speed loop integral time 2	0.01 to 10.00	0.80	s	×
P04-05	Switchover frequency 2	P04-02 to P00-06	9.00	Hz	×

Speed loop proportional gain and speed loop integral time are PI regulation parameters when the running frequency is lower than the switchover frequency 1.

Speed loop proportional gain and speed loop integral time are PI regulation parameters when the running frequency is higher than the switchover frequency 2.

If the running frequency is between the switchover frequency 1 and 2, the PI regulation parameters are the weighted average of P04-00, P04-01, P04-03 and P04-04. The following figure shows the details.

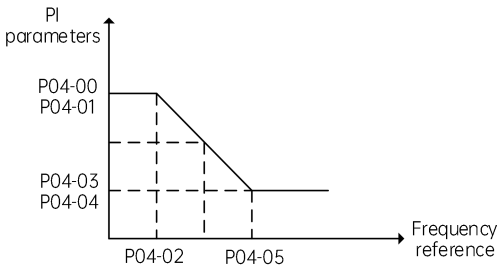


Figure 9-1 PI parameter

The speed dynamic response characteristics in vector control can be adjusted by setting the proportional gain and integral time of the speed regulator. To achieve a faster system response, increase the proportional gain or reduce the integral time. Be aware that a too large proportional gain or too small integral time may lead to system oscillation. Recommended adjustments:

- If the default setting cannot meet the requirements, do some fine-tuning. Decrease the proportional gain to make sure that the system does not oscillate. Then reduce the integral time to make sure that the system has a quick response while maintaining a small overshoot.
- If both switchover frequency 1 and switchover frequency 2 are 0, only P04-03 and P04-04 are valid.

Parameter	Name	Range	Default	Unit	Property
P04-06	Current loop proportional gain Kp	10 to 500	100	-	×
P04-07	Current loop integral gain Ki	10 to 500	100	-	×

Current loop proportional gain Kp and current loop integral gain Ki are the regulation parameters for the torque axis current loop.

Note:

The parameters are used as the torque axis current regulator in vector control. The optimum values matching the motor characteristics are obtained through motor auto-tuning. Generally, user needs not modify these parameters.

Parameter	Name	Range	Default	Unit	Property
P04-08	Torque upper limit	0.0 to 200.0	200.0	%	×

Used to set the motor torque upper limit. The value 100% corresponds to the rated output torque of the AC drive.

Parameter	Name	Range	Default	Unit	Property
P04-09	Zero servo gain coefficient	2.0 to 50.0	5.0	%	×
P04-10	Zero servo speed loop KP	0.01 to 2.00	0.40	-	×
P04-11	Zero servo speed loop KI	0.01 to 2.00	1.00	-	×

Used for no-load-cell startup pre-torque self-adaption. User can enable the no-load-cell startup function by setting P12-00 (Pre-torque selection) to 2 or 3.

Decrease these parameters properly in the case of car lurch at startup, and increase them properly in the case of rollback at startup.

Parameter	Name	Range	Default	Unit	Property
P04-14	Torque acceleration time	1 to 500	1	ms	×
P04-15	Torque deceleration time	1 to 3000	350	ms	×

Used to set the acceleration and deceleration time of the torque current.

At stop, take following possible measures due to the differences of motor characteristics:

- If some abnormal sound occurs when the current increases from zero at startup, increase the value

Parameter	Name	Range	Default	Unit	Property
of P04-14 to eliminate the sound. ● If some abnormal sound occurs when the current decreases to zero at stop, increase the value of P04-15 to eliminate the sound.					

Parameter	Name	Range	Default	Unit	Property
P04-16	Startup acceleration time	0.000 to 1.500	0.000	s	×
P04-17	Speed filter coefficient	0.00 to 20.00	0.20	ms	×

Parameter	Name	Range	Default	Unit	Property
P04-18	Function setting	0 to 65535	0	-	○
P04-19	Obtained pulse width	0 to 100	8	-	×

Parameter	Name	Range	Default	Unit	Property
P04-24	Number of motor pole pairs	0 to 100	8	-	×
P04-25	IF current limit	0 to 200	30	%	○

Parameter	Name	Range	Default	Unit	Property
P04-26	Current upper threshold	0 to 200	100	%	×
P04-27	Current lower threshold	0 to 200	60	%	×

Parameter	Name	Range	Default	Unit	Property
P04-29	Encoder AB direction	0 to 1	0	-	×
P04-30	Encoder CD direction	0 to 1	0	-	×
P04-31	IF function selection	0 to 1	0	-	×
0: DC positioning 1: IF rotating					
P04-32	IF DC angle setting	0.0 to 360.0	0.0	-	○

Parameter	Name	Range	Default	Unit	Property
P04-33	Inspection running speed at rollback during shorting motor stator period	0.050 to P00-04	0.300	m/s	○
P04-34	Inspection running time for rollback during shorting motor stator period	0.0 to 20.0	4.0	s	○

9.2.6 P05: Running control parameters

Parameter	Name	Range	Default	Unit	Property
P05-00	Startup speed	0.000 to 0.050	0.000	m/s	×
P05-01	Startup speed holding time	0.000 to 5.000	0.000	s	×

P05-00 and P05-01 are used to set the startup speed and startup speed holding time of the system respectively. See "Figure 9-2 Speed curve".

The parameters may reduce the terrace feeling at startup due to static friction between the guide rail and the guide shoes.

Parameter	Name	Range	Default	Unit	Property
P05-02	Acceleration rate	0.200 to 1.500	0.700	m/s^2	×
P05-03	Acceleration start segment	0.300 to 4.000	1.500	s	×
P05-04	Acceleration end segment	0.300 to 4.000	1.500	s	×

P05-02, P05-03, and P05-04 are used to set the running curve during acceleration of the elevator, as shown in Fig. 7-2 and Fig. 7-3.

- P05-02 is the acceleration rate of the elevator speed curve (constant acceleration).
- P05-03 is the time for the acceleration rate from 0 to the value set in P05-02 in the speed curve (increasing acceleration). The larger the value is, the smoother the speed curve is.
- P05-04 is the time for the acceleration rate from the value set in P05-02 to 0 in the speed curve (decreasing acceleration). The larger the value is, the smoother the speed curve is.

Parameter	Name	Range	Default	Unit	Property
P05-05	Deceleration rate	0.200 to 1.500	0.700	m/s^2	×

Parameter	Name	Range	Default	Unit	Property
P05-06	Deceleration end segment	0.300 to 4.000	1.500	s	×
P05-07	Deceleration start segment	0.300 to 4.000	1.500	s	×

P05-05, P05-06, and P05-07 are used to set the running curve during deceleration of the elevator, as shown in Fig. 7-2 and Fig. 7-3.

- P05-05 is the deceleration rate of the elevator speed curve (constant deceleration).
- P05-06 is the time from the value set in P05-05 to 0 in the speed curve (decreasing deceleration). The larger the value is, the smoother the speed curve (deceleration end segment) is.
- P05-07 is the time from 0 to the value set in P05-05 in the speed curve (increasing deceleration). The larger the value is, the smoother the speed curve (deceleration start segment) is.

The following figure shows the settings of the entire running curve.

P05-02 (P05-05) is the acceleration (deceleration) rate of the S-curve in the linear acceleration process.

P05-03 (P05-07) is the time for the acceleration (deceleration) rate to change from 0 to the value set in P05-02 (P05-05) in the start jerk segment. The larger the value is, the smoother the jerk is.

P05-04 (P05-06) is the time for the acceleration (deceleration) rate to decrease from the value set in P05-02 (P05-05) to 0 in the end jerk segment. The larger the value is, the smoother the jerk is.

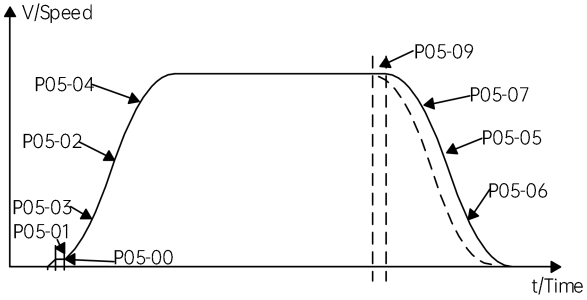


Figure 9-2 Speed curve

Parameter	Name	Range	Default	Unit	Property

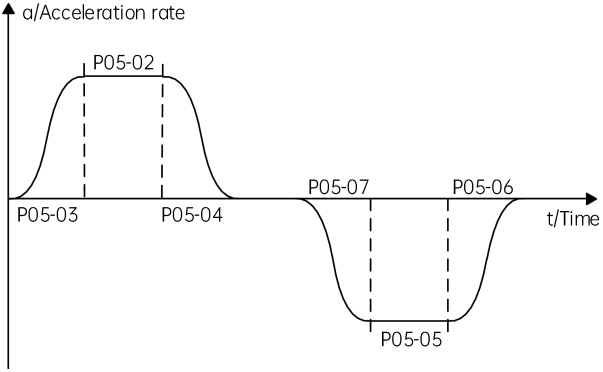


Figure 9-3 Acceleration/Deceleration curve

Parameter	Name	Range	Default	Unit	Property
P05-08	Special deceleration rate	0.500 to 1.500	0.900	m/s²	×
It is used to set the deceleration rate when the elevator has a level 4 fault or in the inspection, shaft auto-tuning, re-leveling, and terminal floor verification state. This parameter is not used during normal running. It is used only when the elevator position is abnormal or the slowdown signal is abnormal, preventing the elevator top-hitting or bottom-clashing.					

Parameter	Name	Range	Default	Unit	Property
P05-09	Pre-deceleration distance	0 to 90.0	0.0	mm	×
It is used to set the pre-deceleration distance of the elevator, as shown in Fig. 7-2. This function is to eliminate the influence of encoder signal loss or leveling signal delay.					

Parameter	Name	Range	Default	Unit	Property
P05-10	Position of up level-1 slowdown switch	0.00 to 300.00	0.00	m	×
P05-11	Position of down level-1 slowdown switch	0.00 to 300.00	0.00	m	×
P05-12	Position of up level-2 slowdown switch	0.00 to 300.00	0.00	m	×

Parameter	Name	Range	Default	Unit	Property
P05-13	Position of down level-2 slowdown switch	0.00 to 300.00	0.00	m	×
P05-14	Position of up level-3 slowdown switch	0.00 to 300.00	0.00	m	×
P05-15	Position of down level-3 slowdown switch	0.00 to 300.00	0.00	m	×

P05-10 to P05-15 specify the positions of all slowdown switches relative to the bottom leveling position, and the positions are automatically recorded during shaft auto-tuning.

Smile3000 supports a maximum of three pairs of slowdown switches. From two sides of the shaft to the middle, level-1 slowdown, level-2 slowdown, and level-3 slowdown are installed in order; that is, level-1 slowdown is installed near the terminal floor. There may be only one pair of slowdown switches for the low-speed elevator, and two or three pairs of slowdown switches for the high-speed elevator.

The system automatically detects the speed when the elevator reaches a slowdown switch. If the detected speed or position is abnormal, the system enables the elevator to slow down at the special deceleration rate set in P05-08, preventing the elevator top-hitting or bottom-crashing.

Parameter	Name	Range	Default	Unit	Property
P05-16	Zero-speed current output time	0.200 to 1.000	0.200	s	×
P05-17	Holding time of zero-speed torque current upon brake release	0.000 to 2.000	0.600	s	×
P05-18	Zero-speed control time at end	0.000 to 0.500	0.300	s	×

P05-16, P05-17, and P05-18 are used to set the zero-speed current output holding time and the braking action delay.

- P05-16 specifies the time from output of the RUN contactor to output of the brake contactor, during which the controller performs excitation on the motor and outputs zero-speed current with large startup torque.
- P05-17 specifies the time from the moment the system sends a brake release command. Within the set time range, the system maintains the zero-speed torque current output to prevent rollback.
- P05-18 specifies the zero-speed output time when the running curve ends.

The following figure shows the running timing.

Parameter	Name	Range	Default	Unit	Property

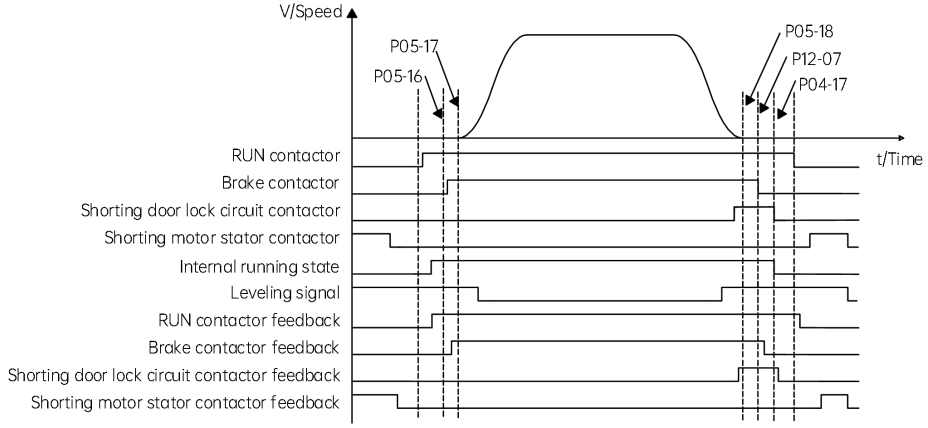


Figure 9-4 Running timing diagram

Caution

P12-07 specifies the time from the moment the system sends a brake close command. Within the set time range, the system maintains the zero-speed torque current output to prevent rollback.

Parameter	Name	Range	Default	Unit	Property
P05-19	Acceleration rate at emergency evacuation	0.100 to 1.300	0.300	m/s^2	×
P05-19 is used to set the acceleration rate at emergency evacuation.					

Parameter	Name	Range	Default	Unit	Property
P05-20	Deceleration delay time upon hitting slowdown switch	0.00 to 10.00	0	s	×
P05-20 indicates the delay that the elevator speed decreases to 0.1 m/s upon hitting the slowdown switch during inspection, re-leveling, terminal floor verification, and shaft auto-tuning.					

Parameter	Name	Range	Default	Unit	Property
P05-21	Slip test	0 to 2	0	s	×
0: Inactive 1: Slip test 2: UCMP test					

9.2.7 P06: MCB terminal parameters

Parameter	Name	Range	Default	Unit	Property
P06-01	X1 function selection	00 to 199 (NO: 0 to 99) (NC=NO+100)	1	-	×
P06-02	X2 function selection		3	-	×
P06-03	X3 function selection		2	-	×
P06-04	X4 function selection		22	-	×
P06-05	X5 function selection		130	-	×
P06-06	X6 function selection		106	-	×
P06-07	X7 function selection		107	-	×
P06-08	X8 function selection		132	-	×
P06-09	X9 function selection		50	-	×
P06-10	X10 function selection		57	-	×
P06-11	X11 function selection		154	-	×
P06-12	X12 function selection		152	-	×
P06-13	X13 function selection		9	-	×
P06-14	X14 function selection		10	-	×
P06-15	X15 function selection		116	-	×
P06-16	X16 function selection		118	-	×
P06-17	X17 function selection		117	-	×
P06-18	X18 function selection		119	-	×
P06-19	X19 function selection		126	-	×

Parameter	Name	Range	Default	Unit	Property
P06-20	X20 function selection		146	-	×
P06-21	X21 function selection		147	-	×
P06-22	X22 function selection		58	-	×
P06-23	X23 function selection		27	-	×
P06-24	X24 function selection		0	-	×

Parameters P06-01 to P06-24 are used to set the digital signal input X1 to X24. Select the correct input parameters according to the function of input signals.

Smile3000 provides 24 low-voltage DIs (X1 to X24), 3 high-voltage DIs (X25 to X27), and 1 AI (Ai/M). All low-voltage inputs share the COM terminal. When the 24 VDC is applied, the corresponding input indicator becomes ON.

If a certain function cannot be set, check whether this function is operating or has been assigned to other terminals.

Caution

The parameter values that can be set repeatedly include:

04/104: Safety circuit feedback NO/NC;

05/105: Door lock circuit feedback NO/NC;

06/106: RUN contactor feedback NO/NC;

07/107: Brake output feedback NO/NC;

26/126: Brake travel switch 1 NO/NC;

The NO setting of each function is as follows (NC value=NO value +100):

00: Inactive

Even if there is signal input to the terminal, the system has no response. User can set unassigned terminals to invalid state to prevent malfunction.

01: Up leveling signal

02: Down leveling signal

03: Door zone signal

The Smile3000 system determines the elevator leveling position based on the leveling switch signal. The system supports three types of leveling configurations: single door zone switch, up and down leveling switches, and door zone switch plus the up and down leveling switches. If three switches are used, the system successively receives "up leveling signal → door zone signal → down leveling signal" during up running and "down leveling signal → door zone signal → up leveling signal" during down running. If two switches are used, the system successively receives "up leveling signal

Parameter	Name	Range	Default	Unit	Property

→ down leveling signal" during up running and "down leveling signal → up leveling signal" during down running. If the leveling signal is abnormal (stuck or disconnected), the system reports E22.

04: Safety circuit feedback

05: Door lock circuit feedback

29: Safety circuit input 2

31: Door lock circuit 2 feedback input

The safety circuit is an important guarantee of safe and reliable elevator running, and the door lock circuit ensures that the landing door and car door have been closed when the elevator starts to run. Active feedback signals from the safety circuit and door lock circuit are necessary to elevator running. It is recommended to set these signals to NO inputs. If they are set to NC inputs, the system considers the signal input active when the NC signal input is not connected. In this case, the actual state of the safety circuit cannot be detected, which may cause safety risks.

06: RUN contactor output feedback input

07: Brake output feedback input

26: Brake travel switch 1 feedback input

The system sends commands to the RUN and brake contactors and automatically detects the feedback. If the commands and the feedback are inconsistent, the system reports a fault.

08: Inspection signal input

09: Inspection up signal input

10: Inspection down signal input

11: Fire emergency signal input

When the fire emergency switch is turned on, the elevator enters the fire emergency state, and immediately cancels the registered hall calls and car calls. The elevator directly runs to the fire emergency floor and automatically opens the door after arrival.

12: Up limit signal input

13: Down limit signal input

When the elevator runs over the leveling position of the terminal floor but does not stop, the up limit signal and down limit signal are used as the stop switches at the terminal floors to prevent any runaway elevator operation.

14: Overload NO input

During normal use, the elevator enters the overload state when the elevator load exceeds 110% of the rated load. In this case, the overload buzzer sounds, the overload indicator in the car lights up, and the elevator doors keep open. The overload signal becomes inactive after the door lock is closed. If the running with 110% of the rated load is required during inspection, user can set P17-06 to 1 to allow overload running (Note that this function has potential safety risks and use it with caution).

Parameter	Name	Range	Default	Unit	Property

It is recommended that the overload signal be set to NC input. If it is set to NO input, the system cannot detect the overload situations where the overload switch is damaged or disconnected. In this case, the elevator running may cause safety hazards. Similarly, it is also recommended to set the up limit signal, down limit signal, and slowdown signals to NC inputs.

15: Full-load NO input

When the elevator load is 80% to 110% of the rated load, the HCB displays the full-load state and the running elevator does not respond to hall calls.

16: Up level-1 slowdown input

17: Down level-1 slowdown input

18: Up level-2 slowdown input

19: Down level-2 slowdown input

20: Up level-3 slowdown input

21: Down level-3 slowdown input

These parameters are used to set corresponding input terminals to slowdown switch signals. The slowdown signals are used to enable the elevator to stop at the slowdown speed when the car position is abnormal, which is an important method to guarantee elevator safety. The Smile3000 system automatically records the positions of the switches in group P3 during shaft auto-tuning.

22: Shorting door lock circuit output feedback input

It is the door lock shorting feedback signal when the advance door opening module or re-leveling at door open function of elevators is enabled. This is to ensure safe elevator running.

23: Firefighter running input

It is for firefighter switch signal input and is used to enable the firefighter operation. After the elevator returns to the fire emergency floor, the elevator enters the firefighter running state if the firefighter signal is active.

24: Door operator 1 light curtain input

25: Door operator 2 light curtain input

They are used to detect the light curtain signals of door 1 and door 2 (if the elevator has two doors).

27: UPS (Emergency evacuation signal at power failure)

If the signal is active, it indicates that the elevator is running for emergency evacuation at power failure.

28: Elevator lock NO input

If this signal is active, the elevator enters the lock state, returns to the elevator lock floor and does not respond to any calls until the signal becomes inactive. It has the same function as the hall call elevator lock signal (For details, see P09-00 and P09-01).

30: Synchronous motor shorting motor stator feedback input

Parameter	Name	Range	Default	Unit	Property
The shorting motor stator contactor protects the elevator from falling at high speed in the case of brake failure. This signal is used to monitor whether the shorting motor stator contactor is normal. 32: Brake 2 output feedback input 33: Door operator 1 safety edge input 34: Door operator 2 safety edge input They are used to detect the safety edge signal state of door 1 and door 2 (if the elevator has two doors). 35: Reserved 36: Earthquake signal input If this signal remains active for more than 2s, the elevator enters the earthquake stop state, stops at the nearest landing floor and opens the door. Then the elevator closes the door, does not respond to hall calls and stops running before the earthquake signal becomes inactive. 37: Rear door forbidden input If there are two doors, this signal is used to prohibit the use of the rear door. 38: Light-load input This signal is used for nuisance judgment when the anti-nuisance function is enabled. If P10-05 bit2 is set to 1, the light-load switch is used for nuisance judgment. The load below 30% of the rated load is regarded as a light-load. 39: Half-load input It is mainly used for judgment of the emergency running direction at power failure. 40: Fire emergency floor switchover input The Smile3000 controller supports two fire emergency floors. By default, the elevator stops at fire emergency floor 1 in fire emergency state. If this signal is active, the elevator stops at fire emergency floor 2 in fire emergency state. 41: Dummy floor input The dummy floor signal is required if the distance between two adjacent floors of the elevator in the shaft is so large that the running time exceeds the minimum values set in P16-02 and D01-25. 42: Motor overheat input 43: ARD fault input 44: Door 1 open input 45: Door 2 open input 46: Brake travel switch 2 feedback input 47: External fault input External fault input is used to notify the controller of stop when other modules in the control cabinet					

Parameter	Name	Range	Default	Unit	Property

such as the external braking unit are faulty.

48: Terminal floor signal input

The terminal floor signal is used with level-1 slowdown to determine the terminal floor position when some terminal floors are short.

49: Door lock 1 shorting input

Door lock 1 shorting detection is used to detect any door lock 1 short circuit faults.

50: Door lock 2 shorting input

Door lock 2 shorting detection is used to detect any door lock 2 short circuit faults.

51: Reserved

52: EEO (Emergency Electrical Operation)

a. When 08/108 (inspection signal) is allocated to input terminal X, the inspection switch signal is transmitted to the system in the DI form. When 08/108 is not allocated to input terminal X, the inspection switch signal is transmitted to the system through CAN communication.

b. When the inspection or EEO switch is active, the elevator enters the inspection or EEO state, and the system cancels all automatic running including the automatic door operations. When the up/down signal is active, the elevator runs at the speed set in P03-06 in the EEO state and at the speed set in P03-01 in the inspection state.

c. The inspection signal overrides the EEO signal. When both signals are active, the elevator runs in the inspection state.

53: Reserved

54: Door lock bypass input

It is the signal input in the event of the bypassed door lock. After the signal becomes active, the system enters the inspection state.

55: Reserved

56: Rope gripper feedback input

Function "88" (rope gripper feedback input) is added to the MCB.

(1) In the normal or inspection state, the elevator reports E67 and stops running immediately when the rope gripper feedback signal is inactive. At the same time, the system detects whether the UCMP fault occurs. If the car moves unexpectedly, the elevator reports E65 which overrides E67.

(2) Fault E67 reset: Reset E67 by pressing the RES/STOP key on the operating panel, setting F-2 to 1 through the MCB keypad, or making the rope gripper feedback signal remain active for 1 s or above. If the roper gripper feedback signal is inactive after the fault reset, the elevator continues to report E67.

57: Electric brake release input

58: Forced electric brake release input

Parameter	Name	Range	Default	Unit	Property
59: Reserved 60: KAM feedback input 61: Maintenance switch input 62: Integrated shorting motor stator contactor online input					

Parameter	Name	Range	Default	Unit	Property
P06-25	X25 function selection	0 to 8	4	-	×
P06-26	X26 function selection		7	-	×
P06-27	X27 function selection		8	-	×
P06-28	X28 function selection		5	-	×
P06-25 to P06-28 are used to set high-voltage detection input terminals X25 to X28. The possible values to be set: 0: Inactive 1 to 3: Reserved 4: Safety circuit signal 5: Door lock circuit signal 6: Door lock circuit signal 2 7: Door lock 1 shorting detection 8: Door lock 2 shorting detection					

Parameter	Name	Range	Default	Unit	Property
P06-29	X29 function selection	00 to 199 (NO: 0 to 99) (NC=NO+100) Same as X1 to X24	0	-	×
P06-30	X30 function selection		0	-	×
P06-31	X31 function selection		114	-	×
P06-32	X32 function selection		0	-	×
P06-33	X33 function selection		11	-	×
P06-34	X34 function selection		36	-	×
The settings of X29 to X34 are the same as X1 to X24.					

Parameter	Name	Range	Default	Unit	Property
P06-35	Y1 function selection	0 to 31	12	-	×
P06-36	Y2 function selection		1	-	×
P06-37	Y3 function selection		2	-	×
P06-38	Y4 function selection		24	-	×
P06-39	Y5 function selection		28	-	×
P06-40	Y6 function selection		27	-	×
P06-41	Y7 function selection		3	-	×
P06-42	Y8 function selection		4	-	×
P06-43	Y9 function selection		0	-	×
P06-44	Y10 function selection		23	-	×

These parameters are used to set relay output terminals Y1 to Y6.

00: Inactive

01: RUN contactor output

02: Brake contactor output

03: Shorting door lock circuit contactor output

The system relays control the opening and closing of the circuit contacts.

04: Fire emergency floor arrival signal

In the fire emergency state, the system sends the feedback signal for monitoring after the elevator returns to the fire emergency floor and reaches the door open limit.

05: Door operator 1 open

06: Door operator 1 close

07: Door operator 2 open

08: Door operator 2 close

The terminal parameters are used for the opening and closing of door 1 or 2.

09: Brake and RUN contactors normal

When the brake and RUN contactors operate properly (when E36 or E37 is triggered, it indicates that the brake contactor or RUN contactor is abnormal), the system sends a feedback signal for monitoring.

10: Fault state output

The fault state is output when the system is in the level 3, level 4 or level 5 fault state.

Parameter	Name	Range	Default	Unit	Property

11: Running state output

The controller has output when it is running.

12: Synchronous motor self-locking output

When the shorting motor stator contactor is applied in the synchronous motor, the terminal is used for the opening and closing of the contactor.

13: Emergency evacuation automatic switchover

After the main power supply is disconnected, the controller outputs an emergency evacuation automatic switchover signal when detecting that the bus voltage declines to a certain value. The battery is used to power up the elevator to implement emergency evacuation.

Note:

Only Y6/M6 can be used when the relay needs to be driven by the residual power of the controller after the external power supply is cut off.

14: Controller normal

The terminal has output when the system operates properly.

15: Emergency buzzer output

The terminal has output when the system is in the emergency evacuation running state. The buzzer tweets to prompt.

16: High-voltage startup of brake

This signal is used for the brake that keeps the release state with voltage reduction. The terminal with this signal keeps the output for 4 s to release the brake, and then the voltage is reduced to keep the brake release state.

17: Elevator up signal

The terminal with the signal has output when the elevator runs in the up direction.

18: Lighting/Fan output

It is used for the lighting/fan running output, the same as the energy-saving control output of the CTB.

19: Medical sterilization output

It is used to control the medical sterilization output, such as the ultraviolet sterilizing lamp. After the elevator stops running and the lighting/fan stops operating, the medical sterilization output is started.

20: Non-door zone stop

The terminal with this signal has output when the elevator stops at the non-door zone.

21: Electromagnetic lock control output

It is used to control the applying and releasing of the electromagnetic lock in the case of manually

Parameter	Name	Range	Default	Unit	Property
operated door. 22: Non-service state output It is output when the elevator is in the non-service state and cannot respond to hall calls. 23: Emergency evacuation completed output The output is used to notify that ARD emergency evacuation is completed. 24: Brake contactor 2 output 25: Rope gripper reset 26: Destination floor arrival output 27: Electric brake release output 28: KAM output 29: Speed limiter test output 30: Speed limiter reset output					

9.2.8 P07: CTB terminal parameters

Parameter	Name	Range	Default	Unit	Property
P07-01	CTB input X1	0 to 199	103	-	×
P07-02	CTB input X2		105	-	×
P07-03	CTB input X3		112	-	×
P07-04	CTB input X4		101	-	×
P07-05	CTB input X5		117	-	×
P07-06	CTB input X6		104	-	×
P07-07	CTB input X7		106	-	×
P07-08	CTB input X8		116	-	×
P07-09	CTB input X9		102	-	×
P07-10	CTB input X10		118	-	×
P07-11	CTB input X11		119	-	×
P07-12	CTB input X12		113	-	×
P07-13	CTB input X13		14	-	×

Parameter	Name	Range	Default	Unit	Property
P07-14	CTB input X14		15	-	×
P07-15	CTB input X15		120	-	×
P07-16	CTB input X16		121	-	×
P07-17	CTB input X17		122	-	×
P07-18	CTB input X18		123	-	×
P07-19	CTB input X19		10	-	×
P07-20	CTB input X20		11	-	×
P07-21	CTB input X21		108	-	×
P07-22	CTB input X22		9	-	×
P07-23	CTB input X23		0	-	×
P07-24	CTB input X24		0	-	×

These parameters are used to set CTB input X terminals. The NO settings are shown below (NO: 0 to 99; NC: NO+100):

0: Inactive

1: Light curtain 1

2: Light curtain 2

3: Door open limit 1

4: Door open limit 2

5: Door close limit 1

6: Door close limit 2

7: Full-load input

8: Overload input

9: Light-load input

10: Up leveling

11: Down leveling

12: Front door operator overheat

13: Inspection

14: Inspection up

15: Inspection down

16: Rear door operator overheat

Parameter	Name	Range	Default	Unit	Property
17: Front door safety edge					
18: Rear door safety edge					
19: Fan motor overheat protection					
19: Motor overheat protection					
20: Up level-1 slowdown NO input					
21: Down level-1 slowdown NO input					
22: Up level-2 slowdown NO input					
23: Down level-2 slowdown NO input					

Parameter	Name	Range	Default	Unit	Property
P07-25	CTB output Y1	0 to 31	1	-	×
P07-26	CTB output Y2		2	-	×
P07-27	CTB output Y3		3	-	×
P07-28	CTB output Y4		4	-	×
P07-29	CTB output Y5		5	-	×
P07-30	CTB output Y6		6	-	×
P07-31	CTB output Y7		7	-	×
P07-32	CTB output Y8		8	-	×
P07-33	CTB output Y9		11	-	×
P07-34	CTB output Y10		16	-	×
P07-35	CTB output Y11		15	-	×
P07-36	CTB output Y12		0	-	×
P07-37	CTB output Y13		0	-	×
P07-38	CTB output Y14		0	-	×
P07-39	CTB output Y15		0	-	×
P07-40	CTB output Y16		0	-	×

Parameter	Name	Range	Default	Unit	Property
0: Reserved 1: Door 1 open 2: Door 1 close 3: Forced door 1 close 4: Door 2 open 5: Door 2 close 6: Forced door 2 close 7: Up arrival gong 8: Down arrival gong 9: Arrival gong 10: Fault 11: Sound and light alarm 12, 13: Reserved 14: Forced output 15: Fan 16: Lighting 17: Run enable 18: Elevator non-overspeed output (output disabled during elevator overspeed running) 19: Automatic dial-out (it will be output if the elevator stops and remains in a non-door zone for over 60 seconds during non-inspection period)					

9.2.9 P08: Door operator parameters

Parameter	Name	Range	Default	Unit	Property
P08-00	Number of door operators	1 to 2	1	-	×
It is used to set the number of door operators. Set this parameter based on actual conditions. Set it to 1 for single door and 2 for through-type door.					

Parameter	Name	Range	Default	Unit	Property
P08-01	Service floor 1 of door	0 to 65535	65535	-	○

Parameter	Name	Range	Default	Unit	Property
	operator 1				
P08-02	Service floor 2 of door operator 1	0 to 65535	65535	-	○
P08-03	Service floor 3 of door operator 1	0 to 65535	65535	-	○
P08-04	Service floor 1 of door operator 2	0 to 65535	65535	-	○
P08-05	Service floor 2 of door operator 2	0 to 65535	65535	-	○
P08-06	Service floor 3 of door operator 2	0 to 65535	65535	-	○

These parameters are used to set the service floors of door operator 1 and door operator 2:

Service floor 1 corresponds to floors 1 to 16.

Service floor 2 corresponds to floors 17 to 32.

Service floor 3 corresponds to floors 33 to 48.

These parameters are used to set the service floors of door operators 1 and 2. The setting of door operator service floors is the same as that of service floors set by P11-15.

Parameter	Name	Range	Default	Unit	Property
P08-07	Door open protection time	5 to 99	10	s	○
P08-08	Door close protection time	5 to 99	15	s	○

P08-07 is used to set the door open protection time.

The door reopens if no door open limit signal is received after reaching the time value set in P08-07. When the door open/close times reach the value set in P08-09, the system reports fault E48.

P08-08 is used to set the door close protection time.

The door opens and closes again if no door close limit signal is received after reaching the time value set in P08-08. When the door open/close times reach the value set in P08-09, the system reports door close fault E49.

Parameter	Name	Range	Default	Unit	Property
P08-09	Door open/close times	0 to 20	0	-	○
P08-10	Door state of standby elevator	0 to 2	0	-	○

P08-09 is used to set the door re-open/re-close times allowed when door open/close is abnormal.

P08-10 is used to set the door state when the elevator is in stop and waiting state.

The possible values to be set:

0: Normal door close at main floor

1: Waiting with door open at main floor

2: Waiting with door open at each floor

Parameter	Name	Range	Default	Unit	Property
P08-11	Door open holding time for hall call	1 to 1000	5	s	○
P08-12	Door open holding time for car call	1 to 1000	3	s	○
P08-13	Door open holding time at main floor	1 to 1000	10	s	○
P08-14	Duration of door open holding time delay	10 to 1000	30	s	○

P08-11 is used to set the door open holding time when there is a hall call. The elevator closes the door immediately after receiving a door close command.

P08-12 is used to set the door open holding time when there is a car call. The elevator closes the door immediately after receiving a door close command.

P08-13 is used to set the door open holding time after the elevator arrives at the main floor. The elevator closes the door immediately after receiving a door close command.

P08-14 is used to set the door open holding time when there is door open delay input. The elevator closes the door immediately after receiving a door close command.

Parameter	Name	Range	Default	Unit	Property
P08-15	Special door open holding time	10 to 1000	30	s	○

Parameter	Name	Range	Default	Unit	Property
P08-16	Manually operated door open limit delay	1 to 60	5	s	○
P08-17	Waiting time for forced door close	5 to 180	120	s	○

P08-15 is used to set the door open holding time when there is a disability call.

P08-16 is used to set the door open limit delay in the case of manually operated door. This parameter is valid when the manually operated door function is used.

P08-17 is used to set the holding time before forced door close is implemented.

If the forced door close function is enabled, the system enters the forced door close state and sends a signal when there is no door close signal after the time set in this parameter is reached.

Parameter	Name	Range	Default	Unit	Property
P08-18	Manually operated door lock waiting time	0 to 60	0	s	×

This parameter is used to set interval time from door lock circuit disconnection to the next running startup after re-connection.

Parameter	Name	Range	Default	Unit	Property
P08-19	Arrival gong output delay	0 to 1000	0	ms	×

When the value of this parameter is greater than 10 and the car display is switched over to the destination floor, the system outputs the arrival gong after reaching the time value set in this parameter. If the value is smaller than 10, the system outputs the arrival gong at stop.

Parameter	Name	Range	Default	Unit	Property
P08-20	Through-type door control selection	0 to 3	0	-	×

P08-00 is used to set the number of door operators based on actual conditions.

Set P08-00 to 1 for single door and 2 for through-type door.

P08-20 is used to set the through-type door control mode. The possible values to be set:

0: Simultaneous control for door open/close

Parameter	Name	Range	Default	Unit	Property
1: Independent control for door open/close for hall calls, and simultaneous control for car calls 2: Independent control for door open/close for hall calls, and manual control for car calls 3: Independent control for hall calls and car calls					

9.2.10 P09: Hall call parameters

Parameter	Name	Range	Default	Unit	Property
P09-00	HCB-JP1 input	0 to 63	1	-	×
P09-01	HCB-JP2 input		2	-	×
P09-00 and P09-01 are the input parameters of pins 2 and 3 of JP1 and JP2 on the HCB. The settings are effective for all HCBs. 0: Reserved 1: Elevator lock signal 2: Fire emergency signal 3: Current floor forbidden 4: VIP signal 5: Security signal 6: Door close button input 7: Fire emergency floor 2 signal input					

Parameter	Name	Range	Default	Unit	Property
P09-02	HCB-JP1 output	0 to 15	1	-	×
P09-03	HCB-JP2 output		2	-	×
P09-02 and P09-03 are the output parameters of pins 1 and 4 of JP1 and JP2 on the HCB. The settings are effective for all HCBs. 0: Inactive 1: Up arrival indicator 2: Down arrival indicator 3: Fault signal 4: Non-door zone stop					

Parameter	Name	Range	Default	Unit	Property
5: Non-service state output 6: Door close button output					

Parameter	Name	Range	Default	Unit	Property
P09-04	Start address of hall call auxiliary command	0 to 40	0	-	×
P09-04 is used to set the HCB start address of the rear door for through-type door applications. HCB address of rear door = HCB address of front door at the same floor + P09-04.					

Parameter	Name	Range	Default	Unit	Property
P09-05	Hall call protocol selection	0 to 65535	0	-	○
0: Standard 1: VL protocol 2: ML800 (CAN1 communication) 3: Inovance protocol 4: Jiangling protocol 5: Guangri protocol (GIIHG)					

Parameter	Name	Range	Default	Unit	Property
P09-06	Hall call parameter setting	0 to 65535	0	-	○
P09-07	Hall call address verification	0 to 65535	0	-	○

9.2.11 P10: Load cell parameters

Parameter	Name	Range	Default	Unit	Property
P10-00	Load cell input selection	0 to 4	1	-	×

Parameter	Name	Range	Default	Unit	Property
It is used to select the channel of load cell signals. When a load cell device is used, set this parameter correctly first. The values are as follows: 0: Inactive 1: Car call digital input 2: Car call analog input 3: MCB analog input 4: MCB digital input					

Parameter	Name	Range	Default	Unit	Property
P10-01	Car load ratio during load cell auto-tuning	0 to 100	0	%	×
To perform load cell auto-tuning, do as follows: (1) Ensure that P12-00 is set to 0 and P10-00 (Load cell input selection) is set to 2 (Car call analog input) or 3 (MCB analog input) to make the system allow load cell auto-tuning. (2) Stop the elevator at any floor, with the car in the no-load state. Set P10-01 to 0 and press ENTER DATA. (3) Put N% load in the car. Then set P10-01 to N and press ENTER DATA. For example, if user puts 500 kg load in the elevator with rated load of 1000 kg, set P10-01 to 50. After the load-cell auto-tuning is completed, the corresponding no-load and full-load data will be recorded in P10-03 and P10-04. User can also manually input the data as needed.					

Parameter	Name	Range	Default	Unit	Property
P10-02	Current car load	0 to 255	0	-	*
P10-02 is a read-only parameter and reflects the load condition in the car. The value is sampled by Smile3000 by using a load cell to judge overload or full-load, or calculate the torque current for load cell pre-torque compensation.					

Parameter	Name	Range	Default	Unit	Property
P10-03	No-load measured by load cell	0 to 255	0	-	×
P10-04	Full-load measured by load cell	0 to 255	100	-	×

Parameter	Name	Range	Default	Unit	Property
P10-03 and P10-04 set the no-load and full-load conditions in the car. They are AD sampling values.					

Parameter	Name	Range	Default	Unit	Property
P10-05	Anti-nuisance function	0 to 65535	0	-	○

It is used to set the conditions to judge nuisance. The possible values to be set:

Bit0: Nuisance judged by load cell. A load cell is required. The system judges whether nuisance exists by comparing the load cell data and the number of car calls.

Bit1: Nuisance judged by light curtain. The system determines that nuisance exists when the light curtain does not act after the elevator stops at destination floor for three consecutive times.

Bit2: Nuisance judged by light-load signal. If the light-load signal is active, the system determines that nuisance exists when the number of car calls is greater than a certain value.

When the system determines that the elevator is in the nuisance state, it cancels all car calls. In this case, car calls need to be registered again.

9.2.12 P11: Basic elevator parameters

Parameter	Name	Range	Default	Unit	Property
P11-00	Leveling adjustment	0 to 60	30	mm	×

P11-00 is used to adjust the car landing position at all floors.

Decrease this parameter if over-leveling occurs at every floor, and increase this parameter if under-leveling occurs at every floor. For inaccuracy at only single floor, adjust the leveling plate or group P20 parameters. Smile3000 is equipped with advanced distance control algorithms, and uses multiple methods to ensure the landing accuracy. Generally, user does not need to adjust the parameter.

Parameter	Name	Range	Default	Unit	Property
P11-01	Current floor	P11-07 to P11-06	1	-	×

P11-01 indicates the current floor of the elevator car.

The system automatically changes the value of this parameter during running and corrects it at leveling position (door open limit) after the up slowdown and down slowdown switches act. At non-bottom floor and top-floor leveling, user can also manually modify this parameter, but the value must be consistent with the actual current floor.

Parameter	Name	Range	Default	Unit	Property
P11-02	High bits of current floor position	0 to 65535	0	Pulses	○
P11-03	Low bits of current floor position	0 to 65535	0	Pulses	○
P11-02 and P11-03 indicate the absolute pulses of the current car position relative to the leveling of the bottom floor. The position data of Smile3000 in the shaft is recorded in pulses. Each position is expressed by a 32-bit binary number, where the high 16 bits indicate the high digit place of the floor position, and the low 16 bits indicate the low digit place of the floor position.					

Parameter	Name	Range	Default	Unit	Property
P11-04	Leveling plate length 1	0 to 65535	0	Pulses	×
P11-05	Leveling plate length 2	0 to 65535	0	Pulses	×
P11-04 indicates the pulses corresponding to the leveling plate length. P11-05 indicates the distances between the up and down leveling switches and two ends of the leveling plate and the pulses. These two parameters are automatically recorded during shaft auto-tuning.					

Parameter	Name	Range	Default	Unit	Property
P11-06	Top floor of elevator	P11-07 to 48	9	-	×
P11-07	Bottom floor of elevator	1 to P11-06	1	-	×
The parameters are to set the top floor and bottom floor of the elevator, determined by the number of leveling plates installed.					

Parameter	Name	Range	Default	Unit	Property
P11-08	Parking floor for idle elevator	P11-07 to P11-06	1	-	×
When the idle time of the elevator exceeds the value set in P16-00, the elevator returns to the parking floor set in P11-08 automatically.					

Parameter	Name	Range	Default	Unit	Property
P11-09	Fire emergency floor	P11-07 to P11-06	1	-	×
When the elevator enters the state of returning to fire emergency floor, the elevator will return to the set floor.					

Parameter	Name	Range	Default	Unit	Property
P11-10	Fire emergency floor 2	0 to P11-06	0	-	×
This parameter is used to set fire emergency floor 2. After the fire emergency floor switchover signal set on the MCB is active, the elevator enters the fire emergency running state and returns to this fire emergency floor.					

Parameter	Name	Range	Default	Unit	Property
P11-11	Parking floor for elevator lockout	P11-07 to P11-06	1	-	×
After entering the elevator lock state, the elevator returns to the floor set in P11-11. When the elevator lock switch operates or it is the time for preset elevator lock in the running state, the elevator clears all hall calls registered, responds to all car calls registered and returns to the elevator lock floor. After arrival, it stops running and turns off the lighting and fan in the car. The hall call is not displayed after door close.					

Parameter	Name	Range	Default	Unit	Property
P11-12	VIP floor	0 to P11-06	0	-	×
It is used to set the VIP floor. See "10.9 VIP running function".					

Parameter	Name	Range	Default	Unit	Property
P11-13	Emergency evacuation parking floor	0 to P11-06	0	s	×
If P11-54 Bit2 is set to 1 (Stop at the main floor), the elevator stops at the emergency evacuation parking floor set in P11-13.					

Parameter	Name	Range	Default	Unit	Property
P11-14	Security floor	0 to P11-06	0	-	×

P11-14 is used to set the security floor of the elevator.

During the night security period or when the security signal is active, the elevator runs to the security floor first. It opens and closes the door once every time before it goes to the destination floor. Enter the security state in either of the following methods:

- Set P09-00 or P09-01 to 5. When the security signal is active, the elevator enters the security state.
- The night security floor function is enabled (P12-09 Bit5 = 1) and the elevator enters the security state from 22: 00 to 6:00 .

Parameter	Name	Range	Default	Unit	Property
P11-15	Service floor 1	0 to 65535 (floors 1 to 16)	65535	-	×
P11-16	Service floor 2	0 to 65535 (floors 17 to 32)	65535	-	×
P11-17	Service floor 3	0 to 65535 (floors 33 to 48)	65535	-	×

These parameters are used to set the service floors among floors 1 to 48.

P11-15 corresponds to floors 1 to 16, P11-16 floors 17 to 32 and P11-17 floors 33 to 48.

The following part takes P11-15 as an example to describe how to set the service floors.

The 16 binary bits of this parameter respectively correspond to the 16 floors. If a bit is set to 1, the elevator will respond to the calls at this floor. If this bit is set to 0, the elevator will not respond to the calls at this floor.

Example: For a 16-floor elevator, if it does not respond to the calls at floors 3, 5, and 7, set Bit2, Bit4 and Bit6 to 0, and other bits to 1.

Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Binary	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	1
Decimal	1	2	0	8	0	32	0	128	256	512	1024	2048	4096	8192	16384	32768

1+2+8+32+128+256+512+1024+2048+4096+8192+16384+32768=65451

Thus, P11-15 should be set to 65451.

Parameter	Name	Range	Default	Unit	Property
The setting method for P11-16 and P11-17 is the same as that for P11-15.					

Parameter	Name	Range	Default	Unit	Property
P11-18	Number of elevators in group control	1 to 8	1	-	×
P11-19	Elevator serial number	1 to 8	1	-	×
P11-18 and P11-19 are used to set the number of elevators and elevator serial number in parallel/ group control mode.					

Parameter	Name	Range	Default	Unit	Property
P11-20	Floor offset in parallel control	0 to 40	0	-	×
It is used when the bottom floors of two elevators in parallel control are inconsistent. When this function is enabled, the parallel control can be implemented directly. User need not adjust the top and bottom floors of the two elevators and perform shaft auto-tuning again.					

Parameter	Name	Range	Default	Unit	Property
P11-21	Program selection	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
P11-22	Leveling sensor delay	10 to 50	14	ms	×
It indicates the delay time from the moment the leveling switch acts to the moment the leveling signal becomes active. It requires no modification by user.					

Parameter	Name	Range	Default	Unit	Property
P11-23	Collective selective mode	0 to 2	0	-	×
It is used to set the collective selective mode of the control system. The possible values to be set: 0: Full collective selective: The elevator responds to both up and down hall calls. 1: Down collective selective: The elevator only responds to down hall calls.					

Parameter	Name	Range	Default	Unit	Property
2: Up collective selective: The elevator only responds to up hall calls.					

Parameter	Name	Range	Default	Unit	Property
P11-24	Start time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	×
P11-25	End time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	×
P11-26	Start time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	×
P11-27	End time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	×
P11-24 to P11-27 define the time periods of down collective selective 1 and down collective selective 2, during which the elevator responds to only downward calls.					


Caution

To enable the peak service of down collective selective control, set P12-09 Bit6 to 1.

Parameter	Name	Range	Default	Unit	Property
P11-28	Start time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	×
P11-29	End time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	×
P11-30	Service floor 1 of time-based floor service 1	0 to 65535	65535	-	×
P11-31	Service floor 2 of time-based floor service 1	0 to 65535	65535	-	×
P11-32	Service floor 3 of time-based floor service 1	0 to 65535	65535	-	×
P11-33	Start time of time-based floor service 2	00.00 to 23.59	00.00	HH.MM	×

Parameter	Name	Range	Default	Unit	Property
P11-34	End time of time-based floor service 2	00.00 to 23.59	00.00	HH.MM	×
P11-35	Service floor 1 of time-based floor service 2	0 to 65535	65535	-	×
P11-36	Service floor 2 of time-based floor service 2	0 to 65535	65535	-	×
P11-37	Service floor 3 of time-based floor service 2	0 to 65535	65535	-	×

The above parameters set the time range and service floors of two groups of time-based floor services.

Service floors 1, 2 and 3 correspond to floors 1 to 16, floors 17 to 32 and floors 33 to 48 respectively. For example, in the time period of time-based floor service 1 (set by P11-28 and P11-29), the elevator responds to the service floors 1, 2 and 3 (set by P11-30, P11-31 and P11-32) regardless of the service floors set by P11-15, P11-16 and P11-17. The setting of time-based service floors is the same as that of service floors in P11-15.

Caution

To enable the time-based floor service, set P12-09 Bit8 to 1. Then, user can set the time range and service of floors.

Parameter	Name	Range	Default	Unit	Property
P11-38	Peak 1 start time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-39	Peak 1 end time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-40	Peak 1 floor for parallel/group control	P11-07 to P11-06	1	-	×
P11-41	Peak 2 start time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-42	Peak 2 end time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-43	Peak 2 floor for	P11-07 to P11-06	1	-	×

Parameter	Name	Range	Default	Unit	Property
	parallel/group control				
P11-38, P11-39, and P11-40 are used to set peak service time period 1 and corresponding service floors for parallel/group control. P11-41, P11-42, and P11-43 are used to set peak service time period 2 and corresponding service floors for parallel/group control. If there are more than three car calls from the peak floor during peak periods, the elevator enters the peak service state. In this case, all the car calls from the peak floor are active. The elevator returns to this floor when it sits idle.					

Caution

To enable the peak service for parallel/group control, set bit7 of P12-09 to 1. To disable this function, set Bit7 of P12-09 to 0.

Parameter	Name	Range	Default	Unit	Property
P11-47	Elevator lock start time	00.00 to 23.59	00.00	HH.MM	×
P11-48	Elevator lock end time	00.00 to 23.59	00.00	HH.MM	×
P11-47 and P11-48 are used to set the elevator lock time period, during which the elevator is in lock state just as what the elevator key switch can do.					

Caution

The elevator can switch to the lock state in the following two ways:

① Set P11-49 Bit5 to 1 to enable the timed elevator lock function. P11-47 and P11-48 set the elevator lock time period when the system will automatically lock the elevator.

② Set P09-00 to 1 to activate the hall elevator lock key switch

Parameter	Name	Range	Default	Unit	Property
P11-49	Program control selection 1	0 to 65535	0	-	×
P11-50	Program control selection 2	0 to 65535	0	-	×
P11-51	Program control selection	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
	3				
P11-52	Attendant function selection	0 to 65535	128	-	×
P11-53	Fire emergency function selection	0 to 65535	16456	-	×
P11-54	Emergency evacuation selection	0 to 65535	16384	-	×
P11-55	VIP function selection	0 to 65535	0	-	×
P11-56	Blinking advance time	0.0 to 15.0	1.0	s	○
P11-57	CAN communication setting	0 to 65535	0	-	○
P11-58	Soft limit position setting	0 to 65535	0	-	○
P11-59	High bit of current pulse	0 to 65535	0	-	*
P11-60	Low bit of current pulse	0 to 65535	0	-	*

9.2.13 P13: Keypad setting parameters

Parameter	Name	Range	Default	Unit	Property
P13-00	Keypad display selection	0 to 3	3	-	×
The Smile3000 controller has three LEDs on the MCB. User can change the display content through the setting of this parameter. The possible values to be set: 0: Reverse display of physical floor 1: Forward display of physical floor 2: Reverse display of hall call floor 3: Forward display of hall call floor					

Parameter	Name	Range	Default	Unit	Property
P13-01	Parameter display in the running state	1 to 65535	65535	-	×

Parameter	Name	Range	Default	Unit	Property

It is used to set the running parameters displayed on the operating panel when the elevator is running. P13-01 includes 16 binary bits, corresponding to 16 parameters that can be displayed during running. User can press the Shift key to view different parameters. Every parameter is controlled by a binary bit. If a bit is set to 1, the parameter indicated by this bit is displayed; if this bit is set to 0, the parameter is not displayed. User can modify this parameter for user's own convenience.

The correlation between the parameters and binary bits is as follows.

Binary bit	Parameter	Default
Bit0	Running speed	1
Bit1	Rated speed	1
Bit2	Bus voltage	1
Bit3	Output voltage	1
Bit4	Output current	1
Bit5	Output frequency	1
Bit6	High bits of input terminals	1
Bit7	Low bits of input terminals	1
Bit8	Output terminals	1
Bit9	Current floor	1
Bit10	Current position	1
Bit11	Car load	1
Bit12	CTB input state	1
Bit13	CTB output state	1
Bit14	System state	1
Bit15	Pre-torque current	1

The method of viewing P13-01 is as follows:

In the running state, P13-01 is displayed as a decimal value. User can press the Shift key to view the parameter indicated by each bit circularly.

Parameter	Name	Range	Default	Unit	Property
P13-02	Parameter display in the stop state	1 to 65535	65535	-	×

It is used to set the status parameters displayed on the operating panel when the elevator is at stop. P13-02 includes 16 binary bits, corresponding to 16 parameters that can be displayed at stop.

The correlation between the parameters and binary bits is as follows.

Binary bit	Parameter	Default	Binary bit	Parameter	Default
Bit0	Rated speed	1	Bit8	Slowdown distance at rated speed	1
Bit1	Bus voltage	1	Bit9	CTB input state	1
Bit2	Low bits of input terminals	1	Bit10	CTB output state	1
Bit3	High bits of input terminals	1	Bit11	System state	1
Bit4	Output terminals	1	Bit12	Reserved	1
Bit5	Current floor	1	Bit13	Reserved	1
Bit6	Current position	1	Bit14	Reserved	1
Bit7	Car load	1	Bit15	Reserved	1

The method of setting and viewing P13-02 is similar to that of P13-01.

The running and stop parameters of the Smile3000 controller are the important references for engineers to perform commissioning on site. The parameters are described as follows.

Running speed: indicates the actual running speed of the elevator (m/s). Its peak value is the maximum elevator speed (P00-03).

Rated speed: indicates the allowed maximum running speed (m/s) in the current elevator state.

Bus voltage: indicates the DC bus voltage (V).

Output voltage: indicates the effective equivalent voltage of the PWM wave output (V).

Output current: indicates the effective current as the controller drives the motor (A).

Output frequency: indicates the actual frequency of the running motor (Hz). It is proportional to the running speed.

9.2.14 P15: Communication parameters

Parameter	Name	Range	Default	Unit	Property
P15-00	Baud rate setting	0: 9600 1: 38400	1	-	×
P15-02	Local address	0 to 127 (0: broadcast address)	1	-	×
P15-03	Response delay	0 to 20	0	ms	×
P15-04	Communication timeout	0 to 60	0	s	×

These RS232 serial port communication parameters are used for host controller monitoring software communication.

P15-00 specifies the baud rate for serial communication.

P15-02 specifies the address of the controller. The setting of these two parameters must be consistent with the setting of the serial port parameters.

P15-03 specifies the delay for the controller to send data by means of the serial port.

P15-04 specifies the communication timeout of the serial port. Transmission of each frame must be completed within the time set in P15-04. Otherwise, a communication fault occurs.

Parameter	Name	Range	Default	Unit	Property
P15-05	Re-leveling stop delay	0.00 to 2.00	0.00	s	×

P15-05 is used to set the re-leveling stop delay. During re-leveling, the elevator decelerates to stop after this delay timed from the moment it receives the leveling signal.

Parameter	Name	Range	Default	Unit	Property
P15-07	Host controller setting	0 to 65535	0	-	○
P15-08	Local log setting	0 to 65535	0	-	×

9.2.15 P16: Time parameters

Parameter	Name	Range	Default	Unit	Property
P16-00	Maximum idle time	0 to 240	10	min	○

Parameter	Name	Range	Default	Unit	Property
	before returning to parking floor				
It is used to set the time of idle elevator parking. When the idle time of the elevator exceeds the setting of this parameter, the elevator returns to the parking floor. 0: This function is invalid.					

Parameter	Name	Range	Default	Unit	Property
P16-01	Fan/Lighting turn-off time (car energy-saving time)	0 to 240	2	min	○
It is used to set the time that fan and lighting stays ON before being turned off automatically. If there is no running command in the automatic running state, the system turns off the fan and lighting automatically after reaching the value set in this parameter.					

Parameter	Name	Range	Default	Unit	Property
P16-02	Motor running time limit	0 to 45	45	s	×
It is used to set the running time limit of the motor. In the normal running state, if the continuous motor running time in the same direction between two adjacent floors exceeds the setting of this parameter but no leveling signal is received, the system will perform protection. This parameter is mainly used for timeout protection in the case of steel rope slipping on the traction sheave. If this parameter is set to a value smaller than 3 s, it becomes inactive.					

Parameter	Name	Range	Default	Unit	Property
P16-03	Clock: year	2010 to 2100	2011	YYYY	×
P16-04	Clock: month	1 to 12	1	MM	×
P16-05	Clock: day	1 to 31	1	DD	×
P16-06	Clock: hour	0 to 23	0	HH	×
P16-07	Clock: minute	0 to 59	0	MM	×

Parameter	Name	Range	Default	Unit	Property
These parameters are used to set the current date and time of the system. These parameters are the internal time of the control system. Time keeping is supported at power failure. User need to set the current system time correctly so that functions related to the time can be implemented.					

Parameter	Name	Range	Default	Unit	Property
P16-10	Attendant/Normal state switchover time	3 to 200	3	s	×
In the attendant state, if there is a hall call at non-current floors, the elevator automatically switches to the automatic (normal) state after the time set in P16-10 is reached. After this running is completed, the elevator returns to the attendant state (Bit2 of P11-52 must be set properly). When P16-10 is smaller than 5, the attendant/normal state switchover is disabled.					

Parameter	Name	Range	Default	Unit	Property
P16-11	Maintenance notification period	0 to 99	0	day	×

Parameter	Name	Range	Default	Unit	Property
P16-12	Motor operation protection time	0 to 99	45	-	○

9.2.16 P17: Test function parameters

The parameters in this group are provided to facilitate elevator commissioning.

Before the elevator running test at normal speed is performed, check that the shaft is unimpeded and the parameters have been set. Let the elevator run to the middle floor of the entire travel to prevent any elevator running direction error. Run the single-floor call and enter the multi-floor calls to perform commissioning. After commissioning is completed, check whether the parameters in this group are set correctly.

Parameter	Name	Range	Default	Unit	Property
P17-00	Car call floor registered	0 to P11-06	0	-	×

Parameter	Name	Range	Default	Unit	Property
P17-01	Up hall call floor registered	0 to P11-06	0	-	×
P17-02	Down hall call floor registered	0 to P11-06	0	-	×
The three parameters are used to set the destination floors during commissioning or repair. They can be used as the car call button, hall call up button, and hall call down button respectively. After the test references are set, the parameter settings remain effective until the parameters are changed to 0 or a power failure occurs.					

Parameter	Name	Range	Default	Unit	Property
P17-03	Random running times	0 to 60000	0	-	×
P17-03 is used to set the random running times of the system. Smile3000 has the random automatic running function. If the setting of P17-03 is greater than 60000, the system keeps implementing random automatic running until user sets P17-03 to 0. user can set the random running interval in P17-08.					

Parameter	Name	Range	Default	Unit	Property
P17-04	Hall call	0, 1	0	-	×
P17-04 is used to forbid or allow the hall calls. The possible values to be set: 0: Hall call allowed 1: Hall call forbidden					

Parameter	Name	Range	Default	Unit	Property
P17-05	Door open	0, 1	0	-	×
P17-05 is used to forbid or allow door open. The possible values to be set: 0: Door open allowed 1: Door open forbidden					

Caution

Continuous running of the elevator without opening the door accelerates overheating of the controller module. Long-time use in such mode may cause overheat protection, and therefore, use the function with caution.

Parameter	Name	Range	Default	Unit	Property
P17-06	Overload function	0, 1	0	-	×
P17-06 is used to set the overload function. The possible values to be set: 0: Overload forbidden 1: Overload allowed					

Caution

P17-06 is enabled only for test purpose. Once the test is completed, disable overload running immediately.

Parameter	Name	Range	Default	Unit	Property
P17-07	Limit function	0, 1	0	-	×
P17-07 is used to set limit switches. The possible values to be set: 0: Limit switch enabled 1: Limit switch disabled					

Caution

The limit switch is disabled only in the test of the final limit switch. Use the function with caution.

Parameter	Name	Range	Default	Unit	Property
P17-08	Random running interval	0 to 1000	0	s	×
P17-08 is used to set the random running interval.					

Parameter	Name	Range	Default	Unit	Property
P17-09	Test function	0 to 65535	0	-	○
P17-10	Speed limiter test output time	0 to 100	0	s	○
P17-11	Test floor 1	0 to P11-06	0	-	○
P17-12	Test floor 2	0 to P11-06	0	-	○
P17-13	Test floor 3	0 to P11-06	0	-	○
P17-14	Overspeed test detection value	0.000 to 4.000 m/s	0	m/s	○

9.2.17 P18: Maintenance parameters

Parameter	Name	Range	Default	Unit	Property
P18-00	Set running time	0 to 60000	0	-	×
P18-01	Set running days	0 to 999	999	-	×
P18-02	Maintenance notification period	0 to 99	0	-	○
P18-03	Maintenance notification period check	0 to 99	0	-	*
P18-04	Remote password	0 to 65535	0	-	○
P18-05	Maintenance status check	0 to 1	0	-	*

9.2.18 P19: Floor height parameters

Parameter	Name	Range	Default	Unit	Property
P19-00	High bits of floor height 1	0 to 65535	0	Pulses	×
P19-01	Low bits of floor height 1	0 to 65535	0	Pulses	×
High/Low bits of floor height 2 to 47					
P19-94	High bits of floor height 48	0 to 65535	0	Pulses	×
P19-95	Low bits of floor height 48	0 to 65535	0	Pulses	×

Parameter	Name	Range	Default	Unit	Property
These parameters indicate the pulses corresponding to the floor height i (between the leveling plates of floor i and floor i + 1). Each floor height is expressed by a 32-bit binary number, where the high 16 bits indicate the high digit place of the floor height, and the low 16 bits indicate the low digit place of the floor height. Normally, the floor height i of each floor corresponds to almost the same number of pulses.					

9.2.19 P20: Leveling adjustment parameters

Parameter	Name	Range	Default	Unit	Property
P20-00	Leveling adjustment mode	0: Inactive 1: Leveling adjustment enabled	0	-	×
P20-00 is used to set whether to enable the leveling adjustment function.					

Parameter	Name	Range	Default	Unit	Property
P20-01	Leveling adjustment record 1	00000 to 60060	30030	mm	×
P20-02	Leveling adjustment record 2		30030	mm	×
P20-03	Leveling adjustment record 3		30030	mm	×
P20-04	Leveling adjustment record 4		30030	mm	×
P20-05	Leveling adjustment record 5		30030	mm	×
P20-06	Leveling adjustment record 6		30030	mm	×
P20-07	Leveling adjustment record 7		30030	mm	×
P20-08	Leveling adjustment record 8		30030	mm	×
P20-09	Leveling adjustment record 9		30030	mm	×
P20-10	Leveling adjustment record 10		30030	mm	×
P20-11	Leveling adjustment record 11		30030	mm	×
P20-12	Leveling adjustment record 12		30030	mm	×
P20-13	Leveling adjustment record 13		30030	mm	×
P20-14	Leveling adjustment record 14		30030	mm	×

Parameter	Name	Range	Default	Unit	Property
P20-15	Leveling adjustment record 15		30030	mm	×
P20-16	Leveling adjustment record 16		30030	mm	×
P20-17	Leveling adjustment record 17		30030	mm	×
P20-18	Leveling adjustment record 18		30030	mm	×
P20-19	Leveling adjustment record 19		30030	mm	×
P20-20	Leveling adjustment record 20		30030	mm	×
P20-21	Leveling adjustment record 21		0	mm	×
P20-22	Leveling adjustment record 22		0	mm	×
P20-23	Leveling adjustment record 23		0	mm	×
P20-24	Leveling adjustment record 24		0	mm	×

These parameters are used to record the leveling adjustment values. Each parameter records the adjustment information of two floors, and therefore, 56 floor adjustment records are supported totally. The method of viewing the record is shown in the following figure.

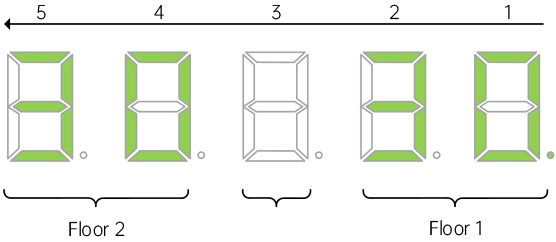


Figure 9-5 Viewing the leveling adjustment record

As shown in the above figure, the right two LEDs and the left two LEDs respectively show the adjustment bases of floor 1 and floor 2. If the value is larger than 30, it is upward leveling adjustment. If the value is smaller than 30, it is downward leveling adjustment. The default value "30" indicates that there is no leveling adjustment. Maximum adjustment range is ±30 mm.

Leveling adjustment is performed as follows:

(1) Ensure that shaft auto-tuning has been completed successfully, and that the elevator runs properly at normal speed.

(2) Set P20-00 to 1 to enable the car leveling adjustment function. In this case, the elevator does not respond to any hall calls, automatically runs to the top floor, and keeps the door open after arrival. If the elevator has been at the top floor, it directly keeps the door open.

(3) Enter the car, press the top floor button once, and the leveling position is changed 1 mm upward.

Parameter	Name	Range	Default	Unit	Property
Press the bottom floor button once, and the leveling position is changed 1 mm downward. The value is displayed in the car. Positive value: up arrow + value; Negative value: down arrow + value; Adjustment range: ±30 mm. (4) After completing the adjustment, press the top floor button and bottom floor button in the car at the same time to save the adjustment result. The car display restores to the normal state. If the leveling position of the current floor need not be adjusted, user also needs to press the top floor button and bottom floor button in the car at the same time to exit the leveling adjustment state. Otherwise, user cannot register the car call. (5) Press the door close button, and press the button for the next floor. The elevator runs to the next floor and keeps the door open after arrival. (6) After the leveling adjustment is completed, set P20-00 to 0 to disable the leveling adjustment function. Otherwise, the elevator cannot run properly.					

9.2.20 P21: Floor display parameters

Parameter	Name	Range	Default	Unit	Property
P21-01	Floor 1 display	00: Display "0" 01: Display "1" 02: Display "2" 03: Display "3" 04: Display "4" 05: Display "5" 06: Display "6" 07: Display "7" 08: Display "8" 09: Display "9" 10: Display "A" 11: Display "B" 12: Display "G" 13: Display "H" 14: Display "L" 15: Display "M" 16: Display "P"	1901	-	○
P21-02	Floor 2 display		1902	-	○
P21-03	Floor 3 display		1903	-	○
P21-04	Floor 4 display		1904	-	○
P21-05	Floor 5 display		1905	-	○
P21-06	Floor 6 display		1906	-	○
P21-07	Floor 7 display		1907	-	○
P21-08	Floor 8 display		1908	-	○
P21-09	Floor 9 display		1909	-	○
P21-10	Floor 10 display		100	-	○
P21-11	Floor 11 display		101	-	○
P21-12	Floor 12 display		102	-	○
P21-13	Floor 13 display		103	-	○
P21-14	Floor 14 display		104	-	○

Parameter	Name	Range	Default	Unit	Property
P21-15	Floor 15 display	17: Display "R" 18: Display "-" 19: No display 20: Display "12" 21: Display "13" 22: Display "23" > 22: No display	105	-	○
P21-16	Floor 16 display		106	-	○
P21-17	Floor 17 display		107	-	○
P21-18	Floor 18 display		108	-	○
P21-19	Floor 19 display		109	-	○
P21-20	Floor 20 display		200	-	○
P21-21	Floor 21 display		201	-	○
P21-22	Floor 22 display		202	-	○
P21-23	Floor 23 display		203	-	○
P21-24	Floor 24 display		204	-	○
P21-25	Floor 25 display		205	-	○
P21-26	Floor 26 display		206	-	○
P21-27	Floor 27 display		207	-	○
P21-28	Floor 28 display		208	-	○
P21-29	Floor 29 display		209	-	○
P21-30	Floor 30 display		300	-	○
P21-31	Floor 31 display		301	-	○
P21-32	Floor 32 display		302	-	○
P21-33	Floor 33 display		303	-	○
P21-34	Floor 34 display		304	-	○
P21-35	Floor 35 display		305	-	○
P21-36	Floor 36 display		306	-	○
P21-37	Floor 37 display		307	-	○
P21-38	Floor 38 display		308	-	○
P21-39	Floor 39 display		309	-	○
P21-40	Floor 40 display		400	-	○

Parameter	Name	Range	Default	Unit	Property
P21-41	Floor 41 display		401	-	○
P21-42	Floor 42 display		402	-	○
P21-43	Floor 43 display		403	-	○
P21-44	Floor 44 display		404	-	○
P21-45	Floor 45 display		405	-	○
P21-46	Floor 46 display		406	-	○
P21-47	Floor 47 display		407	-	○
P21-48	Floor 48 display		408	-	○

These parameters are used to set the display of each floor. The setting range is 0000 to 9999, where the two high bits indicate the display code of tens place of the floor number, and the two low bits indicate the display code of ones place.

Parameter	Name	Range	Default	Unit	Property
P21-49	Highest digit selection 1	0 to 4099	0	-	○
P21-50	Highest digit selection 2		0	-	○
P21-51	Highest digit selection 3		0	-	○
P21-52	Highest digit selection 4		0	-	○
P21-53	Highest digit selection 5		0	-	○

P21-52 to P21-56 are used to set the special display of floor numbers.

When the 2-digit floor display cannot meet user's requirements, add the third digit by setting the above parameters.

Set the floor address that requires a special display in two high digits and the display content in two low digits. For example, if user wants floor 18 to be displayed as "17A", set P21-18 to 0710 first (it displays "7A"). Then, set P21-49 to 1801, indicating that the highest digit display of floor 18 is "1".

9.2.21 P22: Magnetic scale parameters

Parameter	Name	Range	Default	Unit	Property
P22-00	Magnetic scale enable	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
P22-01	Magnetic scale model selection	0 to 65535	0	-	×
P22-02	Magnetic scale function selection	0 to 65535	0	-	×
P22-03	Floor position setting	0 to 999	0	-	×
P22-04	Magnetic scale tuning	0 to 999	0	-	○
P22-05	Minor adjustment of current floor position	0 to 99	50	mm	×
P22-06	Door zone length	100 to 400	200	-	×
P22-07	Magnetic scale limit distance setting	0 to 400	30	-	×
P22-08	High bit of floor 1 absolute position	0 to 65535	0	-	×
P22-09	Low bit of floor 1 absolute position	0 to 65535	0	mm	×
P22-10	Deviation threshold between encoder speed measurement and magnetic scale speed measurement	0.000 to 4.000	0.000	m/s	×
P22-11	High bit of pulses corresponding to each decimeter	0 to 65535	0	-	×
P22-12	Low bit of pulses corresponding to each decimeter	0 to 65535	0	-	×

9.2.22 P40: Commissioning parameters

Parameter	Name	Range	Default	Unit	Property
P40-00	Control data 1 address	0 to 65535	0	-	○
P40-01	Control data 1 value	0 to 65535	0	-	*

Parameter	Name	Range	Default	Unit	Property
P40-02	Control data 2 address	0 to 65535	0	-	○
P40-03	Control data 2 value	0 to 65535	0	-	*
P40-04	Control data 3 address	0 to 65535	0	-	○
P40-05	Control data 3 value	0 to 65535	0	-	*
P40-06	Control data 4 address	0 to 65535	0	-	○
P40-07	Control data 4 value	0 to 65535	0	-	*
P40-08	Control data setting 1	0 to 65535	0	-	○
P40-09	Control data setting 2	0 to 65535	0	-	○
P40-10	Control data setting 3	0 to 65535	0	-	○
P40-11	Control data setting 4	0 to 65535	0	-	○

9.2.23 D00: Basic configuration

Parameter	Name	Range	Unit
D00-00	Rate power of AC drive	0.1 to 999.9	kW
D00-01	Rated voltage of AC drive	0 to 999	V
D00-02	Rated current of AC drive	0.1 to 999.9	A
D00-03	MCB software version	0.00 to 9.99	-
D00-04	Drive board software version	0.00 to 9.99	-
D00-05	CTB software version	0.00 to 9.99	-
D00-06	MCB customized software version	0.00 to 9.99	-
D00-07	Drive board customized software version	0.00 to 9.99	-
D00-08	CTB customized software version	0.00 to 9.99	-
D00-09	MCB manufacturer software version	0.00 to 9.99	-
D00-10	Drive board manufacturer software version	0.00 to 9.99	-
D00-11	CTB manufacturer software version	0.00 to 9.99	-
D00-12	Functional specification version	0.00 to 9.99	-

Parameter	Name	Range	Unit
D00-13	Temporary version of the MCB software	0.00 to 99.99	-
D00-14	Second version number of drive board software	0.00 to 9.99	-
D00-15	Product model	0 to 9999	-
D00-16	CTB model	0 to 100	-

9.2.24 D01: Running status

Parameter	Name	Range	Unit
D01-00	Speed reference	0.000 to 4.000	m/s
D01-01	Feedback speed	0.000 to 4.000	m/s
D01-02	Bus voltage	0 to 999.9	V
D01-03	Current position	0.00 to 300.00	m
D01-04	Output current	0.0 to 999.9	A
D01-05	Output frequency	0.00 to 99.99	Hz
D01-06	Torque current	0.0 to 999.9 (with positive/negative display)	A
D01-07	Output voltage	0.0 to 999.9	V
D01-08	Output torque	0.0 to 200.0 (with positive/negative display)	%
D01-09	Output power	0.00 to 99.99 (with positive/negative display)	KW
D01-00 to D01-09 display the current performance state of the system (the output torque and output power support positive/negative display).			

Parameter	Name	Range	Unit
D01-10	Heatsink temperature	0 to 100	m/s
D01-10 displays the current temperature of the heatsink.			

Parameter	Name	Range	Unit
Normally, the heatsink temperature is below 40°C. When the temperature is too high, the system lowers the carrier frequency automatically to reduce heat. When the heatsink over-temperature reaches a certain level, the system reports the module overheat fault and stops running.			

Parameter	Name	Range	Unit
D01-13	Pre-torque current	0.0 to 200.0	%
D01-13 displays the percentage of pre-torque current out of the rated current (with positive/negative display, motor driving or regenerative state).			

Parameter	Name	Range	Unit
D01-14	Logic information	0 to 65535 Thousands place and ten thousands place: Elevator state Ones place to hundreds place: Car state	-

This parameter is used to display the elevator state.

As shown in the following figure, five LEDs are expressed as 1, 2, 3, 4, and 5 from right to left. 1 indicates door 1 state. 2 and 3 are reserved. The combination of 4 and 5 indicates elevator state. The following table shows the specific contents of the numbers.

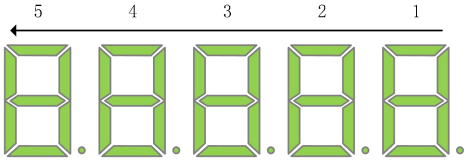


Figure 9-6 LED display

5		4		3	2	1	
Elevator state				Reserved	Reserved	Door 1 state	
00	Inspection state	08	Elevator lock	Reserved	Reserved	0	Waiting state
01	Shaft auto-tuning	09	Idle elevator parking			1	Door open state
02	Micro-leveling	10	Low-speed re-leveling			2	Door open limit

Parameter	Name			Range			Unit
03	Returning to fire emergency floor	11	Emergency evacuation operation			3	Door close state
04	Firefighter operation	12	Motor auto-tuning			4	Door close limit
05	Fault state	13	Keypad control			5	Operation state
06	Attendant operation	14	Main floor verification			-	-
07	Automatic	15	VIP state			-	-

Parameter	Name	Range	Unit
D01-15	Curve information	0 to 65535 Hundreds place to ten thousands place: Curve information Ones place and tens place: Timing information	-

D01-15 displays the system running curve information. As shown in the following table, LEDs 1 and 2 indicate the curve information and LEDs 4 and 5 timing information.

5	4	3	2	1
Timing information		No display	Curve information	
00	Stop state	-	00	Standby state
01	Shorting door lock circuit contactor output		01	Startup speed segment
02	Output of shorting motor stator and RUN contactors		02, 03	Acceleration start segment
03	Zero-speed torque current holding		04	Linear acceleration segment
04	Brake contactor output		05, 06, 07	Acceleration end segment
05	Curve running		08	Steady-speed running segment

Parameter	Name	Range		Unit
06	Stop zero-speed	09, 10, 11	Deceleration start segment	
07	Brake contactor OFF	12	Linear deceleration segment	
08	Stop timing	13, 14	Deceleration end segment	
		15	Curve stop	

Parameter	Name	Range	Unit
D01-16	System state 2	0 to 65535	-

Description of D01-16 system state 2

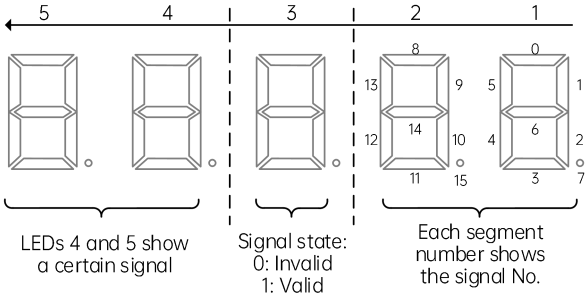


Figure 9-7 D01-16 system state 2 display

No.	Definition	No.	Definition
0	Up direction display	8	Reserved
1	Down direction display	9	Reserved
2	Operation state	10	Reserved
3	System full-load	11	Reserved
4	System overload	12	Reserved
5	System half-load	13	Reserved
6	System light-load	14	Reserved
7	Reserved	15	Reserved

Parameter	Name	Range	Unit
D01-17	Input state 6	0 to 65535	-
D01-18	Input state 7	0 to 65535	-
D01-19	Output state 3	0 to 65535	-
D01-20	Output state 4	0 to 65535	-

Parameter	Name	Range	Unit
D01-21	Accumulated running time	0 to 65535	h
D01-22	High bits of running times	0 to 9999	-
D01-23	Low bits of running times	0 to 9999	-
These parameters are used to view the actual running time and running times of the elevator. Running times of the elevator = D01-22 × 10000 + D01-23			

Parameter	Name	Range	Unit
D01-24	Current encoder angle	0.0 to 359.9	-
D01-24 displays the real-time encoder angle. This parameter cannot be modified.			

Parameter	Name	Range	Unit
D01-25	Maximum floor running time interval	0 to 200	-
D01-25 indicates the time required for the elevator to run from the bottom floor to the top floor at normal speed. The smaller value of "D01-25 + 10s" and P16-02 (Motor running time limit) is used as the reference time for motor running time protection. During running, if the leveling signal does not change within the reference time, the system reports E30 and the elevator stops running.			

Parameter	Name	Range	Unit
D01-26	Zero servo rollback distance	0 to 65535	-

Parameter	Name	Range	Unit
D01-27	Quiescent current	0.00 to 655.00	-
D01-27 is used to set the quiescent current during the certification of static elements.			

Parameter	Name	Range	Unit
D01-32	Braking force detection result	0 to 2	-
D01-33	Shorting motor stator test result	0 to 2	-
0: Meaningless 1: Passed 2: Failed			

Parameter	Name	Range	Unit
D01-34	System power-on time	0 to 65535	h
D01-35	TD2 temperature	0 to 999	℃
D01-36	Emergency evacuation state	0 to 65535	-

9.2.25 D02: MCB status

Parameter	Name	Range	Default
D02-00	Input state 1	0 to 65535	-
D02-01	Input state 2	0 to 65535	-
D02-02	Input state 3	0 to 65535	-
D02-03	Input state 4	0 to 65535	-
D02-04	Input state 5	0 to 65535	-
D02-05	Output state 1	0 to 65535	-
D02-06	Output state 2	0 to 65535	-
D02-00 to D02-06 display the system input and output states. (1) Description of D02-00 input state 1 display As shown in the following figure, five LEDs are numbered 1, 2, 3, 4, and 5 from right to left. 5 and 4			

Parameter	Name	Range	Default

indicate an input or output terminal function. 3 indicates that this function is enabled (1) or disabled (0). 1 and 2 display the overall state of 16 functions contained in this parameter using 16-segment LEDs.

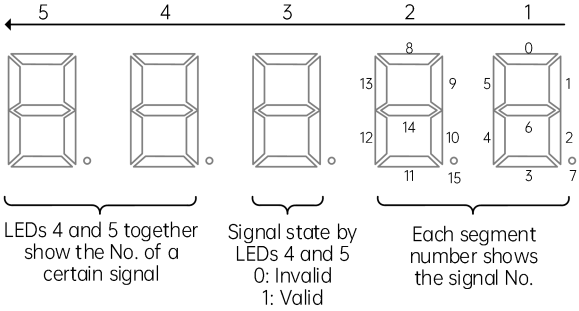


Figure 9-8 D02-00 input state 1 display

No.	Definition	No.	Definition
0	Reserved	8	Inspection signal
1	Up leveling signal	9	Inspection up signal
2	Down leveling signal	10	Inspection down signal
3	Door zone signal	11	Fire emergency signal
4	Safety circuit feedback	12	Up limit signal
5	Door lock circuit feedback	13	Down limit signal
6	RUN contactor feedback	14	Overload signal
7	Brake contactor feedback	15	Full-load signal

Example:

As shown in the following figure, LEDs 5, 4, and 3 together indicate that function 10 (Inspection down signal) is active (1). LEDs 1 and 2 indicate that functions 4 (Safety circuit feedback), 5 (Door lock circuit feedback), 6 (RUN contactor feedback), 7 (Brake contactor feedback), and 8 (Inspection signal) are also active.

Parameter	Name	Range	Default

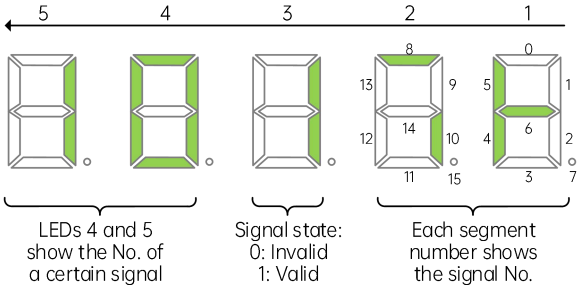


Figure 9-9 Example of D02-00 input state 1

No.	Definition	No.	Definition
0	Reserved	8	Inspection signal
1	Up leveling signal	9	Inspection up signal
2	Down leveling signal	10	Inspection down signal
3	Door zone signal	11	Fire emergency signal
4	Safety circuit feedback	12	Up limit signal
5	Door lock circuit feedback	13	Down limit signal
6	RUN contactor feedback	14	Overload signal
7	Brake contactor feedback	15	Full-load signal

(2) Description of D02-01 input state 2 display

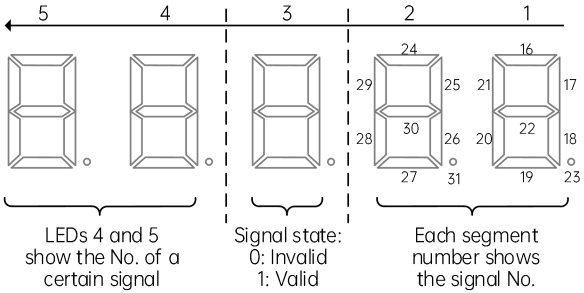


Figure 9-10 D02-01 input state 2 display

Parameter	Name	Range	Default

No.	Definition	No.	Definition
16	Up level-1 slowdown signal	24	Door operator 1 light curtain
17	Down level-1 slowdown signal	25	Door operator2 light curtain
18	Up level-2 slowdown signal	26	Brake travel switch 1 feedback
19	Down level-2 slowdown signal	27	UPS input
20	Up level-3 slowdown signal	28	Elevator lock input
21	Down level-3 slowdown signal	29	Safety circuit 2 feedback
22	Shorting door lock circuit output feedback	30	Synchronous motor self-locking feedback input
23	Firefighter operation input	31	Door lock circuit 2 feedback

(3) Description of D02-02 input state 3 display

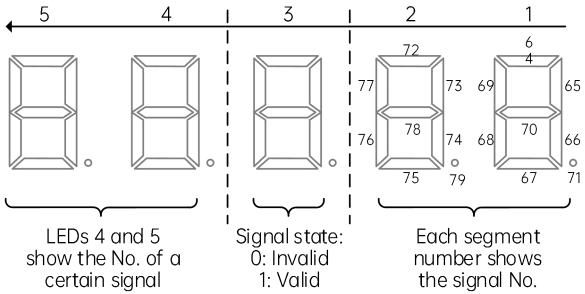


Figure 9-11 D02-02 input state 3 display

No.	Definition	No.	Definition
32	Reserved	40	Fire emergency floor switchover signal
33	Door 1 safety edge	41	Dummy floor signal
34	Door 2 safety edge	42	Reserved
35	Motor overheat	43	Reserved
36	Earthquake signal	44	Door 1 open button
37	Rear door forbidden	45	Door 2 open button

Parameter	Name	Range	Default
38	Light-load	46	Brake travel switch 2 feedback
39	Half-load	47	External fault input

(4) Description of D02-03 input state 4 display

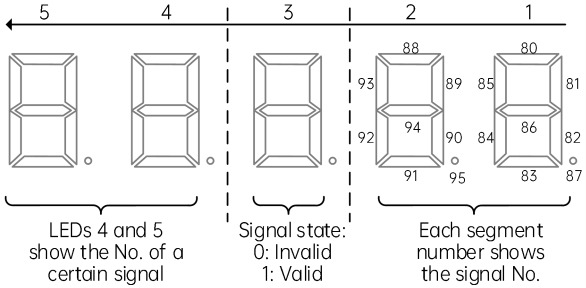


Figure 9-12 D02-03 input state 4 display

No.	Definition	No.	Definition
48	Terminal floor signal	56	Reserved
49	Door lock 1 shorting	57	Reserved
50	Door lock 2 shorting	58	Reserved
51	Reserved	59	Reserved
52	EEO input	60	Reserved
53	Main switch detection	61	Reserved
54	Door lock bypass input	62	Reserved
55	Reserved	63	Reserved

(5) Description of D02-04 input state 5 display

Parameter	Name	Range	Default

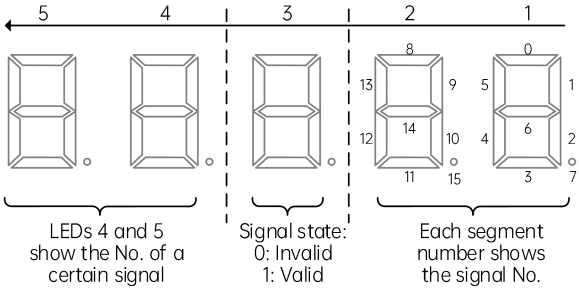


Figure 9-13 D02-04 input state 5 display

No.	Definition	No.	Definition
0	Reserved	8	High-voltage door lock 2 shorting
1	Reserved	9	Reserved
2	Reserved	10	Reserved
3	Reserved	11	Reserved
4	High-voltage safety circuit input	12	Reserved
5	High-voltage door lock circuit input	13	Reserved
6	High-voltage door lock circuit 2 input	14	Reserved
7	High-voltage door lock 1 shorting	15	Reserved

(6) Description of D02-05 output state 1

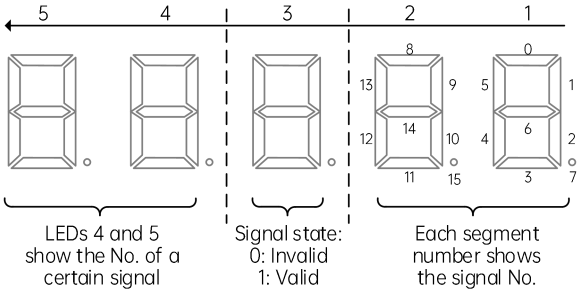


Figure 9-14 D02-05 output state 1 display

Parameter	Name	Range	Default

No.	Description	No.	Description
0	Reserved	8	Door close by door operator 2
1	RUN contactor output	9	Brake and RUN contactors normal
2	Brake contactor output	10	State of fault levels 3, 4 and 5
3	Shorting door lock circuit contactor output	11	Operator state
4	Fire emergency floor arrival signal	12	Synchronous motor self-locking output
5	Door open by door operator 1	13	Emergency evacuation output at power failure
6	Door close by door operator 1	14	Controller healthy
7	Door open by door operator 2	15	Emergency buzzer output

(7) Description of D02-06 output state 2

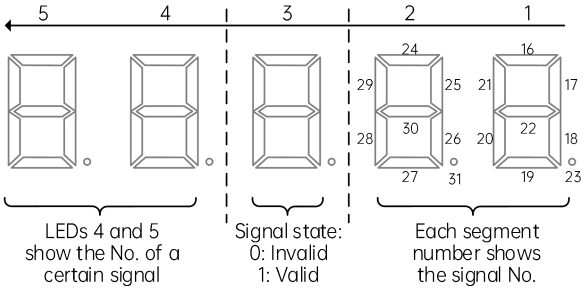


Figure 9-15 D02-06 output state 2 display

No.	Definition	No.	Definition
16	High-voltage startup of brake	24	Reserved
17	Up running signal	25	Rope gripper reset
18	Fan/Lighting signal	26	Brake transistor shoot-through output
19	Medical sterilization output	27	Alarm filter output
20	Non-door zone stop	28	Reserved

Parameter	Name	Range	Default
21	Electromagnetic lock output	29	Reserved
22	Non-service output	30	Reserved
23	Emergency evacuation output	31	Reserved

Parameter	Name	Range	Default
D02-07	Terminal state display 1	0 to 65535	-
D02-08	Terminal state display 2	0 to 65535	-

These parameters are used to monitor the state of all I/O terminals of the system.

As shown in the following figure, the LEDs for D02-07 and D02-08 are respectively numbered as 5, 4, 3, 2, and 1 from left to right. The segments are defined as follows.

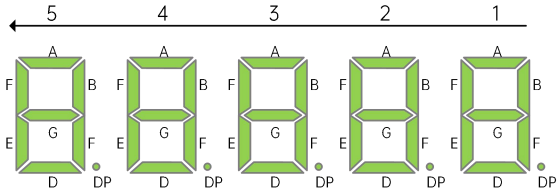


Figure 9-16 Terminal state monitoring

D02-07 Terminal state display					
	1	2	3	4	5
A	Reserved	Inspection signal	Up level-1 slowdown signal	Door operator 1 light curtain	Reserved
B	Up leveling signal	Inspection up signal	Down level-1 slowdown signal	Door operator 2 light curtain	RUN contactor output
C	Down leveling signal	Inspection down signal	Up level-2 slowdown signal	Brake output feedback 2	Brake contactor output
D	Door zone signal	Fire emergency signal	Down level-2 slowdown signal	UPS input	Shorting door lock circuit contactor output

Parameter	Name	Range	Default

E	Safety circuit feedback 1	Up limit signal	Up level-3 slowdown signal	Elevator lock input	Fire emergency floor arrival signal
F	Door lock circuit feedback 1	Down limit signal	Down level-3 slowdown signal	Safety circuit feedback 2	Reserved
G	RUN contactor output feedback	Overload signal	Shorting door lock circuit output feedback	Synchronous motor self-locking feedback	Reserved
DP	Brake output feedback 1	Full-load signal	Firefighter operation signal	Door lock circuit feedback 2	Reserved

D02-08 Terminal state display					
	1	2	3	4	5
A	Light curtain 1	Door open button	Door open output 1	Door open button display	System light curtain state 1
B	Light curtain 2	Door close button	Door close output 1	Door close button display	System light curtain state 2
C	Door open limit 1	Door open delay button	Door lock signal	Door open delay button display	Hall call elevator lock input
D	Door open limit 2	Direct travel ride signal	Door open output 2	Non-door zone stop output	Hall call fire emergency input
E	Door close limit 1	Attendant signal	Door close output 2	Reserved	Full-load signal
F	Door close limit 2	Direction change signal	Door lock signal	Buzzer output	Overload signal
G	Full-load signal	Independent running signal	Up arrival gong	Reserved	Reserved

Parameter	Name				Range	Default
DP	Overload signal	Firefighter operation signal	Down arrival gong	Energy-saving sign	Reserved	

9.2.26 D03: CTB status

Parameter	Name	Range	Default
D03-00	Car input state	0 to 65535	-
D03-01	Car output state	0 to 65535	-

D03-00 and D03-01 are used to display the car input and output states. The way they are set is the same as the MCB input and output display.

(1) Description of D03-00 car input display

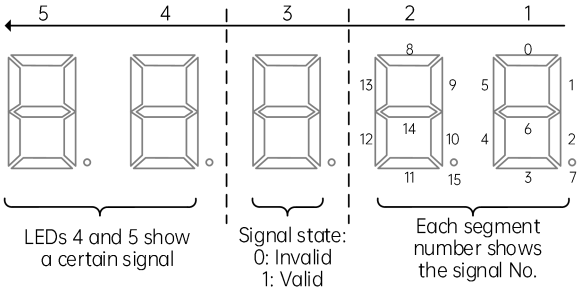


Figure 9-17 D03-00 car input state display

No.	Definition	No.	Definition
0	Inactive	8	Overload signal
1	Door 1 light curtain	9	Light-load signal
2	Door 2 light curtain	10	Reserved
3	Door 1 open limit	11	Reserved
4	Door 2 open limit	12	Reserved
5	Door 1 close limit	13	Reserved
6	Door 2 close limit	14	Reserved

Parameter	Name	Range	Default
7	Full-load signal	15	Reserved

(2) Description of D03-01 car output display

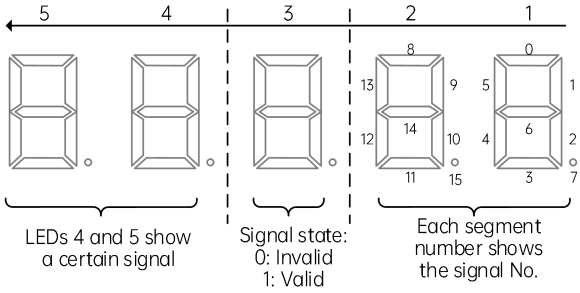


Figure 9-18 D03-01 car output state display

No.	Definition	No.	Definition
0	Fan/Lighting	8	Down arrival signal
1	Door 1 open	9	Reserved
2	Door 1 close	10	Reserved
3	Forced door close 1	11	Reserved
4	Door 2 open	12	Reserved
5	Door 2 close	13	Reserved
6	Forced door close 2	14	Reserved
7	Up arrival signal	15	Reserved

Parameter	Name	Range	Default
D03-02	Hall state	0 to 65535	-
D03-03	System state 1	0 to 65535	-

These parameters are used to display the hall and system states. The way they are set is the same as the MCB input and output display.

(1) Description of D03-02 hall state display

Parameter	Name	Range	Default

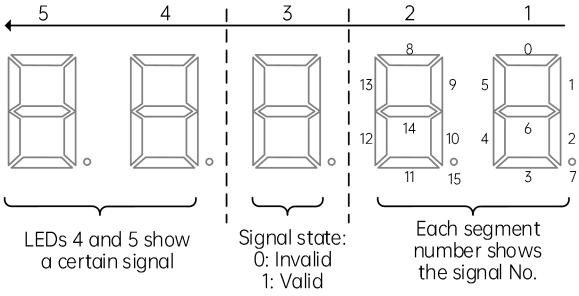


Figure 9-19 D03-02 hall state display

No.	Definition	No.	Definition
0	Reserved	8	Reserved
1	Elevator lock signal	9	Reserved
2	Fire emergency signal	10	Reserved
3	Current floor forbidden	11	Reserved
4	VIP signal	12	Reserved
5	Reserved	13	Reserved
6	Reserved	14	Reserved
7	Reserved	15	Reserved

(2) Description of D03-03 system state 1 display

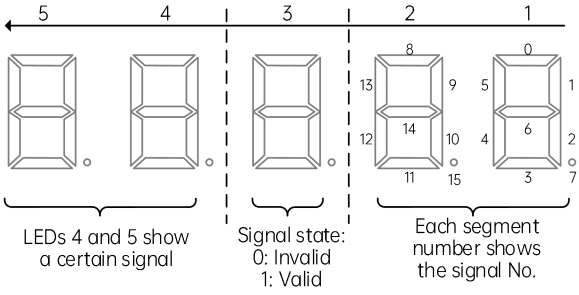


Figure 9-20 D03-03 system state 1 display

Parameter	Name	Range	Default

No.	Definition	No.	Definition
0	Door open 1 button	8	Door open 2 button
1	Door close 1 button	9	Door close 2 button
2	Door open delay 1	10	Door open delay 2
3	Direct travel ride switch	11	Reserved
4	Attendant switch	12	Reserved
5	Direction change switch	13	Reserved
6	Independent switch	14	Reserved
7	Fire emergency 2 switch	15	Reserved

9.2.27 D04: Communication status

Parameter	Name	Range	Default
D04-00	Hall call communication state 1	Displays the communication state between 1–16F of the MCB and the HCB.	-
D04-01	Hall call communication state 2	Displays the communication state between 17–32F of the MCB and the HCB.	-
D04-02	Hall call communication state 3	Displays the communication state between 33–48F of the MCB and the HCB.	-

These parameters display the communication state between HCBs of all floors and the MCB. Parameters D04-00 to D04-02 display the communication state between the MCB Modbus interface and the HCB.

States 1, 2 and 3 respectively correspond to the hall call communication state of floors 1 to 16, 17 to 32 and 33 to 48. The following figure shows the state description.

Parameter	Name	Range	Default

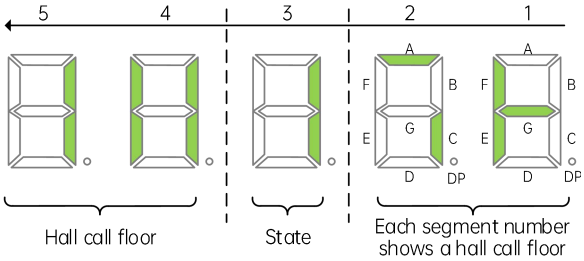


Figure 9-21 Hall call communication state

As shown in the above figure, LEDs 3 to 5 indicate hall call communication at floor 11 is normal. User can view hall calls at other floors by shifting LEDs 4 and 5 display. It can be seen from LEDs 1 and 2 that the hall call communication states at floors 5, 6, 7, 8, 9, and 11 are normal.

Parameter	Name	Range	Default
D04-03	Communication interference	0 to 65535	-

D04-03 displays the current quality of different system communication types, as described in the following table.

5		4		3		2		1	
Inverter SPI		Rectifier SPI		CAN2		MOD		CAN1	
0	Best quality	0	Best quality	0	Best quality	0	Best quality	0	Best quality
↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
9	Interruption	9	Interruption	9	Interruption	9	Interruption	9	Interruption

0–9 indicate the quality of communication. A larger number means stronger communication interference.

Parameter	Name	Range	Default
D04-04	Encoder interference	0 to 65535	-

Parameter	Name	Range	Default
D04-06	Version number display selection	0 to 65535	-

Parameter	Name	Range	Default
D04-08	Number of log caches	0 to 65535	-
D04-09	Magnetic scale communication state	0 to 65535	-
D04-10	Magnetic scale working state	0 to 65535	-
D04-11	High bit of magnetic scale present position	0 to 65535	-
D04-12	Low bit of magnetic scale present position	0 to 65535	-
D04-13	Present speed of magnetic scale	0.100 to 4.000	m/s
D04-14	Count of magnetic scale communication abnormality	0 to 65535	-
D04-15	Register value of magnetic scale fault	0 to 65535	-
D04-16	Inspection box communication state	0 to 10	-
D04-17	Inspection box input state	0 to 65535	-
D04-18	Inspection box software version	0 to 99.99	-
D04-19	ARD communication state	0 to 10	-
D04-20	ARD state	0 to 65535	-
D04-21	ARD fault code	0 to 99	-
D04-22	ARD battery voltage	0.0 to 99.9	-
D04-23	ARD software version	0.00 to 99.99	-

9.2.28 E00 to E10: Fault record parameters

Parameter	Name	Range	Default
E00-00	1st fault	0 to 9999	-
E00-01	1st fault subcode	0 to 65535	-
E00-02	Month and day upon 1st fault	0 to 1231	-

Parameter	Name	Range	Default
E00-03	Hour and minute upon 1st fault	0 to 23.59	-
E00-04	2nd fault	0 to 9999	-
E00-05	2nd fault subcode	0 to 65535	-
E00-06	Month and day upon 2nd fault	0 to 1231	-
E00-07	Hour and minute upon 2nd fault	0 to 23.59	-
...			
E00-96	25th fault	0 to 9999	-
E00-97	25th fault subcode	0 to 65535	-
E00-98	Month and day upon 25th fault	0 to 1231	-
E00-99	Hour and minute upon 25th fault	0 to 23.59	-

If the 10 detailed fault records are full, the earliest detailed fault record will be moved to the latest brief fault record. For example, if a new fault occurs, the fault code, subcode and time information of the fault recorded in the group E09 will be moved to E00-00 to E00-03.

The brief fault record is a 4-digit number. The two high digits indicate the floor where the car is located when the fault occurs, and the two low digits indicate the fault code. For example, the 1st fault record is 0835, indicating that when the latest brief fault record (fault E35) occurs, the car is near floor 8.

The fault subcode is used to locate the causes of the fault. Fault month and day and fault hour and minute record accurate occurrence time of the fault.

Parameter	Name	Range	Default
E01-00	1st fault	0 to 9999	-
E01-01	1st fault subcode	0 to 65535	-
E01-02	Month and day upon 1st fault	0 to 1231	-
E01-03	Hour and minute upon 1st fault	0 to 23.59	-
E01-04	Logic information upon 1st fault	0 to 65535	-
E01-05	Curve information upon 1st fault	0 to 65535	-
E01-06	Speed reference upon 1st fault	0.000 to 4.000	m/s
E01-07	Feedback speed upon 1st fault	0.000 to 4.000	m/s

Parameter	Name	Range	Default
E01-08	Bus voltage upon 1st fault	0 to 999.9	V
E01-09	Current position upon 1st fault	0.0 to 300.0	m
E01-10	Output current upon 1st fault	0.0 to 999.9	A
E01-11	Output frequency upon 1st fault	0.00 to 99.99	Hz
E01-12	Torque current upon 1st fault	0.0 to 999.9	A
E01-13	Output voltage upon 1st fault	0 to 999.9	V
E01-14	Output torque upon 1st fault	0 to 200.0	%
E01-15	Output power upon 1st fault	0.00 to 99.99	KW
E01-16	Communication interference upon 1st fault	0 to 65535	-
E01-17	Encoder interference upon 1st fault	0 to 65535	-
E01-18	Input state 1 upon 1st fault	0 to 65535	-
E01-19	Input state 2 upon 1st fault	0 to 65535	-
...			
E10-00	10th fault	0 to 9999	-
E10-01	10th fault subcode	0 to 65535	-
E10-02	Month and day upon 10th fault	0 to 1231	-
E10-03	Hour and minute upon 10th fault	0 to 23.59	-
E10-04	Logic information upon 10th fault	0 to 65535	-
E10-05	Curve information upon 10th fault	0 to 65535	-
E10-06	Speed reference upon 10th fault	0.000 to 4.000	m/s
E10-07	Feedback speed upon 10th fault	0.000 to 4.000	m/s
E10-08	Bus voltage upon 10th fault	0 to 999.9	V
E10-09	Current position upon 10th fault	0.0 to 300.0	m
E10-10	Output current upon 10th fault	0.0 to 999.9	A
E10-11	Output frequency upon 10th fault	0.00 to 99.99	Hz

Parameter	Name	Range	Default
E10-12	Torque current upon 10th fault	0.0 to 999.9	A
E10-13	Output voltage upon 10th fault	0 to 999.9	V
E10-14	Output torque upon 10th fault	0 to 200.0	%
E10-15	Output power upon 10th fault	0.00 to 99.99	kW
E10-16	Communication interference upon 10th fault	0 to 65535	-
E10-17	Encoder interference upon 10th fault	0 to 65535	-
E10-18	Input state 1 upon 10th fault	0 to 65535	-
E10-19	Input state 2 upon 10th fault	0 to 65535	-
These parameters record the latest 10 faults and system state parameters upon each fault.			

Chapter 10 Troubleshooting

10.1 Fault display

The integrated elevator controller records and reports fault information as described below:

- The keypad on the controller scrolls to display the current fault code and subcode, such as "E22 b01".
- When an operating panel is connected to the controller, the panel will display the current fault code and subcode, such as "E2201".
- When you set the keypad P-2 to 2, it will scroll to display the latest 10 faults, including the fault code, fault subcode and occurrence time.
- The system can record the detailed information of the latest 10 faults and the brief information of the latest 25 faults. Refer to groups E00 to E10.

Figure 10-1 Scrolling display of fault code and subcode on the keypad

When an operating panel is connected to the controller, the panel will display the current fault code, such as "Err22".

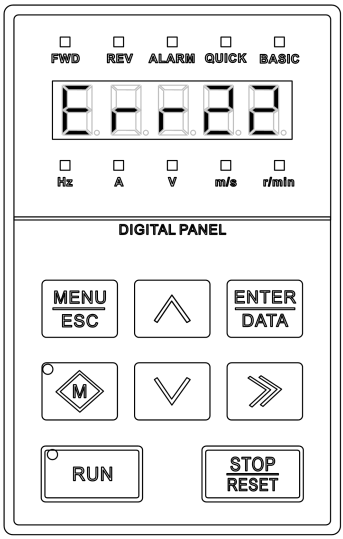


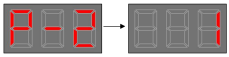
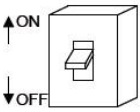
Figure 10-2 Fault display on the operating panel

When you set the keypad P-2 to 2, the panel will scroll to display the latest 10 faults, including the fault

code, fault subcode and occurrence time.

The system can record the detailed information of the latest 10 faults and the brief information of the latest 25 faults. Refer to groups E00 to E10.

10.2 Procedure for fault reset before elevator restart

Stage	Measure	Note
When fault occurs	Set the keypad P-2 to 2, then the keypad scrolls to display the latest 10 faults, including the fault code, subcode, and occurrence time.	Refer to groups E00 to E10 for parameter description.
Before fault reset	Locate the fault cause based on the displayed fault code, and troubleshoot the fault	Refer to the fault handling section.
Resetting the fault	1. Automatic reset of fault For some faults, if the automatic reset conditions are met after troubleshooting, the controller will automatically reset the fault.	
	2. Manual reset of fault Some faults need to be manually reset after troubleshooting. You can press STOP RESET on the operating panel to reset the fault, or set the keypad P-2 to 1 to reset the fault.	Press STOP RESET to reset Set P-2 to 1 to reset 
	3. Fault reset requiring power-off To reset some faults after troubleshooting, you need to power off and then power on the controller again.	

10.3 Description of fault levels

The controller is a complicated electronic control system and the displayed fault information is graded into 5 levels according to the severity. The faults of different levels are handled according to the following table:

Table 10-1 Description of fault levels

Fault level	Fault state	Note (Stop mode)
Level 1	① Display the fault code.	The elevator running is not affected on any

Fault level	Fault state	Note (Stop mode)
	② Output the fault relay action command.	condition.
Level 2	① Display the fault code. ② Output the fault relay action command. ③ Continue normal running of the elevator.	The advance door opening/re-leveling, and parallel/group control functions are disabled.
Level 3	① Display the fault code. ② Output the fault relay action command. ③ Stop output and apply the brake immediately after stop.	3A: In low-speed running, the elevator stops at special deceleration rate and cannot restart.
		3B: In low-speed running, the elevator does not stop. In running at normal speed, the elevator stops and can start running at low speed after a delay of 3 s.
Level 4	① Display the fault code. ② Output the fault relay action command. ③ In distance control, the elevator decelerates to stop and cannot run again.	4A: In low-speed running, the elevator stops at special deceleration rate and cannot restart.
		4B: In low-speed running, the elevator does not stop. In running at normal speed, the elevator stops and can start running after a delay of 3 s.
		4C: In low-speed running, the elevator does not stop. In running at normal speed, the elevator stops and can start running at low speed after a delay of 3 s.
Level 5	① Display the fault code. ② Output the fault relay action command. ③ The elevator stops immediately.	5A: In low-speed running, the elevator stops immediately and cannot restart.
		5B: In low-speed running, the elevator does not stop. In running at normal speed, the elevator stops and can start running at low speed after a delay of 3 s.

10.4 Fault handling

If a fault is reported, the system performs corresponding processing based on the fault level. You can handle the fault according to the possible causes described in the following table.

Fault code	Fault description	Possible cause	Solution	Level
E01	Hardware overcurrent	The main circuit output is grounded or short circuited.	① Check whether the motor wiring is correct, and whether the grounding is correct. ② Check whether a controller output short-circuit occurs due to abnormal shorting motor stator contactor or RUN contactor. ③ Check whether the power cable jacket is damaged.	5A
		Motor auto-tuning is not performed.	Perform motor auto-tuning properly according to the motor nameplate.	
		The encoder signal is abnormal.	① Check whether encoder pulses per revolution (PPR) is set correctly. ② Check whether the encoder signal is interfered, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ③ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably, and whether the encoder is stable during high-speed running. ④ Check whether the encoder wiring is correct and secure. ⑤ Check whether the system is reliably shorted to ground.	
		The motor phase sequence is incorrect.	Change the UVW phase sequence of motor, and do auto-tuning again.	
		The acceleration/ deceleration time is too short.	Lower the acceleration/deceleration rate.	
		Overcurrent due to dynamic braking	Check whether abnormalities occur in brake circuit or braking resistor.	
E02	Overvoltage	The input voltage is too	Check whether the input voltage is too high.	5A

Fault code	Fault description	Possible cause	Solution	Level
		high.	Observe whether the bus voltage is too high. (Bus voltage shall be within 540 V to 580 V for normal 380 V input)	
		The braking resistance is too large, or the braking unit is abnormal.	① Check whether the balance coefficient is correct. ② Check whether the bus voltage rises too quickly during running. If yes, it means the braking resistor does not work or is not suitable. ③ Check whether the cable connecting the braking resistor is damaged, whether the copper wire touches the ground, and whether the connection is secure. ④ Select a proper braking resistor according to the recommendations. ⑤ If overvoltage occurs each time when the elevator reaches the target speed (proper braking resistance), try to decrease P04-01/P04-04 in order to reduce the following error, preventing overvoltage caused by speed overshoot.	
		The acceleration/ deceleration rate is too large.	Lower the rate.	
E03	Undervoltage	Instantaneous power failure occurs on the input power supply.	① Check whether the power fails during running. ② Check whether the wiring of all power input cables is secure.	5A
		The input voltage is too low.	Check whether the external power voltage is too low.	
		The drive control board fails.	Contact the agent or Megmeet.	
E04	AC drive software	The main circuit output is grounded or short	① Check whether the motor wiring is correct, and whether the grounding is correct.	5A

Fault code	Fault description	Possible cause	Solution	Level
	overcurrent	circuited.	② Check whether a controller output short-circuit occurs due to abnormal shorting motor stator contactor or RUN contactor. ③ Check whether the power cable jacket is damaged.	
		Motor auto-tuning is not performed.	Perform motor auto-tuning properly according to the motor nameplate.	
		The encoder signal is abnormal.	① Check whether encoder pulses per revolution (PPR) is set correctly. ② Check whether the encoder signal is interfered, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ③ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably, and whether the encoder is stable during high-speed running. ④ Check whether the encoder wiring is correct and secure. ⑤ Check whether the system is reliably shorted to ground.	
		The motor phase sequence is incorrect.	Change the UVW phase sequence of motor, and do auto-tuning again.	
		The acceleration/ deceleration time is too short.	Lower the acceleration/deceleration rate.	
E05	Resistance identification error	The motor is abnormal.	Check whether the motor wiring is correct, and whether the motor coil is normal.	5A
		The external voltage is abnormal.	Check whether the bus voltage is too low, or unstable.	
E06	Excessive	The speed PI	Change function code values in P04.	5A

Fault code	Fault description	Possible cause	Solution	Level
	speed deviation	parameters are improper.		
		Incorrect settings of motor parameters	Confirm that parameters are correctly configured based on the motor nameplate.	
		The detection threshold for speed deviation is set too small.	Change the detection threshold for speed deviation	
		The load fluctuation is too strong.	Eliminate the load fluctuation.	
		Abnormal braking action	Check whether the brake circuit and the corresponding power supply are in normal state.	
		Drive output phase loss during running	Check whether the motor wiring is correct.	
E07	AC drive overheat	The ambient temperature is too high.	Lower the ambient temperature.	5A
		The fan is damaged.	Replace the fan.	
		The air duct is blocked.	① Clean the air duct. ② Check whether the installation clearance of the controller meets the requirements.	
		Abnormal setting of drive model	Check whether the drive model and power are set correctly.	
E08	AC drive phase loss at the output side	The output wiring of the main circuit is loose.	① Check the motor wiring. ② Check whether the RUN contactor at the output side is normal.	5A
		The motor is damaged.	Check whether the internal coil of motor is normal.	
E09	AC drive overload	The external mechanical resistance is too large.	① Check whether the brake is released, and whether the brake power supply is normal. ② Check whether the guide shoes are too	5A

Fault code	Fault description	Possible cause	Solution	Level
			tight.	
		The balance coefficient is improper.	Check whether the balance coefficient is proper.	
		The encoder feedback signal is abnormal.	Check whether the encoder feedback signal and parameter setting are correct, and whether the initial angle of the encoder for the synchronous motor is correct.	
		Motor auto-tuning is not performed properly.	① Check the motor parameter setting and encoder installation angle, and perform motor auto-tuning again. ② If this fault is reported when the slip test is carried on, perform the slip test by using the slip function.	
		The motor phase sequence is incorrect.	Change the UVW phase sequence of motor.	
		The power rating of AC drive model in use is too small.	Replace the model with a larger power rating. (The AC drive model is below requirements, if the actual current reaches above the rated AC drive current when the elevator car without load is in constant speed running.)	
E10	Motor overload	The external mechanical resistance is too large.	① Check whether the brake is released, and whether the brake power supply is normal. ② Check whether the guide shoes are too tight.	5A
		The balance coefficient is improper.	Check whether the balance coefficient is proper.	
		Motor auto-tuning is not performed properly.	① Check the motor parameter setting and encoder installation angle, and perform motor auto-tuning again. ② If this fault is reported when the slip test is carried on, perform the slip test by using the slip function.	
		The motor phase	Change the UVW phase sequence of motor.	

Fault code	Fault description	Possible cause	Solution	Level
		sequence is incorrect.		
		The power rating of motor model in use is too small.	Replace the model with a larger power rating. (The motor model is below requirements, if the actual current reaches above the rated motor current when the elevator car without load is in constant speed running.)	
E11	AC drive input phase loss	The power input phases are not symmetric.	① Check whether any phase of the three-phase power supply is lost. ② Check whether the three phases of power supply are balanced. ③ Check whether the power voltage is normal, and adjust the power voltage.	5A
		The drive control board is abnormal.	Contact the agent or Megmeet.	
E12	Motor software overcurrent	The main circuit output is grounded or short circuited.	① Check whether the motor wiring is correct, and whether the grounding is correct. ② Check whether the shorting motor stator contactor causes controller output short circuit. ③ Check whether the power cable jacket is damaged.	5A
		Motor auto-tuning is not performed.	Perform motor auto-tuning properly according to the motor nameplate.	
		The encoder signal is abnormal.	① Check whether encoder pulses per revolution (PPR) is set correctly. ② Check whether the encoder signal is interfered, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ③ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably, and whether the encoder is stable during	

Fault code	Fault description	Possible cause	Solution	Level
			high-speed running. ④ Check whether the encoder wiring is correct and secure. ⑤ Check whether the system is reliably shorted to ground	
		The motor phase sequence is incorrect.	Change the UVW phase sequence of motor, and do auto-tuning again.	
		The acceleration/ deceleration time is too short.	Lower the acceleration/deceleration rate.	
E13	Dynamic auto-tuning fault	Subcode 6: The AB directions may be reversed.	① Reverse the AB directions of the encoder in P04-29, and do auto-tuning again. ② Check whether the brake is released and whether there is any other fault. ③ Confirm that parameters are correctly configured based on the motor nameplate, and conduct the dynamic auto-tuning again afterwards.	5A
		Subcode 7: Timeout	The speed during auto-tuning is too high. Properly lower the inspection speed.	
		Subcode 8: Sin/Cos encoder A signal abnormality	① Check whether the encoder works normally. ② Check whether the encoder signal is interfered, whether the encoder wiring cables are routed in independent conduits, whether the routing distance is excessively long, and whether the shield layer is grounded in single-end manner. ③ Check whether the encoder is reliably installed, whether the rotating shaft is firmly connected to the motor shaft, and whether the shaft is stable during high-speed running. ④ Check whether the encoder wiring is correct and reliable.	
		Subcode 9: Sin/Cos encoder B signal abnormality		
		Subcode 10: Sin/Cos encoder AB signal abnormality		

Fault code	Fault description	Possible cause	Solution	Level
			⑤ Check whether the PG card is abnormal. ⑥ Check whether the system is reliably shorted to ground.	
E14	Reserved	-	-	-
E15	Strong encoder interference	The interference to AB signals or Z signal is too strong.	① Check whether encoder pulses per revolution (PPR) is set correctly. ② Check whether the encoder signal is interfered, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ③ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably, and whether the encoder is stable during high-speed running. ④ Check whether the encoder wiring is correct and secure. ⑤ Check whether the system is reliably shorted to ground. ⑥ Try re-commissioning.	5A
E16	Reserved	-	-	-
E17	Sin/Cos encoder signal abnormal	Subcode 1: AB disconnection Subcode 2: CD disconnection Subcode 3: Z disconnection Subcode 4: A disconnection Subcode 5:B disconnection	① Check whether the encoder is abnormal. ② Check the encoder wiring. ③ Check whether the PG card is abnormal. ④ Check whether the system is reliably shorted to ground.	5A
E18	Hardware abnormal	Current zero drift fault	Contact the agent or Megmeet.	5A

Fault code	Fault description	Possible cause	Solution	Level
E19	STO function abnormal	Subcode 1: The STO hardware feedback is abnormal. Subcode 2: The STO hardware output is abnormal.	Check whether the STO hardware is normal.	5A
E20	Motor short-circuit to ground	AC drive output short-circuit to ground	① Check the motor insulation. ② Check whether the motor power cable is shorted to ground. ③ Check whether the contactor is shorted to ground.	5A
E21	Parameter setting error	Subcode 1: SVC is used in the distance control mode.	① Set the control mode to FVC in distance control. ② If SVC is needed, set the system to the keypad control mode first.	5A
E22	Leveling signal abnormal	Subcode 1: The leveling signal is stuck. Subcode 2: The leveling signal is lost.	① Check whether the leveling and door zone sensors work properly. ② Check the installation verticality and depth of the leveling plates. ③ Check the leveling signal input points of the MCB.	1A
		Subcode 3: During normal running of elevator, the deviation of leveling position pulse check is too large.	Check whether the steel rope slips.	
E23	Reserved	-	-	5A
E24	RTC clock fault	Subcode 1: The RTC clock information of the MCB is abnormal.	① Replace the clock battery. ② Replace the MCB.	3B
E25	Storage data abnormal	Subcode 1, 2, 3: The storage data of the MCB is abnormal.	Contact the agent or Megmeet.	4A

Fault code	Fault description	Possible cause	Solution	Level
E26	Earthquake signal	Subcode 1: The earthquake signal is active and the duration exceeds 2 s.	Check that the earthquake input signal is consistent with the parameter setting (NC, NO) of the MCB.	3B
E27	Fault of maintenance notification	The elevator doses not cut off the power and conduct maintenance at the designated time.	① Cut off the elevator power, and perform maintenance. ② Cancel the maintenance notification period detection function via P16-11 ③ Contact the agent or Megmeet.	-
E28	Reserved	-	-	-
E29	Shorting motor stator contactor feedback abnormal	Subcode 1: Shorting motor stator contactor feedback to the MCB is abnormal. Subcode 2: Shorting motor stator contactor feedback to the I/O expansion board is abnormal.	① Check that the signal feature (NO, NC) of the feedback contact on the contactor is correct. ② Check that the contactor and corresponding feedback contact act correctly. ③ Check the power supply to the coil circuit of the shorting motor stator contactor.	5A
E30	Elevator position abnormal	Subcode 1: In the normal speed running or re-leveling running mode, the up leveling signal has no change within a certain time period. Subcode 2: In the normal speed running or re-leveling running mode, the down leveling signal has no change within a certain time period. Subcode 3: In the normal speed running	① Check whether the leveling signal cables are connected reliably, whether the signal copper wires touch the ground, and whether the cables are short circuited with other signal cables. ② Check whether the distance between two floors is too large, and whether the re-leveling speed (P03-02) is set too low, causing over-long re-leveling running time.	4A

Fault code	Fault description	Possible cause	Solution	Level
		or re-leveling running mode, the door zone leveling signal has no change within a certain time period.		
E31	Reserved	-	-	-
E32	Reserved	-	-	-
E33	Elevator speed abnormal	Subcode 1: The speed exceeds the limit during normal running.	① Check whether the parameter setting and wiring of the encoder are correct. ② Check the setting of motor nameplate parameters, and perform motor auto-tuning again.	5A
		Subcode 2: The speed exceeds the limit during inspection or shaft auto-tuning .	Decrease the inspection speed or perform motor auto-tuning again.	
		Subcode 3: The speed exceeds the limit in the shorting stator braking mode.	① Check whether the shorting motor stator function is enabled. ② Check whether the motor UVW phase sequence is correct.	
		Subcode 4, 5: The speed exceeds the limit during emergency running.	① Check whether the emergency power capacity meets the requirements. ② Check whether the emergency running speed is set properly.	
		Subcode 6: The speed deviation detected by the MCB is too large.	① Check wiring of the encoder. ② Check whether SPI communication between the MCB and drive board is normal.	
E34	Logic fault	Logic of the MCB is abnormal.	Contact us or our agent to replace the MCB.	5A
E35	Shaft auto-tuning data abnormal	Subcode 1: When shaft auto-tuning is started, the elevator is not at the bottom floor or the	Check that the down slow-down switch is valid, and that P11-01 (Current floor) is set to the bottom floor number.	4C

Fault code	Fault description	Possible cause	Solution	Level
		down slow-down switch is invalid.		
		Subcode 2: The inspection switch is turned off when shaft auto-tuning is performed.	Check that the inspection switch is turned to the inspection state.	
		Subcode 3: It is judged upon power-on that shaft auto-tuning is not performed.	Perform shaft auto-tuning again.	
		Subcode 4, 14, 24: In the distance control mode, it is judged at startup that shaft auto-tuning is not performed.		
		Subcode 5: The elevator running direction and the pulse change are inconsistent.	Check whether the elevator running direction is consistent with the pulse change in P11-03: P11-03 increases in up direction and decreases in down direction.	
		Subcode 6, 7, 9: The plate pulse length sensed at up/down leveling is abnormal.	① Check that the NO/NC state of the leveling sensor is set correctly. ② Check whether the leveling plates are inserted properly and whether there is strong power interference if the leveling sensor signal blinks.	
		Subcode 8, 10: No leveling signal is received within 45 s continuous running	① Check whether wiring of the leveling sensor is correct. ② Check whether the floor distance is too large, causing running timeout. Increase the speed set in P03-06 and perform shaft auto-tuning again to ensure that learning the floors can be completed within 45 s.	

Fault code	Fault description	Possible cause	Solution	Level
		Subcode 11, 15: The stored floor height is smaller than 50 cm.	Enable the super short floor function if the floor distance is less than 50 cm. If the floor distance is normal, check installation of the leveling plate for this floor and check the sensor.	
		Subcode 12: The floor when auto-tuning is completed is not the top floor.	Check whether the setting of P11-06 (Top floor of elevator) is correct and whether the leveling plate is absent.	
		Subcode 16: The up leveling and down leveling signals are opposite.	① Check whether the wiring of up leveling and down leveling is correct. ② Check whether the clearances for up leveling and down leveling are proper.	
E36	RUN contactor feedback abnormal	Subcode 1: The RUN contactor has no output, but the RUN contactor feedback is active.	① Check whether the feedback contact of the contactor acts properly. ② Check the signal feature (NO, NC) of the feedback contact.	5A
		Subcode 2: The RUN contactor has output, but the RUN contactor feedback is inactive.		
		Subcode 5: The RUN contactor feedback is active before re-leveling begins.		
		Subcode 3: The current of the asynchronous motor from acceleration to constant-speed running is too small (≤ 0.1 A).	Check whether the output cables UVW of the controller are connected properly, and check whether the control circuit of the RUN contactor coil is normal.	

Fault code	Fault description	Possible cause	Solution	Level
E37	Brake contactor feedback abnormal	Subcode 1: The output of the brake contactor is inconsistent with the brake feedback.	① Check whether the brake contactor opens and closes properly. ② Check that the signal feature (NO, NC) of the feedback contact on the brake contactor is set correctly. ③ Check whether the feedback circuit of the brake contactor is normal.	5A
		Subcode 3: The output of the brake contactor is inconsistent with the brake travel switch 1 feedback.	① Check whether the signal feature (NO, NC) of the brake travel switch 1/2 feedback is set correctly. ② Check whether the circuit of the brake travel switch 1/2 feedback is normal.	
		Subcode 10: The output of the brake contactor 2 is inconsistent with the brake 2 feedback.	Check whether the circuit of the brake travel switch 1/2 feedback is normal.	
		Subcode 11: The output of the brake contactor is inconsistent with the brake travel switch 2 feedback.		
E38	Encoder signal abnormal	Subcode 1: The pulses in P11-03 does not change within the time threshold in P02-10.	① Check whether the encoder is used correctly. ② Check whether the brake works properly.	5A
		Subcode 2: Pulses (P11-03) increases in the down direction.	① Check whether parameter setting and wiring of the encoder are correct. ② Check whether system grounding and signal grounding are reliable. ③ Check whether the motor UVW phase sequence is correct.	
		Subcode 3: Pulses (P11-03) decreases in the up direction.		
		Subcode 4: SVC is used in the distance control mode.	Set the control mode to FVC in distance control (P00-00=1).	

Fault code	Fault description	Possible cause	Solution	Level
E39	Component fault	Subcode 1: The motor overheat relay input remains valid for a certain time.	① Check whether the parameter setting (NO, NC) is correct. ② Check whether the thermal protection relay socket is normal. ③ Check whether the motor is used properly and whether it is damaged. ④ Improve cooling conditions of the motor.	3A
		Subcode 2: The front door operator overheat relay input remains valid for a certain time.		3A
		Subcode 3: The back door operator overheat relay input remains valid for a certain time.		3A
		Subcode 4: The fan motor overheats.		3A
		Subcode 5: The external fault signal remains valid for 2 seconds.	① Check the NO/NC setting of external faults. ② Check the input state of the external fault signal.	3A
		Subcode 6: ARD fault	ARD is abnormal. Check that ARD works properly.	3A
		Subcode 10: ARD battery is damaged when detected upon power-on.	ARD is abnormal. Please check ARD.	
		Subcode 11: ARD battery charging fault	ARD is abnormal. Please check ARD.	
E40	Reserved	-	-	-
E41	Safety circuit disconnected	Subcode 1: The safe circuit signal becomes off.	① Check the safety circuit switches and their states. ② Check whether the external power supply is normal. ③ Check whether the safety circuit contactor acts properly.	5A

Fault code	Fault description	Possible cause	Solution	Level
			④ Confirm the signal feature (NO, NC) of the feedback contact of the safety circuit contactor.	
E42	Door lock disconnected during running	Subcode 1, 2: The door lock circuit feedback is invalid during elevator running.	① Check whether the hall door lock and the car door lock are in good contact. ② Check whether the door lock contactor acts properly. ③ Check the signal feature (NO, NC) of the feedback contact on the door lock contactor. ④ Check whether the external power supply is normal.	5A
E43	Up limit signal abnormal	Subcode 1: When the elevator runs in the up direction, the up limit switch acts.	① Check the signal feature (NO, NC) of the up limit switch. ② Check whether the up limit switch is in good contact. ③ Check whether the limit switch is installed at a relatively low position and acts even when the elevator arrives at the terminal floor normally.	4A
		Subcode 2: When the elevator runs in the down direction, both the up slow-down switch and up limit switch act.		4A
E44	Down limit signal abnormal	Subcode 1: When the elevator runs in the down direction, the down limit switch acts.	① Check the signal feature (NO, NC) of the down limit switch. ② Check whether the down limit switch is in good contact. ③ Check whether the limit switch is installed at a relatively high position and acts even when the elevator arrives at the terminal floor normally.	4A
		Subcode 2: When the elevator runs in the up direction, both the down slow-down switch and down limit switch act.		4A
E45	Slow-down switch	Subcode 1: The down slow-down distance is insufficient during	① Check whether the up and down slow-down switches are in good contact.	4B

Fault code	Fault description	Possible cause	Solution	Level
	abnormal	shaft auto-tuning.	② Check the signal feature (NO, NC) of the up and down slow-down switches. ③ Ensure that the obtained slow-down distance satisfies the slow-down requirement at the elevator speed.	
		Subcode 2: The up slow-down distance is insufficient during shaft auto-tuning.		
		Subcode 3: The slow-down switch is stuck or abnormal during normal running.		
		Subcode 6: The up and down slow-down switches 2 act improperly during shaft auto-tuning.	① Check whether the up and down slow-down switches 2 are wired correctly. ② Check the signal feature (NO, NC) of the up and down slow-down switches 2.	
		Subcode 7: The up and down slow-down switches 3 act improperly during shaft auto-tuning.	① Check whether the up and down slow-down switches 3 are wired correctly. ② Check the signal feature (NO, NC) of the up and down slow-down switches 3.	
E46	Re-leveling abnormal	Subcode 1: The leveling signal is inactive during re-leveling.	Check whether the leveling signal is normal.	2B
		Subcode 2: The re-leveling running speed exceeds 0.1 m/s.	Check whether the encoder is used properly.	
E47	Shorting door lock circuit contactor abnormal	Subcode 1: The shorting door lock circuit contactor outputs for continuous 2 s, but the feedback is invalid or the door lock feedback is disconnected.	① Check the signal feature (NO, NC) of the feedback contact on the shorting door lock circuit contactor. ② Check whether the shorting door lock circuit contactor acts properly.	2B
		Subcode 2: The shorting door lock		

Fault code	Fault description	Possible cause	Solution	Level
		circuit contactor has no output, but the feedback is valid for continuous 2 s.		
		Subcode 6: The feedback from the shorting door lock circuit contactor is valid before re-leveling.		
		Subcode 3: During re-leveling or pre-open running, the output time of the shoring door lock circuit contactor is larger than 15 s.	① Check whether the leveling and re-leveling signals are normal. ② Check whether the re-leveling speed is set too small.	
E48	Door open fault	Subcode 1: The consecutive times that the door does not open to the limit reaches the setting in P08-09.	① Check whether the door operator system works properly. ② Check whether the CTB output is normal. ③ Check whether the door open limit signal and door lock signal are normal.	5A
E49	Door close fault	Subcode 1: The consecutive times that the door does not close to the limit reaches the setting in P08-09.	① Check whether the door operator system works properly. ② Check whether the CTB output is normal. ③ Check whether the door close limit signal and door lock signal are normal.	5A
E50	Consecutive loss of leveling signal	Subcode 1: Leveling signal stuck is detected for three consecutive times.	① Check whether the leveling and door zone sensors work properly. ② Check the installation verticality and depth of the leveling plates. ③ Check the leveling signal input points of the MCB. ④ Check whether the steel rope slips.	5A
		Subcode 2: Leveling signal loss is detected for three consecutive times.		

Fault code	Fault description	Possible cause	Solution	Level
E51	CAN communication fault	Subcode 1: Feedback data of CAN communication with the CTB remains incorrect.	① Check the communication cable connection. ② Check the power supply of the CTB. ③ Check whether the 24 V power supply of the controller is normal. ④ Check whether there is strong-power interference on communication.	1A
E52	HCB communication fault	Subcode 1: Feedback data of Modbus communication with the HCB remains incorrect.	① Check the communication cable connection. ② Check whether the 24 V power supply of the controller is normal. ③ Check whether the HCB addresses are repeated. ④ Check whether there is strong-power interference on communication.	1A
E53	Door lock fault	Subcode 1: The door lock feedback signal remains active when the shorting door lock circuit is already canceled 3 s after door open output.	① Check whether the door lock circuit is shorted. ② Check whether the door lock feedback setting is correct.	5A
		Subcode 2: The states of the door lock multi-way feedback contacts are inconsistent, or the states of door lock 1 and door lock 2 are inconsistent.		
		Subcode 5: Door lock 1 shorting signal is active upon shorting door lock circuit output 3 s after door open output.		

Fault code	Fault description	Possible cause	Solution	Level
		Subcode 6: Door lock 2 shorting signal is active upon shorting door lock circuit output 3 s after door open output.		
		Subcode 4: The high-voltage and low-voltage door lock signals are inconsistent.	When the high-voltage and low-voltage door lock signals are detected at the same time, the time when the MCB receives the two signals has a deviation of above 1.5 s. This subcode can be reset at power-off and power-on again.	
		Subcode 7: The door lock shorting input is selected but the feedback signal remains off or disconnected.	Check whether the signal cable of door lock shorting feedback is not connected or breaks.	
E54	Overcurrent at inspection startup	Subcode 2: The current at startup for inspection exceeds 120% of the rated current.	① Reduce the load. ② Check whether the motor UVW phase sequence is correct. ③ Change PC.00 Bit1 to 1 to cancel the startup current detection function.	5A
E55	Stop at another landing floor	Subcode 1: During automatic running of the elevator, the door open limit is not received within the time threshold in P08-07.	Check the door open limit signal at the current floor.	1A
E56	Door open/close signal fault	Subcode 1: The door open limit signal is active during running.	① Check the door open and close NO/NC setting. ② Check wiring of the door open and close signals.	5A
		Subcode 2: The door close limit signal is active during running.		

Fault code	Fault description	Possible cause	Solution	Level
		Subcode 3: Both the door open and close signals are active.		
		Subcode 4: The door close limit signal keeps active at 3 s after door open. This fault subcode is detected after the door lock bypass is set.	Check whether the door open/close limit signals keep active.	
E57	SPI communication fault	Subcode 1&2: The communication between the MCB and the drive board is abnormal.	Check the wiring between the control board and the drive board.	5A
		Subcode 3: The MCB does not match the underlying drive.	Contact the agent or Megmeet.	
E58	Shaft position switches abnormal	Subcode 1: The up slow-down switch and down slow-down switch are disconnected simultaneously.	① Check whether the signal feature (NO, NC) of the slow-down switches and limit switches are consistent with the parameter setting of the MCB. ② Check whether malfunction of the slow-down switches and limit switches exists.	4B
		Subcode 2: The up limit feedback and down limit feedback are disconnected simultaneously.		
E59	Reserved	-	-	-
E60	Reserved	-	-	-
E61	Reserved	-	-	-
E62	Analog input cable broken	Subcode 1: The load cell analog input cable	① Check whether P10-00 (Load cell input selection) is set correctly.	3B

Fault code	Fault description	Possible cause	Solution	Level
		breaks.	② Check whether the analog input cable of the CTB or MCB is connected incorrectly or broken. ③ Adjust the load cell switch function.	
E64	Reserved	-	-	-
E65	UCMP detection abnormal	This fault is reported when the UCMP function is enabled or accidental car movement occurs.	Check that the motor brake is applied completely and the car will not move accidentally.	5A
E66	Braking force detection abnormal	The braking force detected is insufficient.	Detect the brake clearance.	5A
E69	Reserved	-	-	-
E70	Shorting motor stator contactor fault	Subcode 1: The rollback speed exceeds the limit after the braking by shorting motor stator.	Check the shorting motor stator contactor.	5A
		Subcode 2: The integrated shorting motor stator contactor is detected abnormal.	Check the shorting motor stator contactor.	5A

Caution

- ✧ Fault E41 is not reported in the elevator stop state.
- ✧ Fault E42 is reset automatically when the door lock circuit is switched on or 1 s after a fault occurs in the door zone.
- ✧ If faults E51, E52, and E57 persist, they are record once every one hour.

Chapter 11 Maintenance

The influence of the ambient temperature, humidity, dust and vibration will cause the aging of the components inside the controller, thereby leading to potential faults or reduced service life of the controller. Therefore, it is necessary to carry out routine and periodic maintenance.

11.1 Routine inspection

Caution

Follow the safety instructions below before inspection and maintenance. Otherwise, there will be an electric shock.

- ✧ The controller power supply has been cut off;
- ✧ The charge indicator is off;
- ✧ The voltage between DC+ and DC- measured by a DC high-voltage voltmeter shall be lower than 36 V.

The controller shall be operated in the environment specified in the section 3.1. It is recommended to conduct routine inspection, record daily running data, locate fault causes, and perform maintenance to prolong the lifespan.

Table 11-1 Routine inspection items

Item	Inspection			Inspection standard
	Aspect	Time	Means	
Environment	① Temperature and humidity	Anytime	① Thermometer and hygrometer	① -10℃ to +40℃, derating required for 40℃ to 50℃
	② Dust, water and drips		② Watch	② No dust, water and water drips
	③ Smell		③ Smell	③ No strange smell
Controller	① Vibration and heat	Anytime	① Touch the housing	① The vibration is small, and the fan works with normal housing temperature.
	② Noise		② Hear	② No strange sound
Motor	① Heat	Anytime	① Touch with hand	① No abnormal heat

Item	Inspection			Inspection standard
	Aspect	Time	Means	
	② Noise		② Hear	② Regular noise
Operation state	① Output current	Anytime	① Ammeter	① Three-phase balance, within the rated range
	② Output voltage		② Voltmeter	② Three-phase balance, within the rated range
	③ Internal temperature		③ Thermometer	③ The temperature difference compared to the environment is less than 35℃

11.2 Periodic maintenance

Conduct a thorough check on the controller every 3 months or 6 months depending on the environment.

Caution

- ✧ Only trained professionals are qualified to replace components and conduct maintenance.
- ✧ Do not leave screws or gaskets inside the equipment. Otherwise, there will be equipment damage.

Items for periodic checking:

(1) Fasten the screws on the control terminals with a screwdriver if they are loose.

(2) Check whether the main circuit terminals are in good contact, and whether overheat exists at the connection part of copper busbar.

(3) Check whether the power cables and control cables are damaged, especially whether the jackets are leaved with traces of cuts in contact with the metal surface.

(4) Check whether the insulation wrap on the power cable lug has come off.

(5) Clean the dust on the circuit boards and in the air duct. A dust collector is recommended.

(6) Before testing the grounding insulating performance of the controller, short all the input and output terminals (R, S, T, U, V, W, DC+, DC-, PB) of the main circuit first, and then conduct the grounding test. It is strictly forbidden to conduct the grounding test for a signal terminal. Otherwise, the controller will be damaged. Use a 500 V megger during the test.

(7) To test the insulating performance of the motor, you need to disconnect the input terminals U, V, W of the motor from the controller, and conduct test independently. Otherwise, the controller will be damaged.

Caution

- ✧ The controller has passed the dielectric strength test before delivery. Thus, you need not conduct the test again. Improper test may damage the controller.
- ✧ To replace the original components, make sure that the new components are the same models with same specifications. Otherwise, the controller will be damaged.

11.3 Replacement of quick-wear parts

Quick-wear parts of the controller include the cooling fan and filter electrolytic capacitor. Their service life is closely related to the operating environment and maintenance. The service life is listed in the following table.

Table 11-2 Service life of components

Component	Service life
Fan	30,000 to 40,000 hours
Electrolytic capacitor	40,000 to 50,000 hours
Relay	About 100,000 times

The general service life can be used as time reference to replace the parts.

(1) Cooling fan

Possible damage causes: bearing worn or blade aging.

Judging criteria: whether there is crack on the blade; and whether there is abnormal vibration noise at startup.

(2) Filter electrolytic capacitors

Possible damage causes: high ambient temperature, increased pulsating current caused by frequent load jumping or electrolytic aging.

Judging criteria: whether these is liquid leakage; whether the safety valve has projected; the value of the static capacitance; and the value of the insulation resistance.

(3) Relay

Possible damage causes: corrosion or frequent actions.

Judging criterion: on-off malfunction.

11.4 Storage of the controller

After purchasing the controller, pay attention to the following aspects for temporary and long-term storage:

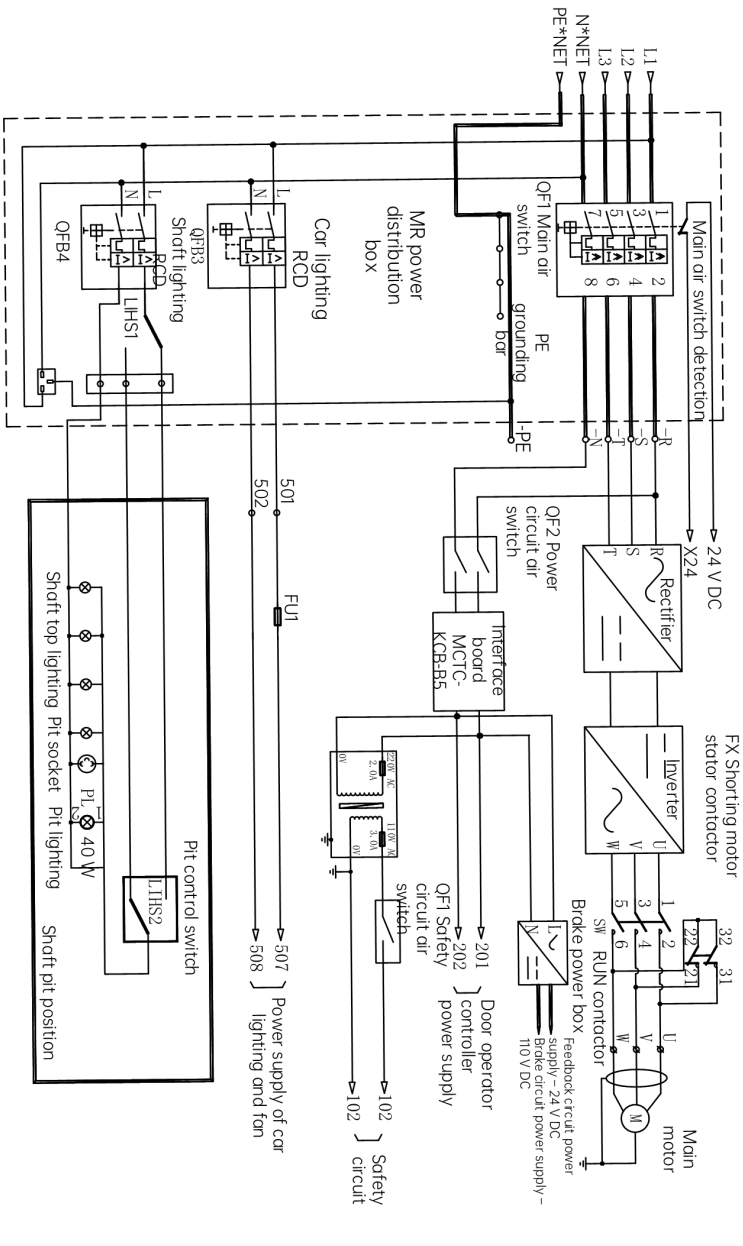
(1) Do not use the controller in the environment with high temperature, high humidity, lots of dust, metal power and the like. Ensure good ventilation.

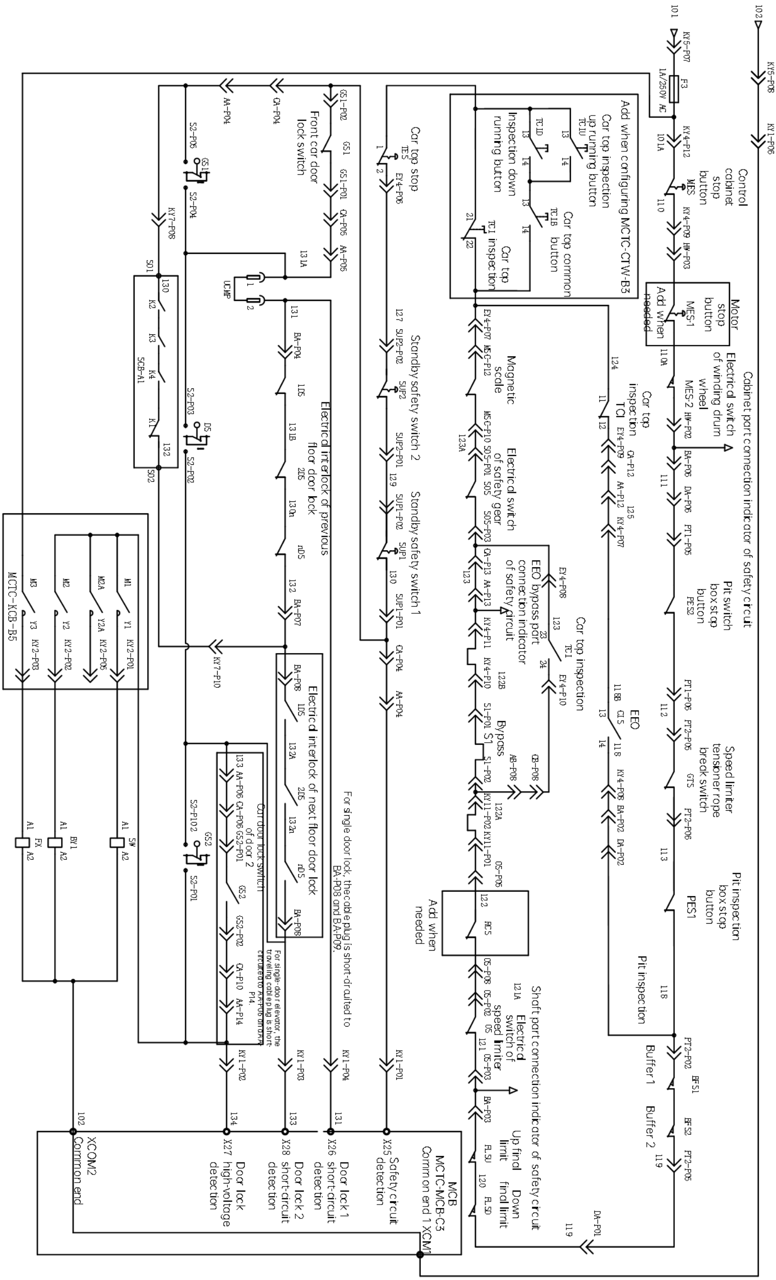
(2) Long-term storage degrades the electrolytic capacitor. Thus, the controller must be energized once every two years, with each time lasting at least five hours. The input voltage must be increased slowly to the rated value with the regulator.

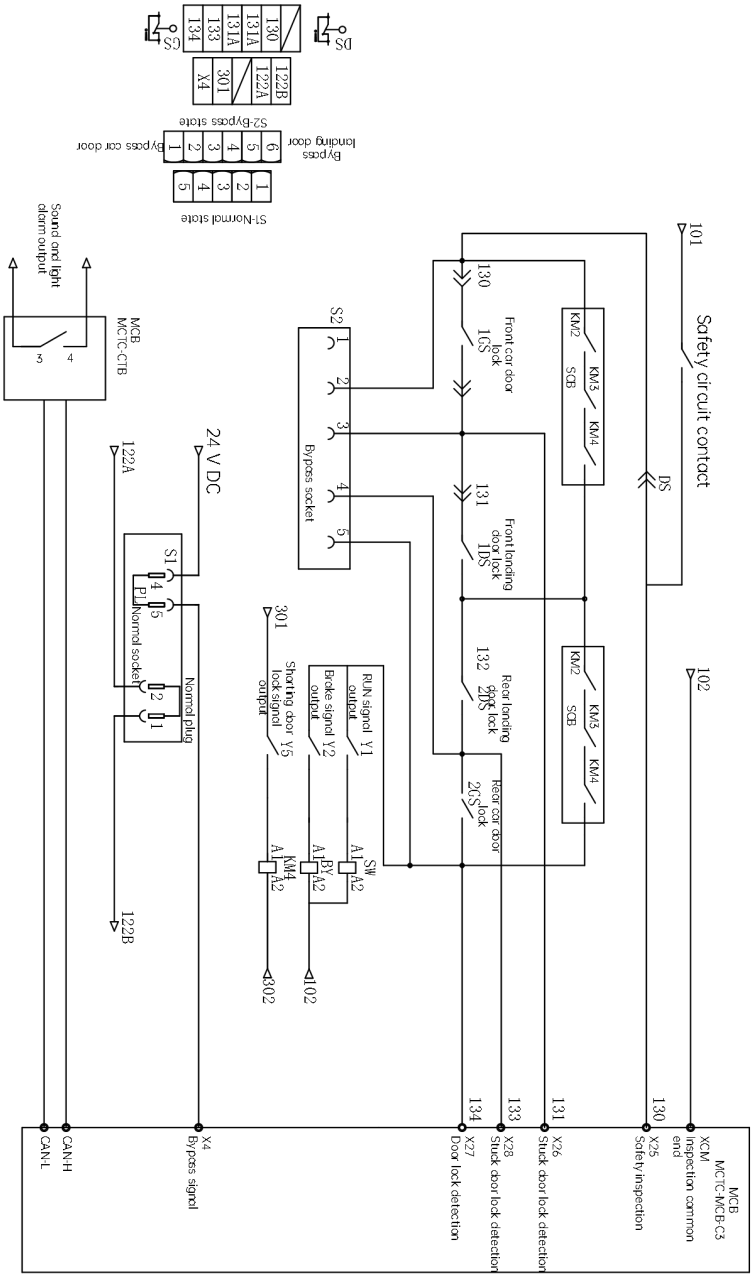
Appendix A Braking Resistor Table

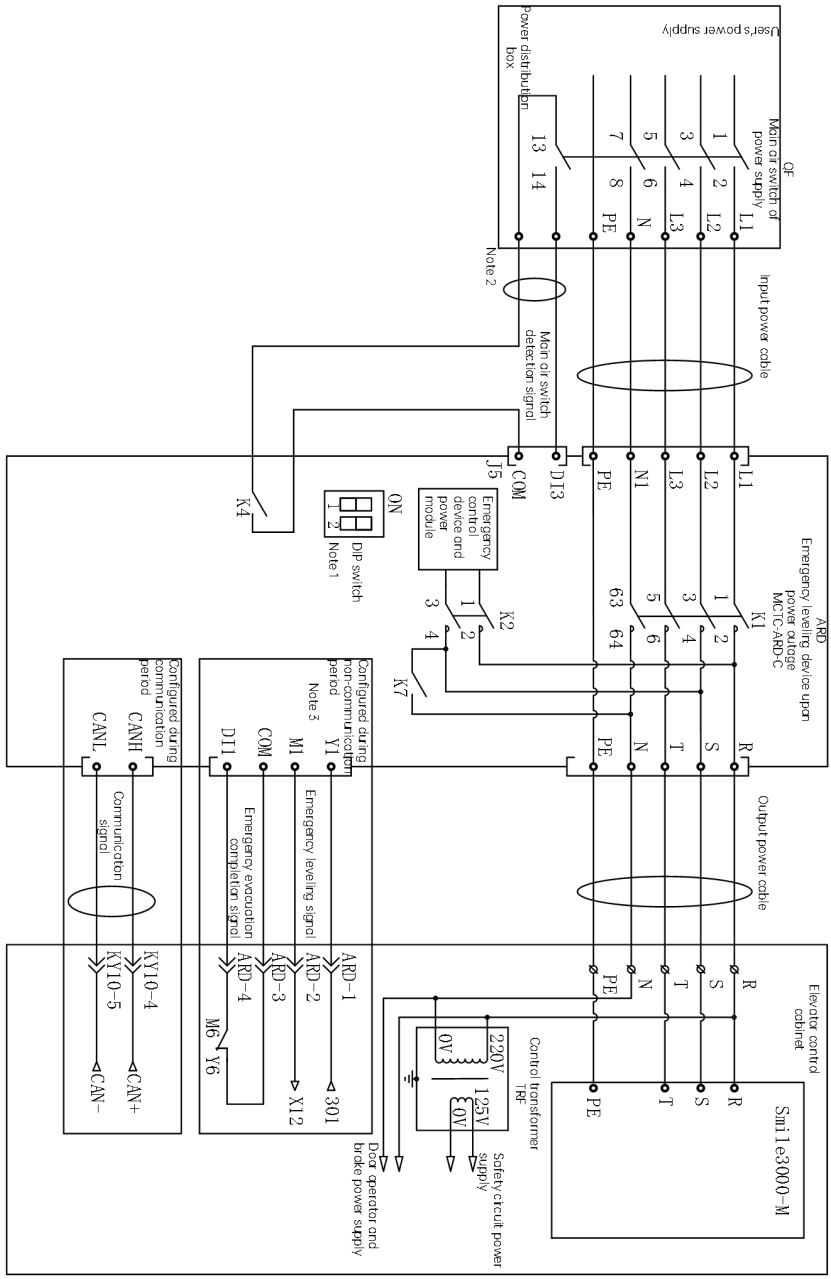
Control cabinet model	Maximum (Ω)	Minimum (Ω)	Power (W)
Smile3000-2S1.1	90	64	650
Smile3000-2S1.5	85	64	1000
Smile3000-2S2.2	58	50	1200
Smile3000-2S3.7	45	37	1600
Smile3000-2S5.5	32	18	2000
Smile3000-2T2.2	90	64	1200
Smile3000-2T3.7	85	64	1600
Smile3000-2T5.5	32	18	2000
Smile3000-2T7.5	23	17	2500
Smile3000-2T11	19	15	3000
Smile3000-4T5.5	108	82	1800
Smile3000-4T7.5	80	60	2500
Smile3000-4T11	56	43	3500
Smile3000-4T15	44	33	4500
Smile3000-4T18.5	36	27	5500
Smile3000-4T22	33	25	6400
Smile3000-4T30	21	16	9000
Smile3000-4T37	18	14	11000
Smile3000-4T45	14.5	11.5	15000

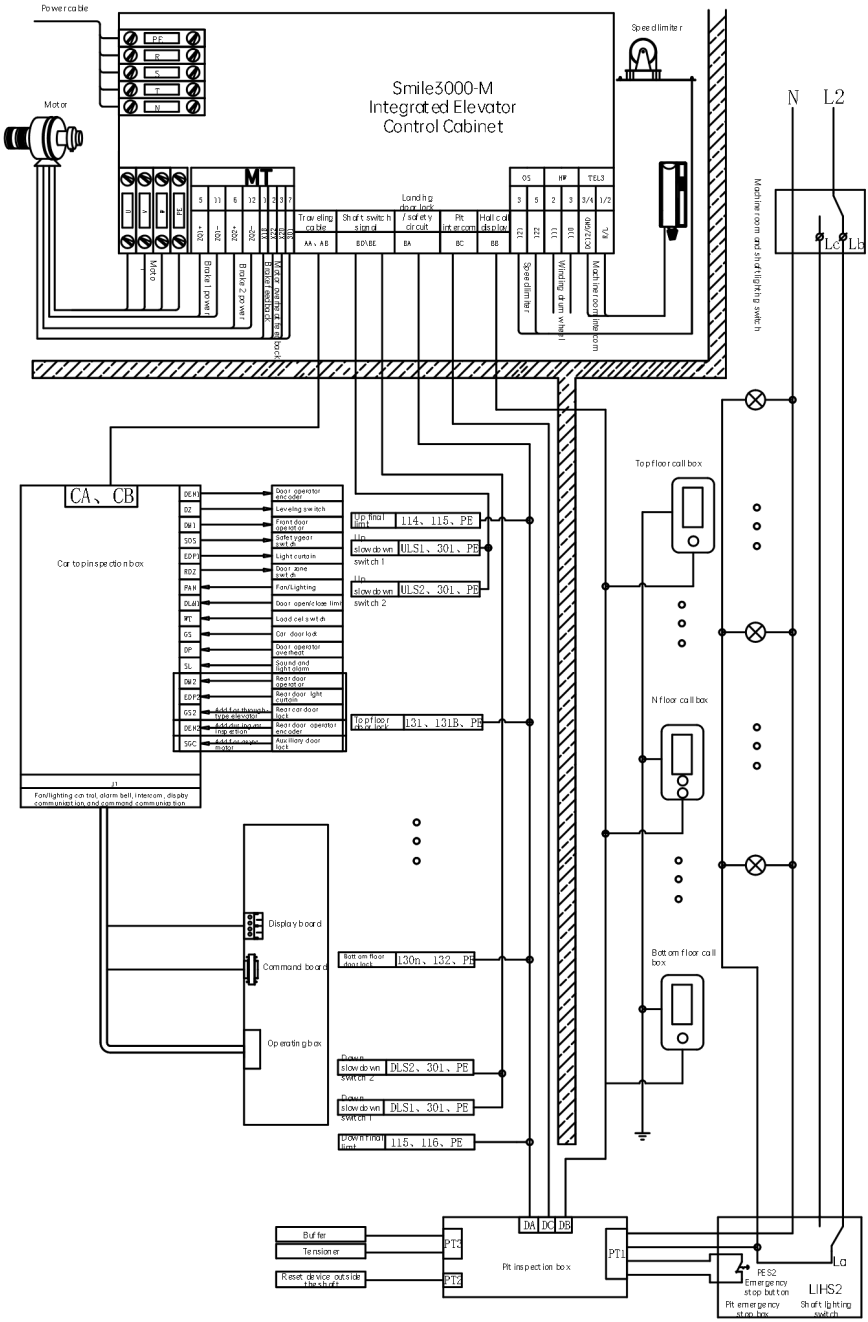
Appendix B System Wiring Diagrams

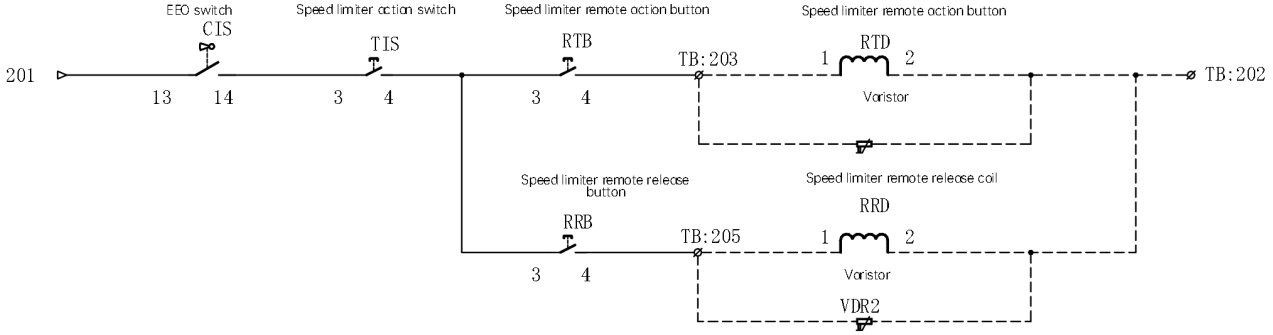



Cabinet part connection indicator of safety circuit
Control cabinet stop button
MES
F3
1A/250V AC
Motor stop button
MES-1
Add when needed
Electrical switch of winding drum wheel
MES-2
Pit switch box stop button
PES2
Speed limiter tensioner rope break switch
GTS
Pit inspection box stop button
PES1
Pit inspection
Buffer 1
BFS1
Buffer 2
BFS2
Shaft part connection indicator of safety circuit
Up final limit
FL.SU
Down final limit
FL.SD
Electrical switch of speed limiter
OS
Add when needed
ACS
Bypass
S1
EEO
Car top inspection
TCI
EEO bypass part connection indicator of safety circuit
Electrical switch of safety gear
SOS
Magnetic scale
Car top inspection
Add when configuring MCTC-CTW-B3
Car top inspection up running button
TCIU
Inspection down running button
TCID
Car top common button
TCIB
Car top inspection
Car top stop
TES
Standby safety switch 2
SUP2
Standby safety switch 1
SUP1
Front car door lock switch
GS1
Electrical interlock of previous floor door lock
Electrical interlock of next floor door lock
For single door lock, the cable plug is short-circuited to BA-P08 and BA-P09.
Car door lock switch of door 2
GS2
For single-door elevator, the traveling cable plug is short-circuited to AA-P06 and AA-P14.
UCMP
SCB-A1
MCTC-KCB-B5
MCB
MCTC-MCB-C3
Common end 1 XCOM1
X25 Safety circuit detection
X26 Door lock 1 short-circuit detection
X28 Door lock 2 short-circuit detection
X27 Door lock high-voltage detection
XCOM2 Common end

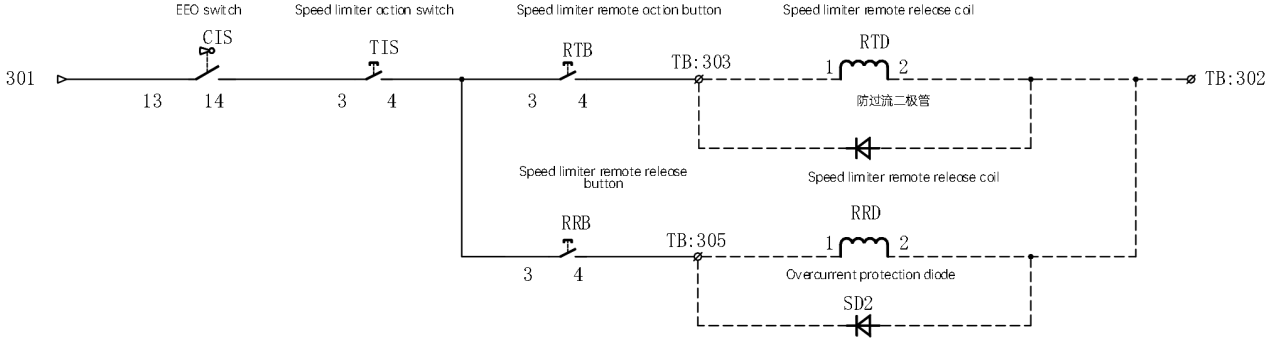

MCB
MCTC-MCB-C3
XCM
Inspection common end
X25
Safety inspection
X26
Stuck door lock detection
X28
Stuck door lock detection
X27
Door lock detection
X4
Bypass signal
CAN-H
CAN-L
101
Safety circuit contact
102
130
131
133
134
DS
KM2
KM3
KM4
SCB
Front car door lock
1GS
Front landing door lock
1DS
Rear landing door lock
2DS
Rear car door lock
2GS
S2
Bypass socket
RUN signal Y1 output
Brake signal Y2 output
Shorting door lock signal Y5 output
SW
BY
KM4
301
302
24 V DC
122A
122B
S1
Normal socket
Normal plug
MCB
MCTC-CTB
Sound and light alarm output
S1-Normal state
S2-Bypass state
Bypass car door
Bypass landing door
GS
DS
130
131A
133
134
301
X4
122B
122A


User's power supply
QF
Main air switch of power supply
L1
L2
L3
N
PE
Power distribution box
13
14
Note 2
Input power cable
Main air switch detection signal
J5
COM
DI3
K4
ON
DIP switch
Note 1
Emergency control device and power module
K2
K7
ARD
Emergency leveling device upon power outage
MCTC-ARD-C
K1
N1
63
64
Output power cable
R
S
T
Elevator control cabinet
Smile3000-M
Control transformer
TRF
220V
125V
0V
Safety circuit power supply
Door operator and brake power supply
Configured during non-communication period
Note 3
M1
Y1
COM
DI1
Emergency leveling signal
Emergency execution completion signal
ARD-1
ARD-2
ARD-3
ARD-4
301
X12
M6
Y6
Configured during communication period
CANH
CANL
Communication signal
KY10-4
KY10-5
CAN+
CAN-


Power cable
Motor
Smile3000-M
Integrated Elevator
Control Cabinet
Speed limiter
N
L2
Machine room and shaft lighting switch
Traveling cable
Shaft switch signal
Landing door lock / safety circuit
Pit intercom cable
Hall call display
Car top inspection box
Top floor call box
N floor call box
Bottom floor call box
Display board
Command board
Operating box
Buffer
Tensioner
Reset device outside the shaft
Pit inspection box
Pit emergency stop box
Shaft lighting switch
LIHS2



Mode 1: Speed limiter coil voltage = 220 V AC



Mode 2: Speed limiter coil voltage = 24 V AC

Note 1:
This circuit is applicable for MRL control cabinet.

Appendix C List of Parameters

C.1 Symbol definition

"○": The parameter can be modified when the controller is in either stop or running state.

"×": The parameter cannot be modified when the controller is in the running state.

"*": The parameter is the measured value and cannot be modified.

C.2 Parameter list

C.2.1 Quick-reference parameters

Parameter	Name	Range	Default	Unit	Property
A00: Motor and encoder parameters					
A00-00	Control mode	0: SVC 1: FVC 2: V/F 3: I/F	1	-	×
A00-01	Rated motor power	0.7 to 75.0	0	kw	×
A00-02	Rated motor voltage	0 to 600	0	V	×
A00-03	Rated motor current	0.00 to 655.00	0	A	×
A00-04	Rated motor frequency	0.00 to P00-06	0	Hz	×
A00-05	Rated motor speed	0 to 3000	0	rpm	×
A00-06	Wiring mode	0 to 1	0	-	×
A00-07	Encoder type selection	0: Sin/Cos 1: UVW 2: ABZ 3: Reserved	0	-	×
A00-08	Encoder pulses per revolution	0 to 10000	0	-	×
A00-09	Elevator running direction	0: Running direction unchanged	0	-	×

		1: Running direction reversed			
A00-10	Auto-tuning selection	0: No operation 1: Rotary with-load auto-tuning 2: Rotary no-load auto-tuning 3: Shaft auto-tuning 1 4: Shaft auto-tuning 2 5: Synchronous motor static auto-tuning	0	-	×
A00-11	Current encoder angle	Real-time encoder angle	-	-	×
A01: Basic elevator parameters					
A01-00	Rated elevator speed	0.250 to 4.000	1.600	m/s	×
A01-01	Maximum running speed of elevator	0.250 to P00-04	1.600	m/s	×
A01-02	Inspection speed	0.100 to 0.630	1	m/s	×
A01-03	Top floor of elevator	1 to 48	9	-	×
A01-04	Bottom floor of elevator	1 to 48	1	-	×
A01-05	Parking floor	P11-07 to P11-06	1	-	×
A01-06	Elevator lock floor	P11-07 to P11-06	1	-	×
A01-07	Fire emergency floor	P11-07 to P11-06	1	-	×
A01-08	Service floor 1	Corresponds to floors 1 to 16. 0: No respond 1: Respond	65535	-	×
A01-09	Service floor 2	Corresponds to floors 17 to 32. 0: No respond 1: Respond	65535	-	×
A01-10	Service floor 3	Corresponds to floors 33 to 40. 0: No respond 1: Respond	65535	-	×
A01-11	Service floor 1 of door operator 1	0 to 65535	65535	-	×

A01-12	Service floor 2 of door operator 1	0 to 65535	65535	-	×
A01-13	Service floor 3 of door operator 1	0 to 65535	65535	-	×
A01-14	Service floor 1 of door operator 2	0 to 65535	65535	-	×
A01-15	Service floor 2 of door operator 2	0 to 65535	65535	-	×
A01-16	Service floor 3 of door operator 2	0 to 65535	65535	-	×
A02: Door open and close parameters					
A02-00	Door open holding time for hall call	1 to 1000	5	s	×
A02-01	Door open holding time for car call	1 to 1000	3	s	×
A02-02	Duration of door open holding delay	10 to 1000	30	s	×
A02-03	Through-type door control selection	0: Simultaneous control for door open/close 1: Independent control for door open/close for hall calls, and simultaneous control for car calls 2: Independent control for door open/close for hall calls, and manual control for car calls 3: Independent control for hall calls and car calls	0	-	×
A03: Floor display parameters					
A03-00	Reserved	0 to 9999 The two high bits indicate the display code of tens place of the floor number, and the two low bits indicate the display code of ones place.	-	-	×
A03-01	Floor 1 display		1901	-	×
A03-02	Floor 2 display		1902	-	×
A03-03	Floor 3 display		1903	-	×
A03-04	Floor 4 display		1904	-	×

A03-05	Floor 5 display	00: Display "0" 01: Display "1" 02: Display "2" 03: Display "3" 04: Display "4" 05: Display "5" 06: Display "6" 07: Display "7" 08: Display "8" 09: Display "9" 10: Display "A" 11: Display "B" 12: Display "G" 13: Display "H" 14: Display "L" 15: Display "M" 16: Display "P" 17: Display "R" 18: Display "-" 19: No display 20: Display "12" 21: Display "13" 22: Display "23" > 22: No display	1905	-	×
A03-06	Floor 6 display		1906	-	×
A03-07	Floor 7 display		1907	-	×
A03-08	Floor 8 display		1908	-	×
A03-09	Floor 9 display		1909	-	×
A03-10	Floor 10 display		100	-	×
A03-11	Floor 11 display		101	-	×
A03-12	Floor 12 display		102	-	×
A03-13	Floor 13 display		103	-	×
A03-14	Floor 14 display		104	-	×
A03-15	Floor 15 display		105	-	×
A03-16	Floor 16 display		106	-	×
A03-17	Floor 17 display		107	-	×
A03-18	Floor 18 display		108	-	×
A03-19	Floor 19 display		109	-	×
A03-20	Floor 20 display		200	-	×
A03-21	Floor 21 display		201	-	×
A03-22	Floor 22 display		202	-	×
A03-23	Floor 23 display		203	-	×
A03-24	Floor 24 display		204	-	×
A03-25	Floor 25 display		205	-	×
A03-26	Floor 26 display		206	-	×
A03-27	Floor 27 display		207	-	×
A03-28	Floor 28 display		208	-	×
A03-29	Floor 29 display		209	-	×
A03-30	Floor 30 display		300	-	×
A03-31	Floor 31 display		301	-	×

A03-32	Floor 32 display		302	-	×
A03-33	Floor 33 display		303	-	×
A03-34	Floor 34 display		304	-	×
A03-35	Floor 35 display		305	-	×
A03-36	Floor 36 display		306	-	×
A03-37	Floor 37 display		307	-	×
A03-38	Floor 38 display		308	-	×
A03-39	Floor 39 display		309	-	×
A03-40	Floor 40 display		400	-	×
A03-41	Floor 41 display		0	-	×
A03-42	Floor 42 display		0	-	×
A03-43	Floor 43 display		0	-	×
A03-44	Floor 44 display		0	-	×
A03-45	Floor 45 display		0	-	×
A03-46	Floor 46 display		0	-	×
A03-47	Floor 47 display		0	-	×
A03-48	Floor 48 display		0	-	×
A04: Shaft auto-tuning parameters					
A04-00	Shaft auto-tuning speed	0.100 to 0.630	0.250	m/s	×
A04-01	Auto-tuning selection	0: No operation 1: Rotary with-load auto-tuning 2: Rotary no-load auto-tuning 3: Shaft auto-tuning 1 4: Shaft auto-tuning 2 5: Synchronous motor static auto-tuning	0	-	×

C.2.2 Function parameters

Parameter	Name	Range	Default	Unit	Property
P00: Basic parameters					
P00-00	Control mode	0: SVC 1: FVC 2: V/F 3: I/F	1	-	×
P00-01	Command source selection	0: Operating panel control 1: Distance control	1	-	×
P00-02	Running speed under operating panel control	0.050 to P00-04	0.050	m/s	○
P00-03	Maximum running speed of elevator	0.250 to P00-04	1.600	m/s	×
P00-04	Rated elevator speed	0.250 to 4.000	1.600	m/s	×
P00-05	Rated load	300 to 9999	1000	kg	×
P00-06	Maximum frequency	P02-04 to 99.00	50.00	Hz	×
P00-07	Elevator running direction	0: Direction unchanged 1: Direction reversed	0	-	×
P00-08	Carrier frequency	0.5 to 16.0 kHz	6.0	kHz	×
P01: User parameters					
P01-00	Level 1 password	0 to 65535 0: No password	0	-	○
P01-01	Parameter update	0: Not available 1: Restoring default parameters 2: Clearing records 3: Clearing shaft data	0	-	×
P01-02	Check on user-defined parameters	0: Inactive 1: Active	0	-	×
P01-03	Level 2 password	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
P01-04	Level 3 password	0 to 65535	0	-	×
P01-05 to P01-10	Reserved	-	-	-	
P02: Motor parameters					
P02-00	Motor type	0: Asynchronous motor 1: Synchronous motor	1	-	×
P02-01	Rated motor power	0.7 to 75.0	11.0	kW	×
P02-02	Rated motor voltage	0 to 600	380	V	×
P02-03	Rated motor current	0.00 to 655.00	21.8	A	×
P02-04	Rated motor frequency	0.00 to P00-06	50.00	Hz	×
P02-05	Rated motor speed	0 to 3000	1460	rpm	×
P02-06	Wiring mode	Synchronous motor	0	-	×
P02-07	DSP fault block	0 to 65535	0	-	×
P02-08	Encoder type selection	0: Sin/Cos encoder 1: UVW encoder 2: ABZ encoder 3: Reserved	0	-	×
P02-09	Encoder pulses per revolution	0 to 10000	2048	PPR	×
P02-10	Encoder disconnection detection time	0 to 10.0 (When the value is smaller than 0.5 s, this function is disabled.)	2.1	s	×
P02-11	Auto-tuning selection	0: No operation 1: Rotary with-load auto-tuning 2: Rotary no-load auto-tuning 3: Shaft auto-tuning 1 4: Shaft auto-tuning 2 5: Synchronous motor static auto-tuning	0	-	×

Parameter	Name	Range	Default	Unit	Property
P02-12	Encoder installation angle	0.0 to 359.9	0	°	×
P02-13	Stator resistance	0.000 to 30.000	0.400	Ω	×
P02-14	Rotor resistance	0.000 to 30.000	0.001	Ω	×
P02-15	Leakage inductance	0.00 to 300.00	0.01	mH	×
P02-16	Mutual inductance	0.1 to 3000.0	0.1	mH	×
P02-17	No-load current	0.01 to 300.00	0.01	A	×
P02-18	Q-axis inductance	0.00 to 650.00	3.00	mH	×
P02-19	D-axis inductance	0.00 to 650.00	3.00	mH	×
P02-20	Back EMF coefficient	0 to 65535	0	-	×
P02-21 to P02-23	Reserved	-	-	-	
P03: Speed control parameters					
P03-00	Re-leveling speed	0.020 to 0.080	0.040	m/s	×
P03-01	Inspection speed	0.100 to 0.630	0.250	m/s	×
P03-02	Low-speed re-leveling speed	0.080 to P03-01	0.100	m/s	×
P03-03	Emergency evacuation speed at power failure	0.020 to 0.300	0.050	m/s	×
P03-04	Emergency evacuation switching speed	0.010 to 0.630	0.010	m/s	×
P03-05	Elevator speed in the EEO state	0.100 to 0.300	0.250	m/s	×
P03-06	Shaft auto-tuning speed	0.100 to 0.630	0.250	m/s	×
P04: Vector control parameters					
P04-00	Speed loop proportional gain 1	0 to 100	15	-	×
P04-01	Speed loop integral time 1	0.01 to 10.00	0.80	s	×

Parameter	Name	Range	Default	Unit	Property
P04-02	Switchover frequency 1	0.00 to P04-05	2.00	Hz	×
P04-03	Speed loop proportional gain 2	0 to 100	20	-	×
P04-04	Speed loop integral time 2	0.01 to 10.00	0.80	s	×
P04-05	Switchover frequency 2	P04-02 to P00-06	9.00	Hz	×
P04-06	Current loop proportional gain	10 to 500	100	-	×
P04-07	Current loop integral gain	10 to 500	100	-	×
P04-08	Torque upper limit	0.0 to 200.0	200.0	%	×
P04-09	Zero servo gain coefficient	2.0 to 50.0	5.0	%	×
P04-10	Zero servo speed loop KP	0.01 to 2.00	0.40	-	×
P04-11	Zero servo speed loop KI	0.01 to 2.00	1.00	-	×
P04-12	Reserved	-	-	-	
P04-13	Reserved	-	-	-	
P04-14	Torque acceleration time	1 to 500	1	ms	×
P04-15	Torque deceleration time	1 to 3000	350	ms	×
P04-16	Startup acceleration time	0.000 to 1.500	0.000	s	×
P04-17	Speed filter coefficient	0.00 to 20.00	0.20	ms	×
P04-18	Function setting	0 to 65535	0	-	○
P04-19	Obtained pulse width	0 to 100	8	-	×
P04-20 to P04-23	Reserved	-	-	-	
P04-24	Number of motor pole pairs	0 to 100	8	-	×
P04-25	IF current limit	0 to 200	30	%	○
P04-26	Current upper threshold	0 to 200	100	%	×

Parameter	Name	Range	Default	Unit	Property
P04-27	Current lower threshold	0 to 200	60	%	×
P04-28	Reserved	-	-	-	
P04-29	Encoder AB direction	0 to 1	0	-	×
P04-30	Encoder CD direction	0 to 1	0	-	×
P04-31	IF function selection	0 to 1	0	-	×
P04-32	IF DC angle setting	0.0 to 360.0	0.0	-	○
P04-33	Inspection running speed at rollback during shorting motor stator period	0.050 to P00-04	0.300	m/s	○
P04-34	Inspection running time for rollback during shorting motor stator period	0.0 to 20.0	4.0	s	○
P05: Running control parameters					
P05-00	Startup speed	0.000 to 0.050	0.000	m/s	×
P05-01	Startup speed holding time	0.000 to 5.000	0.000	s	×
P05-02	Acceleration rate	0.200 to 1.500	0.700	m/s^2	×
P05-03	Acceleration start segment	0.300 to 4.000	1.500	s	×
P05-04	Acceleration end segment	0.300 to 4.000	1.500	s	×
P05-05	Deceleration rate	0.200 to 1.500	0.700	m/s^2	×
P05-06	Deceleration end segment	0.300 to 4.000	1.500	s	×
P05-07	Deceleration start segment	0.300 to 4.000	1.500	s	×
P05-08	Special deceleration rate	0.500 to 1.500	0.900	m/s^2	×
P05-09	Pre-deceleration distance	0 to 90.0	0.0	mm	×

Parameter	Name	Range	Default	Unit	Property
P05-10	Position of up slow-down switch 1	0.00 to 300.00	0.00	m	×
P05-11	Position of down slow-down switch 1	0.00 to 300.00	0.00	m	×
P05-12	Position of up slow-down switch 2	0.00 to 300.00	0.00	m	×
P05-13	Position of down slow-down switch 2	0.00 to 300.00	0.00	m	×
P05-14	Position of up slow-down switch 3	0.00 to 300.00	0.00	m	×
P05-15	Position of down slow-down switch 3	0.00 to 300.00	0.00	m	×
P05-16	Zero-speed current output time	0.200 to 1.000	0.200	s	×
P05-17	Holding time of zero-speed torque current upon brake release	0.000 to 2.000	0.600	s	×
P05-18	Zero-speed control time at end	0.000 to 0.500	0.300	s	×
P05-19	Acceleration rate at emergency evacuation	0.100 to 1.300	0.300	m/s^2	×
P05-20	Deceleration delay time upon hitting slow-down switch	0.00 to 10.00	0	s	×
P05-21	Slip test	0 to 2	0	-	×
P06: MCB terminal parameters					
P06-00	Reserved	-	-	-	
P06-01	X1 function selection	00 to 199 (NO: 0 to 99) (NC=NO+100)	1	-	×
P06-02	X2 function selection		3	-	×
P06-03	X3 function selection		2	-	×

Parameter	Name	Range	Default	Unit	Property
P06-04	X4 function selection	00: Inactive 01: Up leveling input 02: Down leveling input 03: Door zone input 04: Safety circuit feedback input 05: Door lock circuit feedback input 06: RUN contactor output feedback input 07: Brake output feedback input 08: Inspection signal input 09: Inspection up signal input 10: Inspection down signal input 11: Fire emergency signal input 12: Up limit signal input 13: Down limit signal input 14: Overload NO input 15: Full-load NO input 16: Up slow-down 1 input 17: Down slow-down 1 input 18: Up slow-down 2 input 19: Down slow-down 2 input 20: Up slow-down 3 input 21: Down slow-down 3 input 22: Shorting door lock circuit output feedback input 23: Firefighter running input 24: Door operator 1 light curtain input 25: Door operator 2 light curtain input 26: Brake travel switch 1 feedback input 27: UPS	22	-	×
P06-05	X5 function selection		130	-	×
P06-06	X6 function selection		106	-	×
P06-07	X7 function selection		107	-	×
P06-08	X8 function selection		132	-	×
P06-09	X9 function selection		50	-	×
P06-10	X10 function selection		57	-	×
P06-11	X11 function selection		154	-	×
P06-12	X12 function selection		152	-	×
P06-13	X13 function selection		9	-	×
P06-14	X14 function selection		10	-	×
P06-15	X15 function selection		116	-	×
P06-16	X16 function selection		118	-	×
P06-17	X17 function selection		117	-	×
P06-18	X18 function selection		119	-	×
P06-19	X19 function selection		126	-	×
P06-20	X20 function selection		146	-	×
P06-21	X21 function selection		147	-	×
P06-22	X22 function selection		58	-	×
P06-23	X23 function selection		27	-	×
P06-24	X24 function selection		0	-	×

Parameter	Name	Range	Default	Unit	Property
		28: Elevator lock NO input 29: Safety circuit input 2 30: Synchronous motor shorting motor stator feedback input 31: Door lock circuit 2 feedback input 32: Brake 2 output feedback input 33: Door operator 1 safety edge input 34: Door operator 2 safety edge input 35: Reserved 36: Earthquake signal input 37: Rear door forbidden input 38: Light-load input 39: Half-load input 40: Fire emergency floor switchover input 41: Dummy floor input 42: Motor overheat input 43: ARD fault input 44: Door 1 open input 45: Door 2 open input 46: Brake travel switch 2 feedback input 47: External fault input 48: Terminal floor signal input 49: Door lock 1 shorting input 50: Door lock 2 shorting input 51: Reserved 52: EEO input 53: Reserved 54: Door lock bypass input 55: Reserved			

Parameter	Name	Range	Default	Unit	Property
		56: Rope gripper feedback input 57: Electric brake release input 58: Forced electric brake release input 59: Reserved 60: KAM feedback input 61: Maintenance switch input 62: Integrated shorting motor stator contactor online input			
P06-25	X25 function selection	0: Inactive 1 to 3: Reserved 4: Safety circuit signal 5: Door lock circuit signal 6: Door lock circuit signal 2 7: Door lock 1 shorting detection 8: Door lock 2 shorting detection	4	-	×
P06-26	X26 function selection		7	-	×
P06-27	X27 function selection		8	-	×
P06-28	X28 function selection		5	-	×
P06-29	X29 function selection	Same as X1 to X24	0	-	×
P06-30	X30 function selection		0	-	×
P06-31	X31 function selection		114	-	×
P06-32	X32 function selection		0	-	×
P06-33	X33 function selection		11	-	×
P06-34	X34 function selection		36	-	×
P06-35	Y1 function selection	0 to 31 00: Inactive 01: RUN contactor output 02: Brake contactor output 03: Shorting door lock circuit contactor output 04: Fire emergency floor arrival signal	12	-	×
P06-36	Y2 function selection		1	-	×
P06-37	Y3 function selection		2	-	×
P06-38	Y4 function selection		24	-	×
P06-39	Y5 function selection		28	-	×
P06-40	Y6 function selection		27	-	×
P06-41	Y7 function selection		3	-	×

Parameter	Name	Range	Default	Unit	Property
P06-42	Y8 function selection	05: Door operator 1 open 06: Door operator 1 close 07: Door operator 2 open 08: Door operator 2 close 09: Brake and RUN contactors normal (when E37 or E36 is triggered, it indicates that the brake contactor or RUN contactor is abnormal) 10: Fault state (output upon level 3, level 4 or level 5 fault state) 11: Running state output 12: Synchronous motor shorting motor stator contactor output 13: Emergency evacuation automatic switchover 14: Controller normal 15: Emergency buzzer output 16: High-voltage startup of brake (output kept for 4 s to release the brake) 17: Elevator up signal 18: Lighting/Fan output 19: Medical sterilization output 20: Non-door zone stop 21: Electromagnetic lock control output 22: Non-service state output 23: Emergency evacuation completed output 24: Brake contactor 2 output 25: Rope gripper reset 26: Destination floor arrival output 27: Electric brake release output	4	-	×
P06-43	Y9 function selection		0	-	×
P06-44	Y10 function selection		23	-	×

Parameter	Name	Range	Default	Unit	Property
		28: KAM output 29: Speed limiter test output 30: Speed limiter reset output			
P07: CTB terminal parameters					
P07-00	Reserved	-	-	-	
P07-01	CTB input X1	(NC: NO+100) 0: Inactive 1: Light curtain 1 2: Light curtain 2 3: Door open limit 1 4: Door open limit 2 5: Door close limit 1 6: Door close limit 2 7: Full-load input 8: Overload input 9: Light-load input 10: Up leveling 11: Down leveling 12: Front door operator overheat 13: Inspection 14: Inspection up 15: Inspection down 16: Rear door operator overheat 17: Front door safety edge 18: Rear door safety edge 19: Motor overheat protection 20: Up slow-down 1 NO input 21: Down slow-down 1 NO input 22: Up slow-down 2 NO input 23: Down slow-down 2 NO input	103	-	×
P07-02	CTB input X2		105	-	×
P07-03	CTB input X3		112	-	×
P07-04	CTB input X4		101	-	×
P07-05	CTB input X5		117	-	×
P07-06	CTB input X6		104	-	×
P07-07	CTB input X7		106	-	×
P07-08	CTB input X8		116	-	×
P07-09	CTB input X9		102	-	×
P07-10	CTB input X10		118	-	×
P07-11	CTB input X11		119	-	×
P07-12	CTB input X12		113	-	×
P07-13	CTB input X13		14	-	×
P07-14	CTB input X14		15	-	×
P07-15	CTB input X15		120	-	×
P07-16	CTB input X16		121	-	×
P07-17	CTB input X17		122	-	×
P07-18	CTB input X18		123	-	×
P07-19	CTB input X19		10	-	×
P07-20	CTB input X20		11	-	×
P07-21	CTB input X21		108	-	×
P07-22	CTB input X22		9	-	×

Parameter	Name	Range	Default	Unit	Property
P07-23	CTB input X23		0	-	×
P07-24	CTB input X24		0	-	×
P07-25	CTB output Y1	0 to 31 0: Reserved 1: Door 1 open 2: Door 1 close 3: Forced door 1 close 4: Door 2 open 5: Door 2 close 6: Forced door 2 close 7: Up arrival gong 8: Down arrival gong 9: Arrival gong 10: Fault 11: Sound and light alarm 14: Forced output 15: Fan 16: Lighting 17: Run enable 18: Elevator non-overspeed output (output disabled during elevator overspeed running) 19: Automatic dial-out (it will be output if the elevator stops and remains in a non-door zone for over 60 seconds during non-inspection period)	1	-	×
P07-26	CTB output Y2		2	-	×
P07-27	CTB output Y3		3	-	×
P07-28	CTB output Y4		4	-	×
P07-29	CTB output Y5		5	-	×
P07-30	CTB output Y6		6	-	×
P07-31	CTB output Y7		7	-	×
P07-32	CTB output Y8		8	-	×
P07-33	CTB output Y9		11	-	×
P07-34	CTB output Y10		16	-	×
P07-35	CTB output Y11		15	-	×
P07-36	CTB output Y12		0	-	×
P07-37	CTB output Y13		0	-	×
P07-38	CTB output Y14		0	-	×
P07-39	CTB output Y15		0	-	×
P07-40	CTB output Y16		0	-	×
P08: Door operator parameters					
P08-00	Number of door operators	1 to 2	1	-	×
P08-01	Service floor 1 of door operator 1	0 to 65535	65535	-	○

Parameter	Name	Range	Default	Unit	Property
P08-02	Service floor 2 of door operator 1	0 to 65535	65535	-	○
P08-03	Service floor 3 of door operator 1	0 to 65535	65535	-	○
P08-04	Service floor 1 of door operator 2	0 to 65535	65535	-	○
P08-05	Service floor 2 of door operator 2	0 to 65535	65535	-	○
P08-06	Service floor 3 of door operator 2	0 to 65535	65535	-	○
P08-07	Door open protection time	5 to 99	10	s	○
P08-08	Door close protection time	5 to 99	15	s	○
P08-09	Door open/close times	0 to 20	0	-	○
P08-10	Door state of standby elevator	0: Normal door close at main floor 1: Waiting with door open at main floor 2: Waiting with door open at each floor	0	-	○
P08-11	Door open holding time for hall call	1 to 1000	5	s	○
P08-12	Door open holding time for car call	1 to 1000	3	s	○
P08-13	Door open holding time at main floor	1 to 1000	10	s	○
P08-14	Duration of door open holding time delay	10 to 1000	30	s	○
P08-15	Special door open holding time	10 to 1000	30	s	○
P08-16	Manually operated door open limit delay	1 to 60	5	s	○

Parameter	Name	Range	Default	Unit	Property
P08-17	Waiting time for forced door close	5 to 180	120	s	○
P08-18	Manually operated door lock waiting time	0 to 60	0	-	○
P08-19	Arrival gong output delay	0 to 1000	0	ms	○
P08-20	Through-type door control selection	0: Simultaneous control for door open/close 1: Independent control for door open/close for hall calls, and simultaneous control for car calls 2: Independent control for door open/close for hall calls, and manual control for car calls 3: Independent control for hall calls and car calls	0	-	×
P09: Hall call parameters					
P09-00	HCB-JP1 input	0 to 63	1	-	×
P09-01	HCB-JP2 input	0: Reserved 1: Elevator lock signal 2: Fire emergency signal 3: Current floor forbidden 4: VIP signal 5: Security signal 6: Door close button input 7: Fire emergency floor 2 signal input	2	-	×
P09-02	HCB-JP1 output	0 to 15	1	-	×
P09-03	HCB-JP2 output	0: Reserved 1: Up arrival indicator 2: Down arrival indicator 3: Fault signal 4: Non-door zone stop	2	-	×

Parameter	Name	Range	Default	Unit	Property
		5: Non-service state output 6: Door close button output			
P09-04	Start address of hall call auxiliary command	0 to 40	0	-	×
P09-05	Hall call protocol selection	0 to 65535	0	-	○
P09-06	Hall call parameter setting	0 to 65535	0	-	○
P09-07	Hall call address verification	0 to 65535	0	-	○
P10: Load cell parameters					
P10-00	Load cell input selection	0: Inactive 1: Car call digital input 2: Car call analog input 3: MCB analog input 4: MCB digital input	1	-	×
P10-01	Car load ratio during load cell auto-tuning	0 to 100	0	%	×
P10-02	Current car load	0 to 255	0	-	*
P10-03	No-load measured by load cell	0 to 255	0	-	×
P10-04	Full-load measured by load cell	0 to 255	100	-	×
P10-05	Anti-nuisance function	Bit0: Nuisance judged by load cell Bit1: Nuisance judged by light curtain Bit2: Nuisance judged by light-load signal	0	-	○
P11: Basic elevator parameters					
P11-00	Leveling adjustment	0 to 60	30	mm	×
P11-01	Current floor	P11-07 to P11-06	1	-	×

Parameter	Name	Range	Default	Unit	Property
P11-02	High bits of current floor position	0 to 65535	0	-	×
P11-03	Low bits of current floor position	0 to 65535	0	-	×
P11-04	Leveling plate length 1	0 to 65535	0	-	×
P11-05	Leveling plate length 2	0 to 65535	0	-	×
P11-06	Top floor of elevator	P11-07 to 48	9	-	×
P11-07	Bottom floor of elevator	1 to P11-06	1	-	×
P11-08	Parking floor for idle elevator	P11-07 to P11-06	1	-	×
P11-09	Fire emergency floor	P11-07 to P11-06	1	-	×
P11-10	Fire emergency floor 2	0 to P11-06	0	-	×
P11-11	Parking floor for elevator lockout	P11-07 to P11-06	1	-	×
P11-12	VIP floor	0 to P11-06	0	-	×
P11-13	Emergency evacuation parking floor	0 to P11-06	0	-	×
P11-14	Security floor	0 to P11-06	0	-	×
P11-15	Service floor 1	0 to 65535 (Floors 1 to 16) 0: No respond 1: Respond	65535	-	×
P11-16	Service floor 2	0 to 65535 (Floors 17 to 32) 0: No respond 1: Respond	65535	-	×
P11-17	Service floor 3	0 to 65535 (Floors 33 to 40) 0: No respond 1: Respond	65535	-	○

Parameter	Name	Range	Default	Unit	Property
P11-18	Number of elevators in group control	1 to 8	1	-	×
P11-19	Elevator serial number	1 to 8	1	-	×
P11-20	Floor offset in parallel control	0 to 40	0	-	×
P11-21	Program selection	0 to 65535	0	-	×
P11-22	Leveling sensor delay	10 to 50	14	ms	×
P11-23	Collective selective mode	0: Full collective selective 1: Down collective selective 2: Up collective selective	0	-	×
P11-24	Start time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	×
P11-25	End time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	×
P11-26	Start time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	×
P11-27	End time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	×
P11-28	Start time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	×
P11-29	End time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	×
P11-30	Service floor 1 of time-based floor service 1	0 to 65535	65535	-	×
P11-31	Service floor 2 of time-based floor service 1	0 to 65535	65535	-	×
P11-32	Service floor 3 of time-based floor service 1	0 to 65535	65535	-	×
P11-33	Start time of time-based floor service 2	00.00 to 23.59	00.00	HH.MM	×
P11-34	End time of time-based	00.00 to 23.59	00.00	HH.	×

Parameter	Name	Range	Default	Unit	Property
	floor service 2			MM	
P11-35	Service floor 1 of time-based floor service 2	0 to 65535	65535	-	×
P11-36	Service floor 2 of time-based floor service 2	0 to 65535	65535	-	×
P11-37	Service floor 3 of time-based floor service 2	0 to 65535	65535	-	×
P11-38	Peak 1 start time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-39	Peak 1 end time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-40	Peak 1 floor for parallel/group control	P11-07 to P11-06	1	-	×
P11-41	Peak 2 start time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-42	Peak 2 end time for parallel/group control	00.00 to 23.59	00.00	HH.MM	×
P11-43	Peak 2 floor for parallel/group control	P11-07 to P11-06	1	-	×
P11-44	Reserved	0 to 65535	0	-	×
P11-45	Reserved	0 to 65535	0	-	×
P11-46	Reserved	0 to 65535	0	-	×
P11-47	Elevator lock start time	00.00 to 23.59	00.00	HH.MM	×
P11-48	Elevator lock end time	00.00 to 23.59	00.00	HH.MM	×
P11-49	Program control selection 1	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
P11-50	Program control selection 2	0 to 65535	0	-	×
P11-51	Program control selection 3	0 to 65535	0	-	×
P11-52	Attendant function selection	0 to 65535	128	-	×
P11-53	Fire emergency function selection	0 to 65535	16456	-	×
P11-54	Emergency evacuation selection	0 to 65535	16384	-	×
P11-55	VIP function selection	0 to 65535	0	-	×
P11-56	Blinking advance time	0.0 to 15.0	1.0	s	○
P11-57	CAN communication setting	0 to 65535	0	-	○
P11-58	Soft limit position setting	0 to 65535	0	-	○
P11-59	High bit of current pulse	0 to 65535	0	-	*
P11-60	Low bit of current pulse	0 to 65535	0	-	*
P12: Enhanced parameters (reserved)					
P13: Keypad setting parameters					
P13-00	Keypad display selection	0: Reverse display of physical floor 1: Forward display of physical floor 2: Reverse display of hall call floor 3: Forward display of hall call floor	3	-	×
P13-01	Parameter display in the running state	Bit0: Running speed Bit1: Rated speed Bit2: Bus voltage Bit3: Output voltage Bit4: Output current Bit5: Output frequency Bit6: High bits of input terminals	65535	-	×

Parameter	Name	Range	Default	Unit	Property
		Bit7: Low bits of input terminals Bit8: Output terminals Bit9: Current floor Bit10: Current position Bit11: Car load Bit12: CTB input state Bit13: CTB output state Bit14: System state Bit15: Pre-torque current			
P13-02	Parameter display in the stop state	Bit0: Rated speed Bit1: Bus voltage Bit2: Low bits of input terminals Bit3: High bits of input terminals Bit4: Output terminals Bit5: Current floor Bit6: Current position Bit7: Car load Bit8: Slow-down distance at rated speed Bit9: CTB input state Bit10: CTB output state Bit11: System state	65535	-	×
P14: PC protection parameters (reserved)					
P15: Communication parameters					
P15-00	Baud rate setting	0: 9600 1: 38400	1	-	×
P15-01	Reserved				
P15-02	Local address	0 to 127 (0: broadcast address)	1	-	×
P15-03	Response delay	0 to 20	0	ms	×
P15-04	Communication timeout	0 to 60.0	0.0	s	×

Parameter	Name	Range	Default	Unit	Property
		0: Inactive			
P15-05	Re-leveling stop delay	0.00 to 2.00	0.00	s	×
P15-06	Reserved	-	-	-	
P15-07	Host controller setting	0 to 65535	0	-	○
P15-08	Local log setting	0 to 65535	0	-	×
P16: Time parameters					
P16-00	Maximum idle time before returning to parking floor	0 to 240	10	min	×
P16-01	Fan/Lighting turn-off time (car energy-saving time)	0 to 240	2	min	×
P16-02	Motor running time limit	0 to 45 (Below 3 s: Inactive)	45	s	×
P16-03	Clock: year	2020 to 2100	2011	YYYY	×
P16-04	Clock: month	1 to 12	1	MM	×
P16-05	Clock: day	1 to 31	1	DD	×
P16-06	Clock: hour	0 to 23	0	HH	×
P16-07	Clock: minute	0 to 59	0	MM	×
P16-08	Reserved				
P16-09	Reserved				
P16-10	Attendant/Normal state switchover time	3 to 200	3	s	×
P16-11	Maintenance notification period	0 to 99	0	day	×
P16-12	Motor operation protection time	0 to 99	45	-	○

Parameter	Name	Range	Default	Unit	Property
P17: Test function parameters					
P17-00	Car call floor registered	0 to P11-06	0	-	○
P17-01	Up hall call floor registered	0 to P11-06	0	-	○
P17-02	Down hall call floor registered	0 to P11-06	0	-	○
P17-03	Random running times	0 to 60000	0	-	○
P17-04	Hall call	0: Hall call allowed 1: Hall call forbidden	0	-	○
P17-05	Door open	0: Door open allowed 1: Door open forbidden	0	-	○
P17-06	Overload function	0: Overload forbidden 1: Overload allowed	0	-	○
P17-07	Limit function	0: Limit switch enabled 1: Limit switch disabled	0	-	○
P17-08	Random running interval	0 to 1000	0	s	○
P17-09	Test function	0 to 65535	0	-	○
P17-10	Speed limiter test output time	0 to 100	0	s	○
P17-11	Test floor 1	0 to P11-06	0	-	○
P17-12	Test floor 2	0 to P11-06	0	-	○
P17-13	Test floor 3	0 to P11-06	0	-	○
P17-14	Overspeed test detection value	0.000 to 4.000 m/s	0	m/s	○
P18: Maintenance parameters					
P18-00	Set running time	0 to 60000	0	-	×
P18-01	Set running days	0 to 999	999	-	×
P18-02	Maintenance notification period	0 to 99	0	-	○

Parameter	Name	Range	Default	Unit	Property
P18-03	Maintenance notification period check	0 to 99	0	-	*
P18-04	Remote password	0 to 65535	0	-	○
P18-05	Maintenance status check	0 to 1	0	-	*
P19: Floor height parameters					
P19-00	High bits of floor height 1	0 to 65535	0	-	×
P19-01	Low bits of floor height 1	0 to 65535	0	-	×
P19-02	High bits of floor height 2	0 to 65535	0	-	×
P19-03	Low bits of floor height 2	0 to 65535	0	-	×
P19-04	High bits of floor height 3	0 to 65535	0	-	×
P19-05	Low bits of floor height 3	0 to 65535	0	-	×
P19-06	High bits of floor height 4	0 to 65535	0	-	×
P19-07	Low bits of floor height 4	0 to 65535	0	-	×
P19-08	High bits of floor height 5	0 to 65535	0	-	×
P19-09	Low bits of floor height 5	0 to 65535	0	-	×
P19-10	High bits of floor height 6	0 to 65535	0	-	×
P19-11	Low bits of floor height 6	0 to 65535	0	-	×
P19-12	High bits of floor height 7	0 to 65535	0	-	×
P19-13	Low bits of floor height 7	0 to 65535	0	-	×
P19-14	High bits of floor height 8	0 to 65535	0	-	×
P19-15	Low bits of floor height 8	0 to 65535	0	-	×
P19-16	High bits of floor height 9	0 to 65535	0	-	×
P19-17	Low bits of floor height 9	0 to 65535	0	-	×
P19-18	High bits of floor height 10	0 to 65535	0	-	×
P19-19	Low bits of floor height 10	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
...					
P19-80	High bits of floor height 41	0 to 65535	0	-	×
P19-81	Low bits of floor height 41	0 to 65535	0	-	×
P19-82	High bits of floor height 42	0 to 65535	0	-	×
P19-83	Low bits of floor height 42	0 to 65535	0	-	×
P19-84	High bits of floor height 43	0 to 65535	0	-	×
P19-85	Low bits of floor height 43	0 to 65535	0	-	×
P19-86	High bits of floor height 44	0 to 65535	0	-	×
P19-87	Low bits of floor height 44	0 to 65535	0	-	×
P19-88	High bits of floor height 45	0 to 65535	0	-	×
P19-89	Low bits of floor height 45	0 to 65535	0	-	×
P19-90	High bits of floor height 46	0 to 65535	0	-	×
P19-91	Low bits of floor height 46	0 to 65535	0	-	×
P19-92	High bits of floor height 47	0 to 65535	0	-	×
P19-93	Low bits of floor height 47	0 to 65535	0	-	×
P19-94	High bits of floor height 48	0 to 65535	0	-	×
P19-95	Low bits of floor height	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
	48				
P20: Leveling adjustment parameters					
P20-00	Leveling adjustment mode	0 to 1	0	-	
P20-01	Leveling adjustment record 1	0 to 60060	30030	-	
P20-02	Leveling adjustment record 2	0 to 60060	30030	-	
P20-03	Leveling adjustment record 3	0 to 60060	30030	-	
P20-04	Leveling adjustment record 4	0 to 60060	30030	-	
P20-05	Leveling adjustment record 5	0 to 60060	30030	-	
P20-06	Leveling adjustment record 6	0 to 60060	30030	-	
P20-07	Leveling adjustment record 7	0 to 60060	30030	-	
P20-08	Leveling adjustment record 8	0 to 60060	30030	-	
P20-09	Leveling adjustment record 9	0 to 60060	30030	-	
P20-10	Leveling adjustment record 10	0 to 60060	30030	-	
P20-11	Leveling adjustment record 11	0 to 60060	30030	-	
P20-12	Leveling adjustment record 12	0 to 60060	30030	-	
P20-13	Leveling adjustment record 13	0 to 60060	30030	-	
P20-14	Leveling adjustment	0 to 60060	30030	-	

Parameter	Name	Range	Default	Unit	Property
	record 14				
P20-15	Leveling adjustment record 15	0 to 60060	30030	-	
P20-16	Leveling adjustment record 16	0 to 60060	30030	-	
P20-17	Leveling adjustment record 17	0 to 60060	30030	-	
P20-18	Leveling adjustment record 18	0 to 60060	30030	-	
P20-19	Leveling adjustment record 19	0 to 60060	30030	-	
P20-20	Leveling adjustment record 20	0 to 60060	30030	-	
P20-21	Leveling adjustment record 21	0 to 60060	0	-	
P20-22	Leveling adjustment record 22	0 to 60060	0	-	
P20-23	Leveling adjustment record 23	0 to 60060	0	-	
P20-24	Leveling adjustment record 24	0 to 60060	0	-	
P20-25	Reserved		-	-	-
P20-26	Reserved		-	-	-
P21: Floor display parameters					
P21-00	Reserved	0 to 9999 The two high bits indicate the display code of tens place of the floor number, and the two low bits indicate the display code of ones place. 00: Display "0"	-	-	*
P21-01	Floor 1 display		1901	-	○
P21-02	Floor 2 display		1902	-	○
P21-03	Floor 3 display		1903	-	○
P21-04	Floor 4 display		1904	-	○
P21-05	Floor 5 display		1905	-	○

Parameter	Name	Range	Default	Unit	Property
P21-06	Floor 6 display	01: Display "1" 02: Display "2" 03: Display "3" 04: Display "4" 05: Display "5" 06: Display "6" 07: Display "7" 08: Display "8" 09: Display "9" 10: Display "A" 11: Display "B" 12: Display "G" 13: Display "H" 14: Display "L" 15: Display "M" 16: Display "P" 17: Display "R" 18: Display "-" 19: No display 20: Display "12" 21: Display "13" 22: Display "23" > 22: No display	1906	-	○
P21-07	Floor 7 display		1907	-	○
P21-08	Floor 8 display		1908	-	○
P21-09	Floor 9 display		1909	-	○
P21-10	Floor 10 display		100	-	○
P21-11	Floor 11 display		101	-	○
P21-12	Floor 12 display		102	-	○
P21-13	Floor 13 display		103	-	○
P21-14	Floor 14 display		104	-	○
P21-15	Floor 15 display		105	-	○
P21-16	Floor 16 display		106	-	○
P21-17	Floor 17 display		107	-	○
P21-18	Floor 18 display		108	-	○
P21-19	Floor 19 display		109	-	○
P21-20	Floor 20 display		200	-	○
P21-21	Floor 21 display		201	-	○
P21-22	Floor 22 display		202	-	○
P21-23	Floor 23 display		203	-	○
P21-24	Floor 24 display		204	-	○
P21-25	Floor 25 display		205	-	○
P21-26	Floor 26 display		206	-	○
P21-27	Floor 27 display		207	-	○
P21-28	Floor 28 display		208	-	○
P21-29	Floor 29 display		209	-	○
P21-30	Floor 30 display		300	-	○
P21-31	Floor 31 display		301	-	○

Parameter	Name	Range	Default	Unit	Property
	(Dual hall call display for through-type door)				
P21-32	Floor 32 display		302	-	○
P21-33	Floor 33 display		303	-	○
P21-34	Floor 34 display		304	-	○
P21-35	Floor 35 display		305	-	○
P21-36	Floor 36 display		306	-	○
P21-37	Floor 37 display		307	-	○
P21-38	Floor 38 display		308	-	○
P21-39	Floor 39 display		309	-	○
P21-40	Floor 40 display		400	-	○
P21-41	Floor 41 display		401	-	○
P21-42	Floor 42 display		402	-	○
P21-43	Floor 43 display		403	-	○
P21-44	Floor 44 display		404	-	○
P21-45	Floor 45 display		405	-	○
P21-46	Floor 46 display		406	-	○
P21-47	Floor 47 display		407	-	○
P21-48	Floor 48 display		408	-	○
P21-49	Highest digit selection 1		0	-	○
P21-50	Highest digit selection 2		0	-	○
P21-51	Highest digit selection 3		0	-	○
P21-52	Highest digit selection 4		0	-	○
P21-53	Highest digit selection 5		0	-	○
P22: Magnetic scale parameters					
P22-00	Magnetic scale enable	0 to 65535	0	-	×
P22-01	Magnetic scale model	0 to 65535	0	-	×

Parameter	Name	Range	Default	Unit	Property
	selection				
P22-02	Magnetic scale function selection	0 to 65535	0	-	×
P22-03	Floor position setting	0 to 999	0	-	×
P22-04	Magnetic scale tuning	0 to 999	0	-	○
P22-05	Minor adjustment of current floor position	0 to 99	50	mm	×
P22-06	Door zone length	100 to 400	200	-	×
P22-07	Magnetic scale limit distance setting	0 to 400	30	-	×
P22-08	High bit of floor 1 absolute position	0 to 65535	0	-	×
P22-09	Low bit of floor 1 absolute position	0 to 65535	0	mm	×
P22-10	Deviation threshold between encoder speed measurement and magnetic scale speed measurement	0.000 to 4.000	0.000	m/s	×
P22-11	High bit of pulses corresponding to each decimeter	0 to 65535	0	-	×
P22-12	Low bit of pulses corresponding to each decimeter	0 to 65535	0	-	×
P40: Commissioning parameters					
P40-00	Control data 1 address	0 to 65535	0	-	○
P40-01	Control data 1 value	0 to 65535	0	-	*
P40-02	Control data 2 address	0 to 65535	0	-	○
P40-03	Control data 2 value	0 to 65535	0	-	*
P40-04	Control data 3 address	0 to 65535	0	-	○

Parameter	Name	Range	Default	Unit	Property
P40-05	Control data 3 value	0 to 65535	0	-	*
P40-06	Control data 4 address	0 to 65535	0	-	○
P40-07	Control data 4 value	0 to 65535	0	-	*
P40-08	Control data setting 1	0 to 65535	0	-	○
P40-09	Control data setting 2	0 to 65535	0	-	○
P40-10	Control data setting 3	0 to 65535	0	-	○
P40-11	Control data setting 4	0 to 65535	0	-	○

C.2.3 Status parameters

Parameter	Name	Range	Unit
D00: Basic configuration			
D00-00	Rate power of AC drive	0.1 to 999.9	kW
D00-01	Rated voltage of AC drive	0 to 999	V
D00-02	Rated current of AC drive	0.1 to 999.9	A
D00-03	MCB software version	0.00 to 9.99	-
D00-04	Drive board software version	0.00 to 9.99	-
D00-05	CTB software version	0.00 to 9.99	-
D00-06	MCB customized software version	0.00 to 9.99	-
D00-07	Drive board customized software version	0.00 to 9.99	-
D00-08	CTB customized software version	0.00 to 9.99	-
D00-09	MCB manufacturer software version	0.00 to 9.99	-
D00-10	Drive board manufacturer software version	0.00 to 9.99	-
D00-11	CTB manufacturer software version	0.00 to 9.99	-
D00-12	Functional specification version	0.00 to 9.99	-

Parameter	Name	Range	Unit
D00-13	Temporary version of the MCB software	0.00 to 99.99	-
D00-14	Second version number of drive board software	0.00 to 9.99	-
D00-15	Product model	0 to 9999	-
D00-16	CTB model	0 to 100	-
D01: Running status			
D01-00	Speed reference	0.000 to 4.000	m/s
D01-01	Feedback speed	0.000 to 4.000	m/s
D01-02	Bus voltage	0 to 999.9	V
D01-03	Current position	0.0 to 300.0	m
D01-04	Output current	0.0 to 999.9	A
D01-05	Output frequency	0.00 to 99.99	Hz
D01-06	Torque current	0.0 to 999.9 (with positive/negative display)	A
D01-07	Output voltage	0.0 to 999.9	V
D01-08	Output torque	0.0 to 200.0 (with positive/negative display)	%
D01-09	Output power	0.00 to 99.99 (with positive/negative display)	KW
D01-10	Heatsink temperature	0 to 100	℃
D01-11	Reserved	-	-
D01-12	Reserved	-	-
D01-13	Pre-torque current	0.0 to 200.0 (with positive/negative display)	%
D01-14	Logic information	Thousands place and ten thousands place: Elevator state Ones place to hundreds place: Car state	-

Parameter	Name	Range	Unit
D01-15	Curve information	Hundreds place to ten thousands place: Curve information Ones place and tens place: Timing information	-
D01-16	System state 2	Bit0: Up direction display Bit1: Down direction display Bit2: 1=Running; 0=Stop Bit3: System full-load Bit4: System overload Bit5: System half-load Bit6: System light-load	-
D01-17	Input state 6	0 to 65535	-
D01-18	Input state 7	0 to 65535	-
D01-19	Output state 3	0 to 65535	-
D01-20	Output state 4	0 to 65535	-
D01-21	Accumulated running time	0 to 65535	h
D01-22	High bits of running times	0 to 9999 **Note:** 1 means the actual running times is 10000.	-
D01-23	Low bits of running times	0 to 9999	-
D01-24	Current encoder angle	0.0 to 359.9	-
D01-25	Maximum floor running time interval	0 to 200	s
D01-26	Zero servo rollback distance	0 to 65535	-
D01-27	Quiescent current	0.00 to 655.00	-
D01-28 to D01-31	Reserved	0 to 65535	-
D01-32	Braking force detection result	0: Meaningless 1: Passed 2: Failed	-

Parameter	Name	Range	Unit
D01-33	Shorting motor stator test result	0: Meaningless 1: Passed 2: Failed	-
D01-34	System power-on time	0 to 65535	h
D01-35	TD2 temperature	0 to 999	℃
D01-36	Emergency evacuation state	0 to 65535	-
D02: MCB status			
D02-00	Input state 1	0 to 65535	-
D02-01	Input state 2	0 to 65535	-
D02-02	Input state 3	0 to 65535	-
D02-03	Input state 4	0 to 65535	-
D02-04	Input state 5	0 to 65535	-
D02-05	Output state 1	0 to 65535	-
D02-06	Output state 2	0 to 65535	-
D02-07	Terminal state display 1	0 to 65535	-
D02-08	Terminal state display 2	0 to 65535	-
D03: CTB status			
D03-00	Car input state	0 to 65535	-
D03-01	Car output state	0 to 65535	-
D03-02	Hall state	0 to 65535	-
D03-03	System state 1	0 to 65535	-
D04: Communication status			
D04-00	Hall call communication state 1	0 to 65535	-
D04-01	Hall call communication state 2	0 to 65535	-
D04-02	Hall call communication state 3	0 to 65535	-
D04-03	Communication interference	0 to 65535	-

Parameter	Name	Range	Unit
D04-04	Encoder interference	0 to 65535	-
D04-05	Reserved	0 to 65535	-
D04-06	Version display selection	0 to 65535	-
D04-07	Reserved	0 to 65535	-
D04-08	Reserved	0 to 65535	-
D04-09	Magnetic scale communication state	0 to 65535	-
D04-10	Magnetic scale working state	0 to 65535	-
D04-11	High bit of magnetic scale present position	0 to 65535	-
D04-12	Low bit of magnetic scale present position	0 to 65535	-
D04-13	Present speed of magnetic scale	0.100 to 4.000	m/s
D04-14	Count of magnetic scale communication abnormality	0 to 65535	-
D04-15	Register value of magnetic scale fault	0 to 65535	-
D04-16	Inspection box communication state	0 to 10	-
D04-17	Inspection box input state	0 to 65535	-
D04-18	Inspection box software version	0 to 99.99	-
D04-19	ARD communication state	0 to 10	-
D04-20	ARD state	0 to 65535	-
D04-21	ARD fault code	0 to 99	-
D04-22	ARD battery voltage	0.0 to 99.9	-
D04-23	ARD software version	0.00 to 99.99	-

C.2.4 Fault parameters

E00: Fault record parameters				
E00-00	1st fault	0 to 9999	0	-

E00-01	1st fault subcode	0 to 65535	0	-
E00-02	Month and day upon 1st fault	0 to 1231	0	-
E00-03	Hour and minute upon 1st fault	0 to 23.59	0	-
E00-04	2nd fault	0 to 9999	0	-
E00-05	2nd fault subcode	0 to 65535	0	-
E00-06	Month and day upon 2nd fault	0 to 1231	0	-
E00-07	Hour and minute upon 2nd fault	0 to 23.59	0	-
E00-08	3rd fault	0 to 9999	0	-
E00-09	3rd fault subcode	0 to 65535	0	-
E00-10	Month and day upon 3rd fault	0 to 1231	0	-
E00-11	Hour and minute upon 3rd fault	0 to 23.59	0	-
...				
E00-96	25th fault	0 to 9999	0	-
E00-97	25th fault subcode	0 to 65535	0	-
E00-98	Month and day upon 25th fault	0 to 1231	0	-
E00-99	Hour and minute upon 25th fault	0 to 23.59	0	-
E01: Latest fault record				
E01-00	1st fault	0 to 9999	0	-
E01-01	1st fault subcode	0 to 65535	0	-
E01-02	Month and day upon 1st fault	0 to 1231	0	-
E01-03	Hour and minute upon 1st fault	0 to 23.59	0	-
E01-04	Logic information upon 1st fault	0 to 65535	0	-
E01-05	Curve information upon 1st fault	0 to 65535	0	-
E01-06	Speed reference upon 1st fault	0.000 to 4.000	0	m/s
E01-07	Feedback speed upon 1st fault	0.000 to 4.000	0	m/s
E01-08	Bus voltage upon 1st fault	0 to 999.9	0	V
E01-09	Current position upon 1st fault	0.0 to 300.0	0	m

E01-10	Output current upon 1st fault	0.0 to 999.9	0	A
E01-11	Output frequency upon 1st fault	0.00 to 99.99	0	Hz
E01-12	Torque current upon 1st fault	0.0 to 999.9	0	A
E01-13	Output voltage upon 1st fault	0 to 999.9	0	V
E01-14	Output torque upon 1st fault	0 to 200.0	0	%
E01-15	Output power upon 1st fault	0.00 to 99.99	0	KW
E01-16	Communication interference upon 1st fault	0 to 65535	0	-
E01-17	Encoder interference upon 1st fault	0 to 65535	0	-
E01-18	Input state 1 upon 1st fault	0 to 65535	0	-
E01-19	Input state 2 upon 1st fault	0 to 65535	0	-
E02: 2nd fault record				
E02-00	2nd fault	0 to 9999	0	-
E02-01	2nd fault subcode	0 to 65535	0	-
E02-02	Month and day upon 2nd fault	0 to 1231	0	-
E02-03	Hour and minute upon 2nd fault	0 to 23.59	0	-
E02-04	Logic information upon 2nd fault	0 to 65535	0	-
E02-05	Curve information upon 2nd fault	0 to 65535	0	-
E02-06	Speed reference upon 2nd fault	0.000 to 4.000	0	m/s
E02-07	Feedback speed upon 2nd fault	0.000 to 4.000	0	m/s
E02-08	Bus voltage upon 2nd fault	0 to 999.9	0	V
E02-09	Current position upon 2nd fault	0.0 to 300.0	0	m
E02-10	Output current upon 2nd fault	0.0 to 999.9	0	A
E02-11	Output frequency upon 2nd fault	0.00 to 99.99	0	Hz
E02-12	Torque current upon 2nd fault	0.0 to 999.9	0	A
E02-13	Output voltage upon 2nd fault	0 to 999.9	0	V
E02-14	Output torque upon 2nd fault	0 to 200.0	0	%

E02-15	Output power upon 2nd fault	0.00 to 99.99	0	KW
E02-16	Communication interference upon 2nd fault	0 to 65535	0	-
E02-17	Encoder interference upon 2nd fault	0 to 65535	0	-
E02-18	Input state 1 upon 2nd fault	0 to 65535	0	-
E02-19	Input state 2 upon 2nd fault	0 to 65535	0	-
E03: 3rd fault record				
E03-00	3rd fault	0 to 9999	0	-
E03-01	3rd fault subcode	0 to 65535	0	-
E03-02	Month and day upon 3rd fault	0 to 1231	0	-
E03-03	Hour and minute upon 3rd fault	0 to 23.59	0	-
E03-04	Logic information upon 3rd fault	0 to 65535	0	-
E03-05	Curve information upon 3rd fault	0 to 65535	0	-
E03-06	Speed reference upon 3rd fault	0.000 to 4.000	0	m/s
E03-07	Feedback speed upon 3rd fault	0.000 to 4.000	0	m/s
E03-08	Bus voltage upon 3rd fault	0 to 999.9	0	V
E03-09	Current position upon 3rd fault	0.0 to 300.0	0	m
E03-10	Output current upon 3rd fault	0.0 to 999.9	0	A
E03-11	Output frequency upon 3rd fault	0.00 to 99.99	0	Hz
E03-12	Torque current upon 3rd fault	0.0 to 999.9	0	A
E03-13	Output voltage upon 3rd fault	0 to 999.9	0	V
E03-14	Output torque upon 3rd fault	0 to 200.0	0	%
E03-15	Output power upon 3rd fault	0.00 to 99.99	0	KW
E03-16	Communication interference upon 3rd fault	0 to 65535	0	-
E03-17	Encoder interference upon 3rd fault	0 to 65535	0	-
E03-18	Input state 1 upon 3rd fault	0 to 65535	0	-
E03-19	Input state 2 upon 3rd fault	0 to 65535	0	-

E04: 4th fault record				
E04-00	4th fault	0 to 9999	0	-
E04-01	4th fault subcode	0 to 65535	0	-
E04-02	Month and day upon 4th fault	0 to 1231	0	-
E04-03	Hour and minute upon 4th fault	0 to 23.59	0	-
E04-04	Logic information upon 4th fault	0 to 65535	0	-
E04-05	Curve information upon 4th fault	0 to 65535	0	-
E04-06	Speed reference upon 4th fault	0.000 to 4.000	0	m/s
E04-07	Feedback speed upon 4th fault	0.000 to 4.000	0	m/s
E04-08	Bus voltage upon 4th fault	0 to 999.9	0	V
E04-09	Current position upon 4th fault	0.0 to 300.0	0	m
E04-10	Output current upon 4th fault	0.0 to 999.9	0	A
E04-11	Output frequency upon 4th fault	0.00 to 99.99	0	Hz
E04-12	Torque current upon 4th fault	0.0 to 999.9	0	A
E04-13	Output voltage upon 4th fault	0 to 999.9	0	V
E04-14	Output torque upon 4th fault	0 to 200.0	0	%
E04-15	Output power upon 4th fault	0.00 to 99.99	0	KW
E04-16	Communication interference upon 4th fault	0 to 65535	0	-
E04-17	Encoder interference upon 4th fault	0 to 65535	0	-
E04-18	Input state 1 upon 4th fault	0 to 65535	0	-
E04-19	Input state 2 upon 4th fault	0 to 65535	0	-
E05: 5th fault record				
E05-00	5th fault	0 to 9999	0	-
E05-01	5th fault subcode	0 to 65535	0	-
E05-02	Month and day upon 5th fault	0 to 1231	0	-
E05-03	Hour and minute upon 5th fault	0 to 23.59	0	-

E05-04	Logic information upon 5th fault	0 to 65535	0	-
E05-05	Curve information upon 5th fault	0 to 65535	0	-
E05-06	Speed reference upon 5th fault	0.000 to 4.000	0	m/s
E05-07	Feedback speed upon 5th fault	0.000 to 4.000	0	m/s
E05-08	Bus voltage upon 5th fault	0 to 999.9	0	V
E05-09	Current position upon 5th fault	0.0 to 300.0	0	m
E05-10	Output current upon 5th fault	0.0 to 999.9	0	A
E05-11	Output frequency upon 5th fault	0.00 to 99.99	0	Hz
E05-12	Torque current upon 5th fault	0.0 to 999.9	0	A
E05-13	Output voltage upon 5th fault	0 to 999.9	0	V
E05-14	Output torque upon 5th fault	0 to 200.0	0	%
E05-15	Output power upon 5th fault	0.00 to 99.99	0	KW
E05-16	Communication interference upon 5th fault	0 to 65535	0	-
E05-17	Encoder interference upon 5th fault	0 to 65535	0	-
E05-18	Input state 1 upon 5th fault	0 to 65535	0	-
E05-19	Input state 2 upon 5th fault	0 to 65535	0	-
E06: 6th fault record				
E06-00	6th fault	0 to 9999	0	-
E06-01	6th fault subcode	0 to 65535	0	-
E06-02	Month and day upon 6th fault	0 to 1231	0	-
E06-03	Hour and minute upon 6th fault	0 to 23.59	0	-
E06-04	Logic information upon 6th fault	0 to 65535	0	-
E06-05	Curve information upon 6th fault	0 to 65535	0	-
E06-06	Speed reference upon 6th fault	0.000 to 4.000	0	m/s
E06-07	Feedback speed upon 6th fault	0.000 to 4.000	0	m/s
E06-08	Bus voltage upon 6th fault	0 to 999.9	0	V

E06-09	Current position upon 6th fault	0.0 to 300.0	0	m
E06-10	Output current upon 6th fault	0.0 to 999.9	0	A
E06-11	Output frequency upon 6th fault	0.00 to 99.99	0	Hz
E06-12	Torque current upon 6th fault	0.0 to 999.9	0	A
E06-13	Output voltage upon 6th fault	0 to 999.9	0	V
E06-14	Output torque upon 6th fault	0 to 200.0	0	%
E06-15	Output power upon 6th fault	0.00 to 99.99	0	KW
E06-16	Communication interference upon 6th fault	0 to 65535	0	-
E06-17	Encoder interference upon 6th fault	0 to 65535	0	-
E06-18	Input state 1 upon 6th fault	0 to 65535	0	-
E06-19	Input state 2 upon 6th fault	0 to 65535	0	-
E07: 7th fault record				
E07-00	7th fault	0 to 9999	0	-
E07-01	7th fault subcode	0 to 65535	0	-
E07-02	Month and day upon 7th fault	0 to 1231	0	-
E07-03	Hour and minute upon 7th fault	0 to 23.59	0	-
E07-04	Logic information upon 7th fault	0 to 65535	0	-
E07-05	Curve information upon 7th fault	0 to 65535	0	-
E07-06	Speed reference upon 7th fault	0.000 to 4.000	0	m/s
E07-07	Feedback speed upon 7th fault	0.000 to 4.000	0	m/s
E07-08	Bus voltage upon 7th fault	0 to 999.9	0	V
E07-09	Current position upon 7th fault	0.0 to 300.0	0	m
E07-10	Output current upon 7th fault	0.0 to 999.9	0	A
E07-11	Output frequency upon 7th fault	0.00 to 99.99	0	Hz
E07-12	Torque current upon 7th fault	0.0 to 999.9	0	A
E07-13	Output voltage upon 7th fault	0 to 999.9	0	V

E07-14	Output torque upon 7th fault	0 to 200.0	0	%
E07-15	Output power upon 7th fault	0.00 to 99.99	0	KW
E07-16	Communication interference upon 7th fault	0 to 65535	0	-
E07-17	Encoder interference upon 7th fault	0 to 65535	0	-
E07-18	Input state 1 upon 7th fault	0 to 65535	0	-
E07-19	Input state 2 upon 7th fault	0 to 65535	0	-
E08: 8th fault record				
E08-00	8th fault	0 to 9999	0	-
E08-01	8th fault subcode	0 to 65535	0	-
E08-02	Month and day upon 8th fault	0 to 1231	0	-
E08-03	Hour and minute upon 8th fault	0 to 23.59	0	-
E08-04	Logic information upon 8th fault	0 to 65535	0	-
E08-05	Curve information upon 8th fault	0 to 65535	0	-
E08-06	Speed reference upon 8th fault	0.000 to 4.000	0	m/s
E08-07	Feedback speed upon 8th fault	0.000 to 4.000	0	m/s
E08-08	Bus voltage upon 8th fault	0 to 999.9	0	V
E08-09	Current position upon 8th fault	0.0 to 300.0	0	m
E08-10	Output current upon 8th fault	0.0 to 999.9	0	A
E08-11	Output frequency upon 8th fault	0.00 to 99.99	0	Hz
E08-12	Torque current upon 8th fault	0.0 to 999.9	0	A
E08-13	Output voltage upon 8th fault	0 to 999.9	0	V
E08-14	Output torque upon 8th fault	0 to 200.0	0	%
E08-15	Output power upon 8th fault	0.00 to 99.99	0	KW
E08-16	Communication interference upon 8th fault	0 to 65535	0	-
E08-17	Encoder interference upon 8th fault	0 to 65535	0	-
E08-18	Input state 1 upon 8th fault	0 to 65535	0	-

E08-19	Input state 2 upon 8th fault	0 to 65535	0	-
E09: 9th fault record				
E09-00	9th fault	0 to 9999	0	-
E09-01	9th fault subcode	0 to 65535	0	-
E09-02	Month and day upon 9th fault	0 to 1231	0	-
E09-03	Hour and minute upon 9th fault	0 to 23.59	0	-
E09-04	Logic information upon 9th fault	0 to 65535	0	-
E09-05	Curve information upon 9th fault	0 to 65535	0	-
E09-06	Speed reference upon 9th fault	0.000 to 4.000	0	m/s
E09-07	Feedback speed upon 9th fault	0.000 to 4.000	0	m/s
E09-08	Bus voltage upon 9th fault	0 to 999.9	0	V
E09-09	Current position upon 9th fault	0.0 to 300.0	0	m
E09-10	Output current upon 9th fault	0.0 to 999.9	0	A
E09-11	Output frequency upon 9th fault	0.00 to 99.99	0	Hz
E09-12	Torque current upon 9th fault	0.0 to 999.9	0	A
E09-13	Output voltage upon 9th fault	0 to 999.9	0	V
E09-14	Output torque upon 9th fault	0 to 200.0	0	%
E09-15	Output power upon 9th fault	0.00 to 99.99	0	KW
E09-16	Communication interference upon 9th fault	0 to 65535	0	-
E09-17	Encoder interference upon 9th fault	0 to 65535	0	-
E09-18	Input state 1 upon 9th fault	0 to 65535	0	-
E09-19	Input state 2 upon 9th fault	0 to 65535	0	-
E10: 10th fault record				
E10-00	10th fault	0 to 9999	0	-
E10-01	10th fault subcode	0 to 65535	0	-
E10-02	Month and day upon 10th fault	0 to 1231	0	-

E10-03	Hour and minute upon 10th fault	0 to 23.59	0	-
E10-04	Logic information upon 10th fault	0 to 65535	0	-
E10-05	Curve information upon 10th fault	0 to 65535	0	-
E10-06	Speed reference upon 10th fault	0.000 to 4.000	0	m/s
E10-07	Feedback speed upon 10th fault	0.000 to 4.000	0	m/s
E10-08	Bus voltage upon 10th fault	0 to 999.9	0	V
E10-09	Current position upon 10th fault	0.0 to 300.0	0	m
E10-10	Output current upon 10th fault	0.0 to 999.9	0	A
E10-11	Output frequency upon 10th fault	0.00 to 99.99	0	Hz
E10-12	Torque current upon 10th fault	0.0 to 999.9	0	A
E10-13	Output voltage upon 10th fault	0 to 999.9	0	V
E10-14	Output torque upon 10th fault	0 to 200.0	0	%
E10-15	Output power upon 10th fault	0.00 to 99.99	0	KW
E10-16	Communication interference upon 10th fault	0 to 65535	0	-
E10-17	Encoder interference upon 10th fault	0 to 65535	0	-
E10-18	Input state 1 upon 10th fault	0 to 65535	0	-
E10-19	Input state 2 upon 10th fault	0 to 65535	0	-

Appendix D Warranty and Service

Megmeet rigorously adheres to the ISO 9001:2008 standard in manufacturing motor drive products. If any irregularities occur with our products, please contact the product supplier or the headquarters directly. Megmeet is committed to delivering comprehensive technical support services to all our clients.

1. Warranty period

The warranty period for the product is 18 months from the date of purchase, but not exceeding 24 months after the manufacturing date recorded on the nameplate.

2. Warranty scope

During the warranty period, any abnormalities arising from the responsibility of our company can be repaired or replaced free of charge by our company. However, a certain amount of repair charges may apply even within the warranty period under the following circumstances:

(1) Damage caused by fire, flood, severe lightning strikes, or similar reasons;

(2) Man-made damage caused by users' unauthorized modifications;

(3) Damage due to dropping or transportation after purchase;

(4) Damage caused by usage beyond the standard specifications or requirements;

(5) Damage resulting from operation/use not in accordance with the user manual.

3. After-sales service

(1) If there are special requirements for the installation and commissioning of the drive product, or if the product's performance or functionality is not satisfactory, please contact the product distributor or Megmeet.

(2) In case of any abnormalities, please seek assistance by contacting the product supplier or Megmeet.

(3) During the warranty period, any abnormalities caused by manufacturing and design defects will be repaired free of charge by our company.

(4) Beyond the warranty period, repairs will be conducted at the customer's request and charged by our company.

(5) Service fees are calculated based on actual costs. Any agreements in place will take precedence.

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