Monarch
by INOVANCE

Advancing industrial technology,
for a better world



NICE3000^{new} Series
Integrated Elevator Controller

Function Application Guide

Industrial Automation | New Energy Vehicle | Intelligent Elevator | Intelligent Robot | Digital Energy | Rail Transit

Data code 19011634C02

Legal Information

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Disclaimer of Liability

Due to continuous updates and improvements of products and technologies, the content of this documentation may not fully match the actual products. In the event of any discrepancies, the actual products shall prevail.

The contents are subject to change without notice due to product upgrade.

Waste Disposal

The storage, use, and disposal of this product (including optional accessories) must comply with local laws and regulations.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel can identify the risks of the product/system and prevent possible dangers.

Proper Use of the Product

Proper transportation, storage, assembly, installation, commissioning, operation, and maintenance are required to ensure the safe operation of the product without any problems. The required ambient conditions must be met. All operations must follow the guidelines provided in this documentation.

Preface

Thank you for purchasing the NICE3000^{new} integrated elevator controller from INOVANCE.

The NICE3000^{new}controller is a world-leading intelligent control system that integrates computer, automatic control, network communication, and motor vector drive technologies. Monarch is a proprietary elevator product brand of Inovance.

This manual covers the functional parameters, including parameter list, parameter description, application, typical functions and schemes. Read this guide carefully before using the product, and keep it properly for future maintenance reference.

Related Documents

Name	Data code	Description
NICE3000^{new} Integrated Elevator Controller Hardware Guide	19011660	It covers the system components, technical specifications, dimensions, options selection, common EMC problems handling, and certifications and standards.
NICE3000^{new} Integrated Elevator Controller Quick Start Guide	19011978	It covers the installation (pre-installation preparation and mechanical and electrical installation) and system commissioning (tools and fault handling).
NICE3000^{new} Integrated Elevator Controller Function Application Guide (This Guide)	**19011634**	**It covers the functional parameters, including parameter list, parameter description, application, typical functions and schemes.**
NICE3000^{new} Integrated Elevator Controller Maintenance Guide	19011979	It covers maintenance, part replacement , troubleshooting and so on.
NICE3000^{new} Integrated Elevator Controller User Guide	PS00006334	It covers the system design and selection, installation and commissioning, function, and troubleshooting information.

Revision History

Date of revision	Version	Description
March 2026	C02	**Added sections:** • Structural information related to 220 V models. • Parameters and fault codes related to shorting motor stator pulse. **Revised sections:** • Parameters and fault codes. • MCB figure. • Minor error corrections.
October 2024	C00	**Revised sections:** Minor error corrections.
October 2022	B01	Minor error corrections.
June 2022	B00	• Upgraded to meet new national standard. • The front cover and back cover design.
July 2021	A00	First issue.

Access to the Guide

The instructions are subject to change due to product upgrade, specification modification as well as efforts to increase the accuracy and convenience of the manual.

This guide is not in the scope of delivery. If necessary, you can obtain the PDF file in the following ways:

- Visit *https://www.inovance.com/global*, choose Service&Support > Support > Documentation Download.
- Scan the QR code below to install the application **My Inovance**, where you can search for and download the guide.

Warranty Instructions

If your product becomes defective under normal use conditions, we will offer guaranteed repair services within the warranty period. Charges will be paid beyond the warranty listed in the purchase order.

The warranty does not cover any defect caused by:

- failure to operate the product in accordance with the user guide
- events beyond control, such as fire, flood and abnormal voltage

- function misuse
- out-of-range application
- other events of force majeure, including but not limited to lightning, earthquake and other extreme weather events

The maintenance fee is charged according to the latest Price List of Inovance. If otherwise agreed upon, the agreed terms and conditions shall prevail.

For details, see Product Warranty Card.

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1 General Safety Rules

1.1 Safety Instructions

Safety Disclaimer

- This section describes the safety precautions that help you use this product correctly. Before using this product, read the user guide thoroughly and correctly understand the related safety precautions. Failure to comply may result in severe personal injuries or even death or equipment damage.
- "DANGER", "WARNING", and "CAUTION" items in the user guide do not indicate all safety precautions that need to be followed; instead, they just supplement the safety precautions.
- Use this equipment according to the designated environment requirements. Damage caused by improper usage is not covered by warranty.
- Inovance shall take no responsibility for any personal injuries or property damage caused by improper usage.

Safety Levels and Definitions



Indicates that failure to comply with the notice will result in death or severe personal injuries.



Indicates that failure to comply with the notice may result in death or severe personal injuries.



Indicates that failure to comply with the notice may result in minor or moderate personal injuries or equipment damage.

Safety Precautions

- Product illustrations in the user guide are sometimes shown without covers or protective guards. Remember to install the covers or protective guards as specified first, and then perform operations in accordance with the instructions.
- Product illustrations in this guide are for reference only. Actual products may vary.
- Personnel must take mechanical precautions to protect personal safety. Wear necessary protective safety gear, such as anti-smashing shoes, clothing, glasses, gloves, and sleeves.

Unpacking
 • Do not proceed with installation if you find damage, rust, or indications of use on the product or accessories. • Do not proceed with installation if you find water seepage, component missing or damage upon unpacking. • Do not install the equipment if you find the packing list does not conform to the equipment you received.
 • Check whether the packaging is intact and whether there is damage, water seepage, damp, and deformation. • Unpack by following the correct sequence. Do not hit with force. • Check whether there is damage, rust, or injuries on the surface of the equipment or equipment accessories. • Check the materials and ensure all items are included.

Storage and Transportation



- Use professional loading and unloading equipment to carry large-scale or heavy equipment. Failure to comply may result in personal injuries or equipment damage.
- Before hoisting the equipment, ensure the equipment components such as the front cover and terminal blocks are secured firmly with screws. Loosely-connected components may fall off and result in personal injuries or equipment damage.
- Never stand or stay below the equipment when the equipment is lifted by hoisting equipment.
- When hoisting the equipment with a steel rope, ensure the equipment is hoisted at a constant speed without suffering from vibration or shock. Do not turn the equipment over or let the equipment stay hanging in the air. Failure to comply may result in personal injuries or equipment damage.



- Handle the equipment with care during transportation and mind your step to prevent personal injuries or equipment damage.
- When carrying this equipment with bare hands, hold the equipment casing firmly with care to prevent parts falling. Failure to comply may result in personal injuries.
- Store and transport this product in strict accordance with the storage and transportation requirements. Failure to comply may result in damage to the product.
- Store and transport the product in environments free from water splashes, rain exposure, direct sunlight, strong electric and magnetic fields, and excessive vibration.
- Store the product for no more than 3 months. For longer storage periods, implement stricter protective measures and conduct necessary inspections.
- Before transportation, ensure the product is packed securely. For long-distance shipping, use airtight packaging.
- Always transport the product separately from any items or substances that could potentially damage or negatively affect its performance.

Installation



- Installation must be performed by only experienced personnel who have been trained with necessary electrical information. Operations by others are prohibited.



- Read through the guide and safety instructions before installation.
- Do not install the product in places with strong electric or magnetic fields.
- Before installation, ensure that the mechanical strength of the installation position is sufficient to support the weight of the equipment. Failure to comply may result in mechanical hazards.
- Do not wear loose clothes or accessories during installation. Failure to comply may result in an electric shock.
- When installing the equipment in a closed environment (such as a cabinet or casing), use a cooling device (such as a fan or air conditioner) to cool the environment down to the required temperature. Failure to comply may result in equipment over-temperature or a fire.
- Do not modify this product.
- Do not rotate the equipment components or loosen fixed bolts (especially those marked in red) on equipment components.
- When this equipment is installed in a cabinet or final equipment, protection measures such as a fireproof enclosure, electrical enclosure, or mechanical enclosure must be provided. The IP rating must meet IEC standards and local laws and regulations.
- Before installing equipment with strong electromagnetic interference, such as a transformer, install an electromagnetic shielding device for the product to prevent malfunctions.
- Install the equipment onto flame retardant materials, such as metal. Keep the equipment away from combustible objects. Failure to comply will result in a fire.



- Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the equipment and causing faults. After installation, remove the cloth or paper for effective ventilation and cooling.
- Resonance may occur when the equipment operating at a constant speed executes variable speed operations. In this case, install the vibration-proof rubber under the motor frame or use the vibration suppression function to reduce resonance.

Wiring



- Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed by only professionals.
- Before wiring, cut off all the power supplies. Wait as specified on the product warning sign before further operations because residual voltage exists after power-off. Measure the DC voltage of the main circuit and make sure that it is below the safety voltage. Failure to comply will result in an electric shock.
- Never perform wiring, remove the product cover, or contact the PCB at power-on. Failure to comply will result in an electric shock.
- Make sure that the equipment is reliably grounded. Failure to comply will result in an electric shock.



- Never connect the power cable to output terminals of the equipment. Failure to comply may cause equipment damage or even a fire.
- When connecting a drive with the motor, make sure that the phase sequences of the drive and motor terminals are consistent to prevent reverse motor rotation.
- The cables used for wiring must have the appropriate size and shielding type. The cable shield needs to be grounded reliably at both ends.
- Fasten screw terminals with the specified tightening torque. Insufficient or excessive torque may cause overheating, damage, and even a fire.
- After wiring, make sure that no screws are fallen and cables are exposed in the equipment. Failure to comply may result in an electric shock or equipment damage.



- During wiring, follow the proper electrostatic discharge (ESD) procedures, and wear an antistatic wrist strap. Failure to comply will result in damage to internal equipment circuits.
- In wiring the control circuit, use shielded twisted pair cable and connect the shield to the PE terminal. Otherwise, the equipment may not function properly.

Power-on



- Before power-on, make sure that the equipment is installed properly with reliable wiring and the motor can be restarted.
- Before power-on, make sure that the power supply meets equipment requirements to prevent equipment damage or even a fire.
- After power-on, do not open the cabinet door or protective cover of the equipment. Do not touch any terminals, or remove any part of the equipment at power-on. Failure to comply will result in an electric shock.



- Perform a trial run after wiring and parameter setting to ensure that the equipment operates safely. Failure to comply may result in personal injuries or equipment damage.
- Before power-on, check that the rated voltage of the equipment is consistent with that of the power supply. Failure to comply may result in a fire. If the power supply voltage is used incorrectly, it will result in a fire.
- Before power-on, check that no one is near the equipment, motor, or other mechanical parts. Failure to comply may result in personal injuries or even death.

Operation



- The equipment must be operated only by professionals. Failure to comply will result in personal injuries or even death.
- Do not touch any terminals or remove any part of the equipment during operation. Failure to comply will result in an electric shock.



- Do not touch the equipment shell, fan, or resistor for temperature detection. Failure to comply will result in heat injuries.
- Prevent metal or other objects from falling into the device during operation. Failure to comply may result in fire or equipment damage.

Maintenance



- Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed by only professionals.
- Do not maintain the equipment at power-on. Failure to comply will result in an electric shock.
- Before maintenance, cut off all equipment power supplies and wait as specified on the product warning sign.
- In case of a permanent magnet motor, do not touch the motor terminals even after power-off because there is still induced voltage generated during rotation. Failure to comply will result in an electric shock.



- Perform daily and periodic inspection and maintenance for the equipment according to maintenance requirements and keep a maintenance record.

Repair



- Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed by only professionals.
- Do not repair the equipment at power-on. Failure to comply will result in an electric shock.
- Before inspection and repair, cut off all equipment power supplies and wait as specified on the product warning sign.

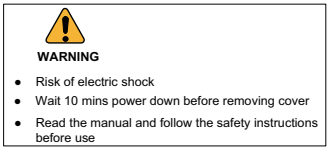


- Require for repair services according to the product warranty agreement.
- When the fuse is blown or the circuit breaker or earth leakage circuit breaker (ELCB) trips, wait as specified on the product warning sign before power-on or further operations. Failure to comply may result in personal injuries, equipment damage or even death.
- When the equipment is faulty or damaged, require professionals to perform troubleshooting and repair by following repair instructions and keep a repair record.
- Replace quick-wear parts of the equipment according to the replacement guide.
- Do not operate damaged equipment. Failure to comply may result in worse damage.
- After the equipment is replaced, perform wiring inspection and parameter settings again.

Disposal
WARNING • Dispose of retired equipment by following local regulations or standards. Failure to comply may result in property damage, personal injuries, or even death. • Recycle retired equipment by following industry waste disposal standards to avoid environmental pollution.

Safety Signs

To ensure safe operations, comply with safety signs on the device, and do not damage or remove the safety labels. The following table describes the safety signs.

Safety Signs	Description
	• Read the user guide before installation and operation. Failure to comply will result in an electric shock. • Do not remove the cover at power-on or within 10 minutes after power-off. • Before maintenance, inspection, and wiring, cut off input and output power, and wait at least 10 minutes until the power indicator is off.

1.2 Industrial Information Security

The product provides an interface to connect to the network and transmit data through the network interface. To protect factories, systems, machines, and networks from cyber attacks, a proper industrial information security protection mechanism must be implemented to ensure safe operation of factories, systems, machines, and networks.

The customer is responsible for providing and continuously ensuring a secure connection between the product and the customer network or any other network to prevent unauthorized access to its factories, systems, machines, and networks. The system and device can be connected to the corporate network or Internet only when they are connected securely with appropriate security measures taken (for example, anti-virus software and firewall installation).

Inovance is committed to continuous development and improvement of the products and solutions to improve the level of safety. It is strongly recommended to update the product promptly and always use the latest version.



Tampering with software (such as viruses, Trojans, and Worms) can lead to unsafe drive state, which can put the device in an unsafe operation state. This may result in death, serious injury, and property damage. Observe the following strictly.

- Always use the latest software version. If the product version is no longer supported or the latest version of the program is not applied, customers are at increased risk of cyber-attacks.
- Take proper protection measures (including but not limited to deploying antivirus software, firewall, WAF, IPS/IDS, situational awareness system, ID verification, and data encryption) to prevent files in the mobile storage device from being damaged by malware and protect products, networks, systems, and interfaces from unauthorized access, disturbance, intrusion, data disclosure, or information theft.
- Check all safety-related interfaces and settings after commissioning.

2 Parameter List

The parameters of the NICE3000^{new} system adopt a three-level menu structure.

- The parameter group is Level-I menu.
- Level II: parameters
- Level III: parameter value

Meaning of each column in the parameter table:

Param.	Name	Range	Default	Unit	Property [1]
Parameter number	Full name of the parameter	Effective value range of parameter	Factory setting of the parameter	Measurement unit of the parameter	Operation property of parameters (whether to allow modification and modification conditions)

Notes on [1]:

" ☆ ": The parameter can be modified when the NICE3000^{new} controller is in either stop or running state.

" ★ ": The parameter cannot be modified when the NICE3000^{new} controller is in the running state.

"●" : The parameter is the actually measured value and cannot be modified.

Note

For the property of each parameter, the system has established an automatic check constraint mechanism, which can help users avoid incorrect operations.

The LED operating panel connected with the controller allows the running state display, parameter setting, fault information viewing, and so on. The detailed parameters are as follows:

Param.	Name	Range	Default	Unit	Property
Group F0: Basic Parameters					
F0-00	Control mode	0: Sensorless vector control (SVC) 1: Feedback vector control (FVC) 2: V/f control	1	-	★
F0-01	Command source selection	0: External LED keypad control 1: Distance control	1	-	★
F0-02	Running speed under operating panel control	0.050 to F0-04	0.050	m/s	☆
F0-03	Running speed	0.250 to F0-04	1.600	m/s	★
F0-04	(Rated speed)	0.250 to 4.000	1.600	m/s	★

Param.	Name	Range	Default	Unit	Property
F0-05	Rated load	300 to 9999	1000	kg	★
F0-06	Maximum frequency	F1-04 to 99.00	50.00	Hz	★
F0-07	Carrier frequency	0.5 to 16.0	6.0	kHz	★
Group F1: Motor Parameters					
F1-00	Encoder type	0: Sin/Cos encoder 1: UVW encoder 2: ABZ encoder 3: Endat absolute encoder 4: Weton communication-type encoder	0	-	★
F1-01	Rated power	0.7 to 75.0	Model dependent	kW	★
F1-02	Rated voltage	0 to 600	Model dependent	V	★
F1-03	Rated current	0.00 to 655.00	Model dependent	A	★
F1-04	Rated frequency	0.00 to F0-06	Model dependent	Hz	★
F1-05	Rated speed	0 to 3000	Model dependent	rpm	★
F1-06	Encoder initial angle (synchronous motor)	0.0 to 359.9	0	°	★
F1-07	Encoder angle at power-off (synchronous motor)	0.0 to 359.9	0	°	★
F1-08	Synchronous motor wiring mode	0 to 15	0	-	★
F1-09	Current filter time (synchronous motor)	0.0 to 359.9	0	-	★
F1-10	Encoder signal check	0 to 65535	0	-	★
F1-11	Auto-tuning mode	0: No operation 1: With-load auto-tuning 2: No-load auto-tuning 3: Shaft auto-tuning 1, with parameters in group Fr not cleared 4: Shaft auto-tuning 2, with parameters in group Fr cleared 5: Synchronous motor static auto-tuning	0	-	★
F1-12	Encoder PPR	100 to 10000	2048	PPR	★
F1-13	Encoder disconnection detection time	0 to 10.0	2.1	s	★
F1-14	Stator resistance (asynchronous motor)	0.000 to 30.000	0.000	Ω	★

Param.	Name	Range	Default	Unit	Property
F1-15	Rotor resistance (asynchronous motor)	0.000 to 30.000	0.000	Ω	★
F1-16	Leakage inductance (asynchronous motor)	0.00 to 300.00	0.00	mH	★
F1-17	Mutual inductance (asynchronous motor)	0.0 to 3000.0	0.0	mH	★
F1-18	No-load current (asynchronous motor)	0.00 to 300.00	0.00	A	★
F1-19	Q-axis inductance (torque)	0.00 to 650.00	3	mH	★
F1-20	D-axis inductance (excitation)	0.00 to 650.00	3	mH	★
F1-21	Back EMF coefficient	0 to 65535	0	-	★
F1-22	Angle-free auto-tuning function	bit1 = 1, bit2 = 0: Semi-automatic angle-free auto-tuning bit1 = 1, bit2 = 1: Automatic angle-free auto-tuning	0	-	★
F1-25	Motor type	0: Asynchronous motor 1: Synchronous motor	1	-	★
Group F2: Vector Control Parameters					
F2-00	Speed loop proportional gain Kp1	0 to 100	40	-	★
F2-01	Speed loop integral time Ti1	0.01 to 10.00	0.60	s	★
F2-02	Switchover frequency 1	0.00 to F2-05	2.00	Hz	★
F2-03	Speed loop proportional gain Kp2	0 to 100	35	-	★
F2-04	Speed loop integral time Ti2	0.01 to 10.00	0.80	s	★
F2-05	Switchover frequency 2	F2-02 to F0-06	5	Hz	★
F2-06	Current loop proportional gain Kp	10 to 500	60	-	★
F2-07	Current loop integral gain Ki	10 to 500	30	-	★
F2-08	Torque upper limit	0.0 to 200.0	200.0	%	★
F2-10	Elevator running direction	0: Running direction unchanged 1: Direction reversed	0	-	★
F2-11	Position lock current coefficient	2.0 to 50.0	15.0	%	★
F2-12	Zero servo speed loop Kp	0.00 to 2.00	0.50	-	★
F2-13	Zero servo speed loop Ti	0.00 to 2.00	0.60	-	★
F2-16	Torque acceleration time	1 to 500	1	ms	★
F2-17	Torque deceleration time	1 to 3000	350	ms	★
F2-18	Startup acceleration time	0.000 to 1.500	0.000	s	★
F2-24	Reduction ratio	1 to 100	10	-	★

Param.	Name	Range	Default	Unit	Property
F2-25	Program control word 3	0 to 65535	0	-	★
F2-26	Optimized position loop gain Kp of the position lock	0 to 30	3	-	★
F2-27	Optimized position loop gain Ki of the position lock	0 to 150	15	-	★
F2-28	Drive commissioning parameter 1	0 to 65535	0	-	☆
F2-29	Drive commissioning parameter 2	0 to 65535	0	-	☆
F2-30	Drive commissioning parameter 3	0 to 65535	0	-	☆
F2-31	Drive commissioning parameter 4	0 to 65535	0	-	☆
F2-32	Drive commissioning parameter 5	0 to 10	5	s	☆
F2-33	Torque amplitude detection	50 to 150	110	%	★
F2-34	Drive commissioning parameter 7	0 to 100	30	-	☆
F2-35	Drive commissioning parameter 8	0 to 20	0	°	☆
F2-36	Drive commissioning parameter 9	0 to 65535	0	-	☆
F2-37	Reserved auto-tuning parameter 1	0 to 65535	0	-	☆
F2-38	Reserved auto-tuning parameter 2	0 to 65535	0	-	☆
F2-39	Reserved auto-tuning parameter 3	0 to 65535	0	-	☆
F2-40	Reserved auto-tuning parameter 4	0 to 65535	0	-	☆
Group F3: Running Control Parameters					
F3-00	Startup speed	0.000 to 0.050	0.000	m/s	★
F3-01	Startup speed holding time	0.000 to 5.000	0.000	s	★
F3-02	Acceleration rate	0.200 to 1.500	0.700	m/s^2	★
F3-03	Acceleration end jerk time 1	0.300 to 4.000	1.500	s	★
F3-04	Acceleration end jerk time 2	0.300 to 4.000	1.500	s	★
F3-05	Deceleration rate	0.200 to 1.500	0.700	m/s^2	★
F3-06	Deceleration start jerk time 1	0.300 to 4.000	1.500	s	★
F3-07	Deceleration start jerk time 2	0.300 to 4.000	1.500	s	★
F3-08	Special deceleration rate	0.500 to 1.500	0.900	m/s^2	★
F3-09	Pre-deceleration distance	0 to 90.0	0.0	mm	★

Param.	Name	Range	Default	Unit	Property
F3-10	Re-leveling speed	0.020 to 0.080	0.040	m/s	★
F3-11	Inspection speed	0.100 to 0.630	0.250	m/s	★
F3-12	Position of up slow-down switch 1	0.00 to 300.00	0.00	m	★
F3-13	Position of down slow-down switch 1	0.00 to 300.00	0.00	m	★
F3-14	Position of up slow-down switch 2	0.00 to 300.00	0.00	m	★
F3-15	Position of down slow-down switch 2	0.00 to 300.00	0.00	m	★
F3-16	Position of up slow-down switch 3	0.00 to 300.00	0.00	m	★
F3-17	Position of down slow-down switch 3	0.00 to 300.00	0.00	m	★
F3-18	Zero-speed current output time	0.200 to 1.000	0.200	s	★
F3-19	Holding time of zero-speed torque current upon brake release	0.000 to 2.000	0.600	s	★
F3-20	Zero-speed control time at end	0.000 to 1.000	0.300	s	★
F3-21	Low-speed re-leveling speed	0.080 to F3-11	0.250	m/s	★
F3-22	Acceleration rate at emergency rescue	0.100 to 1.300	0.300	m/s^2	★
F3-23	Deceleration delay time upon hitting slow-down switch	0.00 to 10.00	0.00	s	★
F3-24	Program function selection	0: Reserved 1: Slip test 2: Manual test of UCMP 3: Overspeed governor test and reset 6: Balancing factor auto-tuning 18: Maintenance entry 19: Maintenance exit 20: Dynamic braking force test 24: Manual ascending car overspeed protection (ACOP) test 25: Manual time limiter test 26: Manual shorting motor stator braking test 29: Linkage test of car safety gear 30: Linkage test of counterweight safety gear 31: Shorting motor stator pulse test	0	-	★
F3-25	Elevator speed in the EEO state	0.100 to 0.300	0.250	m/s	★

Param.	Name	Range	Default	Unit	Property
F3-26	(Shaft auto-tuning speed)	0.100 to 0.630	0.250	m/s	★
F3-27	E33 overspeed margin	0.000 to 1.000	0.050	m/s	★
F3-28	Terminal floor verification speed	0.080 to F0-03	0.500	m/s	★
Group F4: Floor Parameters					
F4-00	Leveling adjustment	0 to 60	30	mm	★
F4-01	Current floor	F6-01 to F6-00	1	-	★
F4-02	High-order bits of current elevator position	0 to 65535	0	pls	●
F4-03	Low-order bits of current elevator position	0 to 65535	0	pls	●
F4-04	Leveling plate length 1	0 to 65535	0	pls	★
F4-05	Leveling plate length 2	0 to 65535	0	pls	★
F4-06	High-order bits of floor 1	0 to 65535	0	pls	★
F4-07	Low-order bits of floor 1	0 to 65535	0	pls	★
F4-08	High-order bits of floor 2	0 to 65535	0	pls	★
F4-09	Low-order bits of floor 2	0 to 65535	0	pls	★
F4-10	High-order bits of floor 3	0 to 65535	0	pls	★
F4-11	Low-order bits of floor 3	0 to 65535	0	pls	★
F4-12	High-order bits of floor 4	0 to 65535	0	pls	★
F4-13	Low-order bits of floor 4	0 to 65535	0	pls	★
F4-14	High-order bits of floor 5	0 to 65535	0	pls	★
F4-15	Low-order bits of floor 5	0 to 65535	0	pls	★
F4-16	High-order bits of floor 6	0 to 65535	0	pls	★
F4-17	Low-order bits of floor 6	0 to 65535	0	pls	★
F4-18	High-order bits of floor 7	0 to 65535	0	pls	★
F4-19	Low-order bits of floor 7	0 to 65535	0	pls	★
F4-20	High-order bits of floor 8	0 to 65535	0	pls	★
F4-21	Low-order bits of floor 8	0 to 65535	0	pls	★
F4-22	High bits of floor 9	0 to 65535	0	pls	★
F4-23	Low bits of floor 9	0 to 65535	0	pls	★
F4-24	High bits of floor 10	0 to 65535	0	pls	★
F4-25	Low bits of floor 10	0 to 65535	0	pls	★
High byte of floor 2 to low byte of floor 95					
F4-196	High bits of floor 96	0 to 65535	0	pls	★
F4-197	Low bits of floor 96	0 to 65535	0	pls	★
F4-198	High bits of floor 97	0 to 65535	0	pls	★
F4-199	Low bits of floor 97	0 to 65535	0	pls	★
Group F5: Terminal Function Parameters					
F5-00	Attendant/normal state switchover time	3 to 200	3	s	★

Param.	Name	Range	Default	Unit	Property
F5-01	X1 function selection	NO (0)/NC (0): Reserved NO (1)/NC (33): Up leveling NO (2)/NC (34): Down leveling NO (3)/NC (35): Door zone NO (4)/NC (36): Safety circuit 1 NO (5)/NC (37): Door lock circuit 1 NO (6)/NC (38): RUN contactor feedback NO (7)/NC (39): Brake contactor feedback NO (8)/NC (40): Inspection NO (9)/NC (41): Inspection/EEO (emergency electrical operation) up NO (10)/NC (42): Inspection/EEO (emergency electrical operation) down NO (11)/NC (43): Fire emergency	1	-	★
F5-02	X2 function selection		0	-	★
F5-03	X3 function selection		2	-	★
F5-04	X4 function selection		118	-	★
F5-05	X5 function selection		0	-	★
F5-06	X6 function selection		38	-	★
F5-07	X7 function selection		39	-	★
F5-08	X8 function selection		30	-	★
F5-09	X9 function selection		116	-	★
F5-10	X10 function selection		9	-	★
F5-11	X11 function selection		10	-	★
F5-12	X12 function selection		0	-	★
F5-13	X13 function selection		0	-	★
F5-14	X14 function selection	NO (12)/NC (44): Up limit NO (13)/NC (45): Down limit NO (14)/NC (46): Overload NO (15)/NC (47): Full load NO (16)/NC (48): Up slow-down 1 NO (17)/NC (49): Down slow-down 1 NO (18)/NC (50): Up slow-down 2 NO (19)/NC (51): Down slow-down 2 NO (20)/NC (52): Up slow-down 3 NO (21)/NC (53): Down slow-down 3	48	-	★
F5-15	X15 function selection	NO (22)/NC (54): Shorting door lock circuit relay feedback NO (23)/NC (55): Firefighter NO (24)/NC (56): Door 1 light curtain NO (25)/NC (57): Door 2 light curtain	49	-	★

Param.	Name	Range	Default	Unit	Property
F5-16	X16 function selection	NO (26)/NC (58): Brake travel switch 1 NO (27)/NC (59): Emergency evacuation at power failure NO (28)/NC (60): Elevator lock NO (29)/NC (61): Safety circuit 2 NO (30)/NC (62): Shorting motor stator contactor feedback NO (31)/NC (63): Door lock circuit 2 NO (65)/NC (97): Door 1 safety edge NO (66)/NC (98): Door 2 safety edge NO (67)/NC (99): Motor overtemperature NO (68)/NC (100): Earthquake NO (69)/NC (101): Rear door forbidden NO (70)/NC (102): Light load NO (71)/NC (103): Half load NO (72)/NC (104): Fire emergency floor switchover NO (73)/NC (105): Dummy floor NO (74)/NC (106): Auxiliary brake contactor 1 Feedback NO (75)/NC (107): Auxiliary brake contactor 2 Feedback NO (76)/NC (108): Door 1 open NO (77)/NC (109): Door 2 open NO (78)/NC (110): Brake travel switch 2 NO (79)/NC (111): External fault NO (80)/NC (112): Terminal floor signal NO (81)/NC (113): Door lock 1 shorting NO (82)/NC (114): Door lock 2 shorting	50	-	★
F5-17	X17 function selection		51	-	★
F5-18	X18 function selection		58	-	★
F5-19	X19 function selection		0	-	★
F5-20	X20 function selection		99	-	★
F5-21	X21 function selection		0	-	★

Param.	Name	Range	Default	Unit	Property
F5-22	X22 function selection	NO (84)/NC (116): EEO	110	-	★
F5-23	X23 function selection	NO (86)/NC (118): Door lock bypass	0	-	★
F5-24	X24 function selection	NO (87)/NC (119): Fire emergency and firefighter common input terminal NO (88)/NC (120): Rope gripper feedback NO (89)/NC (121): Reserved NO (90)/NC (122): Manual shorting stator braking mode (Honor series control cabinet) NO (91)/NC (123): Inspection up limit (Honor series control cabinet) NO (92)/NC (124): Inspection down limit (Honor series control cabinet) NO (93)/NC (125): Relay Y8 feedback (Honor series control cabinet) NO (94)/NC (126): Electrical brake release (Honor series control cabinet) NO (95)/NC (127): Shaft auto-tuning input (Honor series control cabinet) NO (256)/NC (288): Triangle key input signal NO (257)/NC (289): Triangle key reset signal NO (259)/NC (291): Alarm filtered signal NO (261)/NC (293): Auxiliary brake contactor 3 feedback NO (262)/NC (294): Brake travel switch 3 feedback NO (268)/NC (300): Integrated shorting motor stator contactor pulse input NO (274)/NC (306): Auxiliary shorting motor stator contactor feedback NO (277)/NC (309): Fault reset Note: For the same signal, NC parameter setting = NO parameter setting + 32.	0	-	★
F5-25	Car top board input signal type	bit0: Door 1 light curtain bit1: Door 2 light curtain bit2: Door 1 open limit bit3: Door 2 open limit bit4: Door 1 close limit bit5: Door 2 close limit bit6: Full-load signal bit7: Overload signal bit8: Light-load signal bit9: Up leveling bit10: Down leveling bit11: Door operator overtemperature bit12: Door 1 safety edge bit13: Door 2 safety edge	1856	-	★

Param.	Name	Range	Default	Unit	Property
F5-26	Y1 function selection	0: Reserved 1: RUN contactor output 2: Brake contactor output 3: Shorting door lock circuit contactor output 4: Fire emergency floor arrival signal feedback 5: Door machine 1 open 6: Door operator 1 close 7: Door machine 2 open 8: Door operator 2 close 9: Brake and RUN contactors healthy 10: Fault state 11: Running state output 12: Shorting PMSM stator contactor output 13: Emergency evacuation automatic switchover 14: System healthy 15: Emergency buzzer control 16: Brake pick voltage 17: Elevator running in up direction 18: Lighting/Fan output 19: Medical sterilization control output 20: Non-door zone stop 21: Electromagnetic lock control output 22: Non-service state indication 23: Emergency evacuation completed 25: Rope gripper reset 26: Braking transistor short circuit output 27: Alarm filtered output 28: Overspeed governor test output 29: Overspeed governor reset output 31: Shorting motor stator contactor output test completed 32: AGV status indicator output 33: Auxiliary brake contactor 1 output 34: Auxiliary brake contactor 2 output 39: Auxiliary synchronous motor self-locking output	1	-	★
F5-27	Y2 function selection		2	-	★
F5-28	Y3 function selection		12	-	★
F5-29	Y4 function selection		4	-	★
F5-30	Y5 function selection		0	-	★
F5-31	Y6 function selection		0	-	★
F5-45	Y2A function selection		0	-	★
F5-46	Y7 function selection		0	-	★
F5-32	Communication state	Communication state monitoring of CANbus and Modbus	0	-	●

Param.	Name	Range	Default	Unit	Property
F5-33	Program control selection	bit3: Elevator fire emergency requirements in Hong Kong bit4: Arrival gong disabled at night function bit6: Door lock disconnected once during switchover from the inspection state to the normal state bit7: Fault code not displayed on the keypad bit8: Door open command canceled immediately when receiving the door open limit signal bit9: Torque output holding at stop in the case of abnormal brake feedback bit15: Elevator fire emergency in Hong Kong SAR, masking elevator lock at door open and elevator lock message prompt	0	-	★
F5-34	Terminal State Display	Monitoring of I/O terminals on the MCB (main control board)	0	-	●
F5-35	Terminal State Display	Monitoring of I/O terminals on CTB (car top board), CCB (car call board), and HCB (hall call board)	0	-	●
F5-36	Load cell input selection	0: Main control board digital input 1: Car top board digital input 2: Car top board analog input 3: Main control board analog input	1	-	★
F5-37	X25 function selection	0: Reserved 4: Safety circuit signal 5: Door lock circuit signal 1 (high-voltage input detection point, multiplexing allowed) 6: Door lock circuit signal 2 (high-voltage input detection point, multiplexing allowed) 7: Door lock 1 shorting inspection 8: Door lock 2 shorting inspection	4	-	★
F5-38	X26 function selection		7	-	★
F5-39	X27 function selection		5	-	★
F5-40	X28 function selection		8	-	★
Group F6: Basic Elevator Parameters					
F6-00	Top floor of the elevator	F6-01 to F6-48	9	-	★
F6-01	Bottom floor of the elevator	1 to F6-00	1	-	★
F6-02	Parking floor	F6-01 to F6-00	1	-	★
F6-03	Fire emergency floor	F6-01 to F6-00	1	-	★
F6-04	Elevator lock floor	F6-01 to F6-00	1	-	★
F6-05	Service floor 1	0 to 65535 (floors 1 to 16)	65535	-	★
F6-06	Service floor 2	0 to 65535 (floors 17 to 32)	65535	-	★
F6-07	Number of elevators in group control	1 to 8	1	-	★
F6-08	Elevator No.	1 to 8	1	-	★

Param.	Name	Range	Default	Unit	Property
F6-09	Program selection	bit0: Dispersed waiting bit2: Monitoring port parallel connection bit3: CAN2 parallel/group control bit4: Group control compatibility mode bit6: Clearing the floor number and direction display in advance bit8: Unidirectional hall call (single hall call button) bit9: Analog disconnection not detected bit10: Re-leveling E30 cancellation bit13: Disability calls in parallel/group control bit14: Time interval detection of safety circuit 2 and door lock circuit 2 (1.5s)	8	-	★
F6-10	Leveling switch delay	10 to 50	14	ms	★
F6-11	Elevator function selection	bit1: Canceling returning to base floor for verification bit2: Canceling automatic ordering of hall call addresses bit5: Starting current output phase loss detection of synchronous motor bit6: Reversing MCB lighting output bit7: Door open in the non-door zone in the inspection state bit8: Doors open and close once when inspection state switches to normal state at first-time power-on bit10: Buzzer not tweeting upon re-leveling bit11: Customized super-short floor function bit12: Automatic fault reset after an hour bit13: E53 fault auto reset bit14: Floor display not reset by up slow-down signal when super-short floor function is enabled bit15: Floor display not reset by down slow-down signal when super-short floor function is enabled	8448	-	★
F6-12	VIP floor	0 to F6-00	0	-	★
F6-13	Security floor	0 to F6-00	0	-	★
F6-14	Start time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	☆
F6-15	End time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	☆
F6-16	Start time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	☆
F6-17	End time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	☆

Param.	Name	Range	Default	Unit	Property
F6-18	Start time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	☆
F6-19	End time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	☆
F6-20	Service floor 1 of time-based floor service 1 (floors 1 to 16)	0 to 65535	65535	-	☆
F6-21	Service floor 2 of time-based floor service 1 (floors 17 to 32)	0 to 65535	65535	-	☆
F6-22	Start time of time-based floor service 2	00.00 to 23.59	0	HH.MM	☆
F6-23	End time of time-based floor service 2	00.00 to 23.59	0	HH.MM	☆
F6-24	Service floor 1 of time-based floor service 2 (floors 1 to 16)	0 to 65535	65535	-	☆
F6-25	Service floor 2 of time-based floor service 2 (floors 17 to 32)	0 to 65535	65535	-	☆
F6-26	Peak 1 start time for parallel/group control	00.00 to 23.59	0	HH.MM	☆
F6-27	Peak 1 end time for parallel/group control	00.00 to 23.59	0	HH.MM	☆
F6-28	Peak 1 floor for parallel/group control	F6-01 to F6-00	1	-	★
F6-29	Peak 2 start time for parallel/group control	00.00 to 23.59	0	HH.MM	☆
F6-30	Peak 2 end time for parallel/group control	00.00 to 23.59	0	HH.MM	☆
F6-31	Peak 2 floor for parallel/group control	F6-01 to F6-00	1	-	★
F6-35	Service floor 3 (floors 33 to 48)	0 to 65535 (floors 33 to 48)	65535	-	☆
F6-36	Service floor 1 of time-based floor service 3 (floors 33 to 48)	0 to 65535	65535	-	☆
F6-37	Service floor 2 of time-based floor service 3 (floors 33 to 48)	0 to 65535	65535	-	☆
F6-38	Elevator lock start time	00.00 to 23.59	0	HH.MM	☆
F6-39	Elevator lock end time	00.00 to 23.59	0	HH.MM	☆

Param.	Name	Range	Default	Unit	Property
F6-40	Program control selection 1	bit0: Accessibility function selection bit1: Software limit function bit2: JP16 input used as rear door selection (button) bit3: JP16 input used as rear door open signal bit4: Opening only one door of through-type door under manual control bit5: Timed elevator lock function bit6: Manually operated door function selection bit7: Fire service or elevator lock through hall call from any floor bit8: Duplicated command used as accessibility function and duplicated hall call as rear door function bit9: Disabling reverse floor number clear bit10: Displaying the next arriving number bit11: Responding to car calls first bit12: Car call auxiliary command terminal used for accessibility function bit13: Duplicated command used as accessibility function and rear door function (0: rear door function; 1: accessibility function) bit14: Car call command duplication bit15: JP20 input used for switchover to rear door (switch)	0	-	★
F6-41	Program control selection 2	bit0: Not stop at the slow-down switch for car top inspection bit2: Decelerating to stop due to slow-down 1 in inspection state bit3: Car top communication inspection bit4: Buzzer tweet during door open delay bit5: Steel rope slip compensation bit6: Door open delay cancellation bit7: Buzzer prompt for active button input bit8: Elevator lock at door open bit9: Display available at elevator lock bit10: Elevator lock in the attendant state bit11: Flashing at arrival (within the time set in F6-47) bit12: Door re-open during door open delay bit13: Door re-open upon valid car call of current floor bit14: Electricity meter count 8 function bit15: Electricity meter count 6 function	0	-	★

Param.	Name	Range	Default	Unit	Property
F6-42	Program control selection 3	bit0: COB hall call scheme selection bit1: Canceling door open/close command at delay after door open/close limit bit2: Door lock state not judged at door close output bit3: Door close output during running bit4: Returning to terminal floor for verification at first-time power-on bit5: Clearing calls immediately at elevator lock bit6: Electromagnetic lock NC output bit7: Canceling E50 detection bit8: Canceling door open/close limit detection bit9: Canceling fault subcode scrolling display bit10: Door open energy saving bit11: Independent switch exiting from parallel control bit12: UCMP door lock detection enabled bit13: Door close quickly upon light curtain detecting obstacles bit14: Fault E53-103/106 auto reset enabled	18432	-	★
F6-43	Attendant function selection	bit0: Calls canceled after entering the attendant state bit1: No response to hall calls bit2: Attendant/normal state switchover bit3: Door close at jog bit4: Automatic door close bit5: Buzzer tweeting at intervals in attendant state bit6: Continuous buzzer tweeting in attendant state bit7: Car call button blinking to prompt	128	-	★

Param.	Name	Range	Default	Unit	Property
F6-44	Fire emergency function selection	bit3: Arrival gong output in the inspection or fire emergency state bit4: Multiple car calls registered in the fire emergency state bit5: Retentive at power failure in the fire emergency state bit6: Door close by holding down the door close button bit8: Door close at car call registration bit9: Display floor number upon hall call in the fire emergency state bit10: JP22 used for forced running input in the firefighter state bit11: Exiting the firefighter state upon arrival at fire emergency floor bit12: Not clearing car calls at reverse door open in firefighter running state bit13: Display board showing fault after fire emergency floor arrival bit14: Door open by holding down the door open button bit15: Automatic door open at fire emergency floor	16456	-	★
F6-45	Emergency evacuation function selection	bit0: Orientation mode 0 bit1: Orientation mode 1 (00: automatic computation of the direction; 01: determined by the load direction; 10: direction of the nearest landing floor; 11: defined direction) bit2: Stopping at the main floor (landing otherwise at the nearest floor) bit4: Startup compensation (valid or not during emergency evacuation) bit5: Direction set for controller drive evacuation (bit5 = 1: Up, bit5 = 0: Down) bit8: Emergency evacuation running time protection bit10: Emergency buzzer output bit11: HCB prompt bit12: Speed setting for shorting motor stator mode switched over to controller drive bit13: Shorting stator braking mode switched over to controller drive bit14: Emergency evacuation exit mode (bit14 = 1: Door close limit; bit14 = 0: Door open limit) bit15: Shorting motor stator function	16384	-	★

Param.	Name	Range	Default	Unit	Property
F6-46	VIP function selection	bit0: VIP enabled by hall call (at VIP floor) bit1: VIP enabled by terminal bit8: Number of VIP car calls limited	0	-	★
F6-47	Blinking advance time	0.0 to 15.0	1.0	s	☆
F6-48	Emergency evacuation switching speed	0.010 to 0.630	0.010	m/s	★
F6-49	Emergency evacuation parking floor	0 to F6-00	0	-	★
F6-50	Floor offset in parallel control	0 to 40	0	-	★
F6-51	Quiescent current	0.00 to 655.00	0.00	A	★
F6-52	Program function selection	bit1: Communication type-SCB enabled bit2: CAN communication supported by AFE bit3: External shaft reset device bit4: Inspection speed limit at terminal floors bit6: Enabling CTB leveling signal input bit7: Door operator overtemperature detection bit8: Safety edge signal input selection on the CTB bit9: Light curtain fault handling bit12: Disabling automatic output of shorting door lock circuit relay upon floor arrival bit13: Modification of pulse multiplication of asynchronous motor bit15: Forced inspection following interrupted communication	66	-	★

Param.	Name	Range	Default	Unit	Property
F6-54	Program function selection 5	bit0: Door open allowed for forced door close bit1: Door close supported for fault occurrence bit3: No light curtain detection during door close in inspection mode bit4: Not exit elevator parking upon door lock disconnection bit5: Disable hall calls to enter VIP parallel mode and independently optimize response to hall calls bit6: Overspeed protection for shorting stator braking evacuation bit8: Car top maintenance switch reuse of attendant signal bit9: Enable separate brake control bit10: Car top emergency power supply supported bit11: Communication type power supply board supported bit12: Display inspection state when the safety circuit is open during emergency electrical operation (EEO) bit14: Use of direction change switch for alarm bell signal input	0	-	★
F6-55	Function parameter selection	bit0: Door operator use of MOD serial communication bit1: Door operator use of MOD communication check bit2: Door operator use of CAN serial communication bit3: Door operator communication use of contract number verification bit4: Light curtain use of MOD serial communication bit5: Light curtain use of CAN communication bit6: ARD contract No. binding bit9: Change the upper limit setting for factory-specific customized input and output points bit11: Enable communication-type encoder function bit12: Communication-type encoder factory code verification bit13: Enable communication-type encoder contract No. binding bit14: Enable communication-type encoder contract No. binding delay function	0	-	★

Param.	Name	Range	Default	Unit	Property
F6-61	Terminal floor verification function selection	bit0: Disable terminal floor check for abnormal slow-down signals bit1: Enable returning to terminal floor for verification at power-on bit2: Enable terminal floor verification once for inspection switchover to normal state bit3: Disable passenger release before reaching terminal floor for abnormal slow-down signals bit4: Enable wrong floor landing detection bit5: Enable terminal floor verification in slow-down zone bit6: Enable software-simulated terminal floor function bit7 to bit15: Reserved	0	-	☆
F6-62	Number of door zones covered by up slow-down switch	1 to 5	1	-	★
F6-63	Number of door zones covered by down slow-down switch	1 to 5	1	-	★
F6-64	Alarm filter disabled time	5 to 30	10	s	☆
F6-68	Function switch 1	bit1: Integrated shorting motor stator function selection enable bit3: Shorting motor stator self-test function enable	1	-	☆
F6-73	Function switch 2	bit2: Automatic safety gear test enable bit3: Gradual current cancellation at stop (Asynchronous motor) enable bit4: Safety gear test; long press the button to enable the overspeed governor output (DO 38)	0	-	☆
F6-74	Destination floor for linkage test of car safety gear	F6-01 to F6-00	1	-	☆
F6-75	Target floor for linkage test of counterweight safety gear	F6-01 to F6-00	9	-	☆
F6-78	Maximum brake release time during safety gear interlock test	0 to 30	0	s	★
F6-79	Parking delay during safety gear interlock test	0 to 500	0	ms	☆

Param.	Name	Range	Default	Unit	Property
F6-80	Front door car call button not controlled (Floors 1 to 16)	bit0: Floor 1 front door car call button not controlled bit1: Floor 2 front door car call button not controlled bit2: Floor 3 front door car call button not controlled bit3: Floor 4 front door car call button not controlled bit4: Floor 5 front door car call button not controlled bit5: Floor 6 front door car call button not controlled bit6: Floor 7 front door car call button not controlled bit7: Floor 8 front door car call button not controlled bit8: Floor 9 front door car call button not controlled bit9: Floor 10 front door car call button not controlled bit10: Floor 11 front door car call button not controlled bit11: Floor 12 front door car call button not controlled bit12: Floor 13 front door car call button not controlled bit13: Floor 14 front door car call button not controlled bit14: Floor 15 front door car call button not controlled bit15: Floor 16 front door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-81	Front door car call button not controlled (Floors 17 to 32)	bit0: Floor 17 front door car call button not controlled bit1: Floor 18 front door car call button not controlled bit2: Floor 19 front door car call button not controlled bit3: Floor 20 front door car call button not controlled bit4: Floor 21 front door car call button not controlled bit5: Floor 22 front door car call button not controlled bit6: Floor 23 front door car call button not controlled bit7: Floor 24 front door car call button not controlled bit8: Floor 25 front door car call button not controlled bit9: Floor 26 front door car call button not controlled bit10: Floor 27 front door car call button not controlled bit11: Floor 28 front door car call button not controlled bit12: Floor 29 front door car call button not controlled bit13: Floor 30 front door car call button not controlled bit14: Floor 31 front door car call button not controlled bit15: Floor 32 front door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-82	Front door car call button not controlled (Floors 33 to 48)	bit0: Floor 33 front door car call button not controlled bit1: Floor 34 front door car call button not controlled bit2: Floor 35 front door car call button not controlled bit3: Floor 36 front door car call button not controlled bit4: Floor 37 front door car call button not controlled bit5: Floor 38 front door car call button not controlled bit6: Floor 39 front door car call button not controlled bit7: Floor 40 front door car call button not controlled bit8: Floor 41 front door car call button not controlled bit9: Floor 42 front door car call button not controlled bit10: Floor 43 front door car call button not controlled bit11: Floor 44 front door car call button not controlled bit12: Floor 45 front door car call button not controlled bit13: Floor 46 front door car call button not controlled bit14: Floor 47 front door car call button not controlled bit15: Floor 48 front door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-83	Front door car call button not controlled (Floors 49 to 64)	bit0: Floor 49 front door car call button not controlled bit1: Floor 50 front door car call button not controlled bit2: Floor 51 front door car call button not controlled bit3: Floor 52 front door car call button not controlled bit4: Floor 53 front door car call button not controlled bit5: Floor 54 front door car call button not controlled bit6: Floor 55 front door car call button not controlled bit7: Floor 56 front door car call button not controlled bit8: Floor 57 front door car call button not controlled bit9: Floor 58 front door car call button not controlled bit10: Floor 59 front door car call button not controlled bit11: Floor 60 front door car call button not controlled bit12: Floor 61 front door car call button not controlled bit13: Floor 62 front door car call button not controlled bit14: Floor 63 front door car call button not controlled bit15: Floor 64 front door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-84	Rear door car call button not controlled (Floors 1 to 16)	bit0: Floor 1 rear door car call button not controlled bit1: Floor 2 rear door car call button not controlled bit2: Floor 3 rear door car call button not controlled bit3: Floor 4 rear door car call button not controlled bit4: Floor 5 rear door car call button not controlled bit5: Floor 6 rear door car call button not controlled bit6: Floor 7 rear door car call button not controlled bit7: Floor 8 rear door car call button not controlled bit8: Floor 9 rear door car call button not controlled bit9: Floor 10 rear door car call button not controlled bit10: Floor 11 rear door car call button not controlled bit11: Floor 12 rear door car call button not controlled bit12: Floor 13 rear door car call button not controlled bit13: Floor 14 rear door car call button not controlled bit14: Floor 15 rear door car call button not controlled bit15: Floor 16 rear door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-85	Rear door car call button not controlled (Floors 17 to 32)	bit0: Floor 17 rear door car call button not controlled bit1: Floor 18 rear door car call button not controlled bit2: Floor 19 rear door car call button not controlled bit3: Floor 20 rear door car call button not controlled bit4: Floor 21 rear door car call button not controlled bit5: Floor 22 rear door car call button not controlled bit6: Floor 23 rear door car call button not controlled bit7: Floor 24 rear door car call button not controlled bit8: Floor 25 rear door car call button not controlled bit9: Floor 26 rear door car call button not controlled bit10: Floor 27 rear door car call button not controlled bit11: Floor 28 rear door car call button not controlled bit12: Floor 29 rear door car call button not controlled bit13: Floor 30 rear door car call button not controlled bit14: Floor 31 rear door car call button not controlled bit15: Floor 32 rear door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-86	Rear door car call button not controlled (Floors 33 to 48)	bit0: Floor 33 rear door car call button not controlled bit1: Floor 34 rear door car call button not controlled bit2: Floor 35 rear door car call button not controlled bit3: Floor 36 rear door car call button not controlled bit4: Floor 37 rear door car call button not controlled bit5: Floor 38 rear door car call button not controlled bit6: Floor 39 rear door car call button not controlled bit7: Floor 40 rear door car call button not controlled bit8: Floor 41 rear door car call button not controlled bit9: Floor 42 rear door car call button not controlled bit10: Floor 43 rear door car call button not controlled bit11: Floor 44 rear door car call button not controlled bit12: Floor 45 rear door car call button not controlled bit13: Floor 46 rear door car call button not controlled bit14: Floor 47 rear door car call button not controlled bit15: Floor 48 rear door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-87	Rear door car call button not controlled (Floors 49 to 64)	bit0: Floor 49 rear door car call button not controlled bit1: Floor 50 rear door car call button not controlled bit2: Floor 51 rear door car call button not controlled bit3: Floor 52 rear door car call button not controlled bit4: Floor 53 rear door car call button not controlled bit5: Floor 54 rear door car call button not controlled bit6: Floor 55 rear door car call button not controlled bit7: Floor 56 rear door car call button not controlled bit8: Floor 57 rear door car call button not controlled bit9: Floor 58 rear door car call button not controlled bit10: Floor 59 rear door car call button not controlled bit11: Floor 60 rear door car call button not controlled bit12: Floor 61 rear door car call button not controlled bit13: Floor 62 rear door car call button not controlled bit14: Floor 63 rear door car call button not controlled bit15: Floor 64 rear door car call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-88	Front door hall call button not controlled (Floors 1 to 16)	bit0: Floor 1 front door hall call button not controlled bit1: Floor 2 front door hall call button not controlled bit2: Floor 3 front door hall call button not controlled bit3: Floor 4 front door hall call button not controlled bit4: Floor 5 front door car call button not controlled bit5: Floor 6 front door hall call button not controlled bit6: Floor 7 front door hall call button not controlled bit7: Floor 8 front door hall call button not controlled bit8: Floor 9 front door hall call button not controlled bit9: Floor 10 front door hall call button not controlled bit10: Floor 11 front door hall call button not controlled bit11: Floor 12 front door hall call button not controlled bit12: Floor 13 front door hall call button not controlled bit13: Floor 14 front door hall call button not controlled bit14: Floor 15 front door hall call button not controlled bit15: Floor 16 front door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-89	Front door hall call button not controlled (Floors 17 to 32)	bit0: Floor 17 front door hall call button not controlled bit1: Floor 18 front door hall call button not controlled bit2: Floor 19 front door hall call button not controlled bit3: Floor 20 front door hall call button not controlled bit4: Floor 21 front door hall call button not controlled bit5: Floor 22 front door hall call button not controlled bit6: Floor 23 front door hall call button not controlled bit7: Floor 24 front door hall call button not controlled bit8: Floor 25 front door hall call button not controlled bit9: Floor 26 front door hall call button not controlled bit10: Floor 27 front door hall call button not controlled bit11: Floor 28 front door hall call button not controlled bit12: Floor 29 front door hall call button not controlled bit13: Floor 30 front door hall call button not controlled bit14: Floor 31 front door hall call button not controlled bit15: Floor 32 front door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-90	Front door hall call button not controlled (Floors 33 to 48)	bit0: Floor 33 front door hall call button not controlled bit1: Floor 34 front door hall call button not controlled bit2: Floor 35 front door hall call button not controlled bit3: Floor 36 front door hall call button not controlled bit4: Floor 37 front door hall call button not controlled bit5: Floor 38 front door hall call button not controlled bit6: Floor 39 front door hall call button not controlled bit7: Floor 40 front door hall call button not controlled bit8: Floor 41 front door hall call button not controlled bit9: Floor 42 front door hall call button not controlled bit10: Floor 43 front door hall call button not controlled bit11: Floor 44 front door hall call button not controlled bit12: Floor 45 front door hall call button not controlled bit13: Floor 46 front door hall call button not controlled bit14: Floor 47 front door hall call button not controlled bit15: Floor 48 front door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-91	Front door hall call button not controlled (Floors 49 to 64)	bit0: Floor 49 front door hall call button not controlled bit1: Floor 50 front door hall call button not controlled bit2: Floor 51 front door hall call button not controlled bit3: Floor 52 front door hall call button not controlled bit4: Floor 53 front door hall call button not controlled bit5: Floor 54 front door hall call button not controlled bit6: Floor 55 front door hall call button not controlled bit7: Floor 56 front door hall call button not controlled bit8: Floor 57 front door hall call button not controlled bit9: Floor 58 front door hall call button not controlled bit10: Floor 59 front door hall call button not controlled bit11: Floor 60 front door hall call button not controlled bit12: Floor 61 front door hall call button not controlled bit13: Floor 62 front door hall call button not controlled bit14: Floor 63 front door hall call button not controlled bit15: Floor 64 front door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-92	Rear door hall call button not controlled (Floors 1 to 16)	bit0: Floor 1 rear door hall call button not controlled bit1: Floor 2 rear door hall call button not controlled bit2: Floor 3 rear door hall call button not controlled bit3: Floor 4 rear door hall call button not controlled bit4: Floor 5 rear door car call button not controlled bit5: Floor 6 rear door hall call button not controlled bit6: Floor 7 rear door hall call button not controlled bit7: Floor 8 rear door hall call button not controlled bit8: Floor 9 rear door hall call button not controlled bit9: Floor 10 rear door hall call button not controlled bit10: Floor 11 rear door hall call button not controlled bit11: Floor 12 rear door hall call button not controlled bit12: Floor 13 rear door hall call button not controlled bit13: Floor 14 rear door hall call button not controlled bit14: Floor 15 rear door hall call button not controlled bit15: Floor 16 rear door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-93	Rear door hall call button not controlled (Floors 17 to 32)	bit0: Floor 17 rear door hall call button not controlled bit1: Floor 18 rear door hall call button not controlled bit2: Floor 19 rear door hall call button not controlled bit3: Floor 20 rear door hall call button not controlled bit4: Floor 21 rear door hall call button not controlled bit5: Floor 22 rear door hall call button not controlled bit6: Floor 23 rear door hall call button not controlled bit7: Floor 24 rear door hall call button not controlled bit8: Floor 25 rear door hall call button not controlled bit9: Floor 26 rear door hall call button not controlled bit10: Floor 27 rear door hall call button not controlled bit11: Floor 28 rear door hall call button not controlled bit12: Floor 29 rear door hall call button not controlled bit13: Floor 30 rear door hall call button not controlled bit14: Floor 31 rear door hall call button not controlled bit15: Floor 32 rear door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-94	Rear door hall call button not controlled (Floors 33 to 48)	bit0: Floor 33 rear door hall call button not controlled bit1: Floor 34 rear door hall call button not controlled bit2: Floor 35 rear door hall call button not controlled bit3: Floor 36 rear door hall call button not controlled bit4: Floor 37 rear door hall call button not controlled bit5: Floor 38 rear door hall call button not controlled bit6: Floor 39 rear door hall call button not controlled bit7: Floor 40 rear door hall call button not controlled bit8: Floor 41 rear door hall call button not controlled bit9: Floor 42 rear door hall call button not controlled bit10: Floor 43 rear door hall call button not controlled bit11: Floor 44 rear door hall call button not controlled bit12: Floor 45 rear door hall call button not controlled bit13: Floor 46 rear door hall call button not controlled bit14: Floor 47 rear door hall call button not controlled bit15: Floor 48 rear door hall call button not controlled	0	-	☆

Param.	Name	Range	Default	Unit	Property
F6-95	Rear door hall call button not controlled (Floors 49 to 64)	bit0: Floor 49 rear door hall call button not controlled bit1: Floor 50 rear door hall call button not controlled bit2: Floor 51 rear door hall call button not controlled bit3: Floor 52 rear door hall call button not controlled bit4: Floor 53 rear door hall call button not controlled bit5: Floor 54 rear door hall call button not controlled bit6: Floor 55 rear door hall call button not controlled bit7: Floor 56 rear door hall call button not controlled bit8: Floor 57 rear door hall call button not controlled bit9: Floor 58 rear door hall call button not controlled bit10: Floor 59 rear door hall call button not controlled bit11: Floor 60 rear door hall call button not controlled bit12: Floor 61 rear door hall call button not controlled bit13: Floor 62 rear door hall call button not controlled bit14: Floor 63 rear door hall call button not controlled bit15: Floor 64 rear door hall call button not controlled	0	-	☆
Group F7: Test Function Parameters					
F7-00	Car call floor registered	0 to F6-00	0	-	☆
F7-01	Up hall call floor registered	0 to F6-00	0	-	☆
F7-02	Down hall call floor registered	0 to F6-00	0	-	☆
F7-03	Random running times	0 to 60000	0	-	☆
F7-04	Hall call	0: Hall call enabled 1: Hall call disabled	0	-	☆
F7-05	Door open	0: Door open allowed 1: Door open forbidden	0	-	☆
F7-06	Overload enable	0: Overload disabled 1: Overload allowed	0	-	☆
F7-07	Limit function	0: Limit switch enabled 1: Limit switch disabled	0	-	☆
F7-08	Random running interval	0 to 1000	0	s	☆

Param.	Name	Range	Default	Unit	Property
F7-09	Braking force detection result	0: Meaningless 1: Pass 2: Fail	0	-	●
F7-10	Countdown for braking force detection period	0 to 21600	1440	min	★
F7-13	Balancing factor	0 to 99.99	0	%	★
F7-14	Reference value of brake torque upper limit (dual-arm)	0 to 999	0	%	●
F7-15	Reference value of brake torque upper limit (single-arm)	0 to 999	0	%	●
F7-17	Torque setting (single-arm)	0 to 150	30	%	★
F7-25	Car top maintenance distance	0.000 to 5.000	2.000	m	★
F7-26	Start time of shorting motor stator braking test	00.00 to 23.59	00.00	-	☆
F7-27	End time of shorting motor stator braking test	00.00 to 23.59	02.00	-	☆
F7-28	Braking force detection start time	00.00 to 23.59	00.00	-	☆
F7-29	Braking force detection end time	00.00 to 23.59	00.00	-	☆
F7-30	Braking force detection time setting	0 to 21600	0	min	☆
F7-32	Ascending car overspeed protection (ACOP) speed percentage	100 to 150	130	%	★
F7-33	Parking holding time	0 to 120	15	s	★
F7-34	Parking slip distance detection setting	1 to 20	5	min	★
F7-35	Parking command delay time	0 to 100	30	ms	★
F7-37	Remaining days for auxiliary shorting motor stator braking test	0 to 65535	7	day	●
F7-38	Automatic trigger cycle for auxiliary shorting motor stator braking test	1 to 15	7	day	★
Group F8: Enhanced Function Parameters					
F8-00	Car load ratio during load cell auto-tuning	0 to 100	0	%	★

Param.	Name	Range	Default	Unit	Property
F8-01	Pre-torque selection	0: Disabled 1: Load cell pre-torque compensation enabled 2: Automatic pre-torque compensation enabled 3: Load cell pre-torque and automatic compensation both in effect	2	-	★
F8-02	Pre-torque offset	0.0 to 100.0	50.0	%	★
F8-03	Drive gain	0.00 to 2.00	0.60	-	★
F8-04	Brake gain	0.00 to 2.00	0.60	-	★
F8-05	Current car load	0 to 255	0	-	●
F8-06	No-load measured by load cell	0 to 255	0	-	★
F8-07	Full-load measured by load cell	0 to 255	100	-	★
F8-08	Anti-nuisance function	bit0: Nuisance judged by load cell bit1: Nuisance judged by light curtain bit2: Nuisance judged by light-load signal	0	-	☆
F8-09	Emergency evacuation speed at power failure	0.020 to 0.300	0.150	m/s	★
F8-10	Emergency evacuation operation mode at power failure	0: Motor not running 1: UPS-powered operation 2: 48 V battery power supply	1	-	★
F8-11	Holding time of zero-speed torque current upon brake close	0.200 to 1.500	0.6	s	★
F8-12	Fire emergency floor 2	0 to F6-00	0	-	★
F8-13	Steel rope slip compensation coefficient	0 to 100	50	-	★
F8-14	Hall call communication setting	bit0: Hall communication baud rate bit1: Baud rate setting bit4: Hall call energy-saving control bit5: VEGA communication protocol (for hall call) bit6: VEGA communication protocol (for car display) bit7: Expansion board MOD port function selection (0 for hall call, 1 for transparent transmission of host computer) bit9: Faint light control of HCB buttons bit10: Enable faint light function of car call buttons bit11: Car time synchronization protocol; distributes RTC time to the car display board	1	-	☆

Param.	Name	Range	Default	Unit	Property
F8-15	CAN communication setting	bit0: No delay of car call button indicator bit1: Disable IC card car call limit bit2: Car call cancellation by pressing button once bit3: IC card handshaking bit4: Enable touchscreen protocol bit5: Enable the communication command board bit6: Car call canceled by holding down the button bit8: Car baud rate selection bit9: IC card function of idle elevator returning to main floor bit10: Door open/close button not controlled by the IC card bit11: CCB and COB information viewing bit12: Communication-type SCB door zone selection bit13: Enable visitor access linkage cancellation with equipment offline bit14: Enable visitor access hall call linkage	0	-	☆
F8-16	Start address of hall call auxiliary command	0 to 40	0	-	☆
F8-17	Hall call address check	0: No check performed 1: Check performed	0	-	☆
F8-18	Communication initialization	0 to 1	0	-	★
F8-20	Display board function selection	bit0: Inspection display selection bit1: Fault display selection bit2: Elevator lock display selection bit3: Fire emergency display selection bit4: Firefighter display switch bit5: Firefighter display selection bit6: Emergency running display switch bit7: Emergency running display selection bit8: Status language display selection bit9: Scrolling floor display selection bit10: Arrow style selection 1 bit11: Arrow style selection 2	0	-	☆

Param.	Name	Range	Default	Unit	Property
F8-21	Function selection F8-21	bit0: Enable call re-registration for overload bit1: Enable door open forbidden for hall call of the floor with full load bit2: Enable stop after current cancellation of asynchronous motor bit3: Enable optimization of stop conditions bit4: Enable floor registration forbidden for reverse direction bit5: Enable the limit position fault judgment in shorting stator braking mode bit6: Disable elevator stop optimization upon blocking the light curtain bit7: Prohibit removal of the last call in double-press cancellation bit8: Disable double-press cancellation without door open bit9: Enable auto door open in special conditions bit10: Enable door close delay for hall call input bit11: Disable simulated hall calls at intervals bit12: Disable UPS and leveling compensation optimization bit13: Disable random service floor judgment bit14: Disable communication optimization for re-leveling error bit15: Disable re-leveling times protection	0	-	☆
F8-29	Communication-type encoder contract No. binding delay days	0 to 15	0	-	★
F8-33	Function selection F8-33	bit1: Enable safety circuit disconnection in EEO state bit2: Enable pit reset function by the MCB input terminal bit3: Enable pit reset by the pit inspection point bit4: Enable pit reset by the hall call input terminal bit5: Enable pit reset function by the hall call up button bit6: Enable inspection up/down limit function by the MCB input terminal bit6: Enable inspection up/down limit function by the MCB input terminal bit14: The shorting motor stator pulse test and original shorting motor stator braking mode can be selected	11	-	☆

Param.	Name	Range	Default	Unit	Property
F8-34	Function selection F8-34	bit0: Pit X1 inspection signal bit1: Pit X2 inspection up signal bit2: Pit X3 inspection down signal bit3: Pit X4 triangle key signal of front landing door (NC by default) bit4: Pit X5 triangle key signal of rear landing door (NC by default) bit5: Pit X6 record of pit inspection reset signal (NO by default) bit6: Pit input point not reset for the triangle key bit7: No reset operations after the elevator runs during pit inspection bit8: Conditions met for pit inspection reset bit10: Pit access signal on the control cabinet bit11: Pit reset signal on the control cabinet	0	-	●
F8-35	High bits of the RTC register	0 to 65535	0	-	☆
F8-36	Low bits of the RTC register	0 to 65535	0	-	☆
F8-37	High bits of agent No.	0 to 65535	0	-	☆
F8-38	Low bits of agent No.	0 to 65535	0	-	☆
F8-42	Function selection F8-42	bit0: EEO up/down button stuck protection disabled bit1: Car top X15/X16 multiplexing function disabled	0	-	☆
Group F9: Time Parameters					
F9-00	Maximum idle time before returning to main floor	0 to 240	10	min	☆
F9-01	Car energy-saving time	0 to 240	2	min	☆
F9-02	Running time protection	0 to 45	45	s	★
F9-03	Clock: year	2009 to 2100	2011	YYYY	☆
F9-04	Clock: month	1 to 12	1	MM	☆
F9-05	Clock: day	1 to 31	1	DD	☆
F9-06	Clock: hour	0 to 23	0	HH	☆
F9-07	Clock: minute	0 to 59	0	MM	☆
F9-09	Cumulative operation time	0 to 65535	0	h	●
F9-11	High-order bits of running times	0 to 9999	0	-	●
F9-12	Low-order bits of running times	0 to 9999	0	-	●
F9-13	Maintenance notification period	0 to 99	0	day	★
F9-15	Running days for maintenance viewing	0 to 99	0	day	●
Group FA: Keypad Setting Parameters					

Param.	Name	Range	Default	Unit	Property
FA-00	Keypad display selection	0: Reverse display of physical floors 1: Normal display of physical floors 2: Reverse display of hall call floors 3: Normal display of hall call floors	3	-	☆
FA-01	Parameter display in running state	0 to 65535	65535	-	☆
FA-02	Parameter display in the stop state	0 to 65535	65535	-	☆
FA-03	Current encoder angle	0.0 to 359.9	0.0	Degree (°)	●
FA-05	MCB board software	0 to 655.35	0.00	-	●
FA-06	Driver board software version	0 to 655.35	0.00	-	●
FA-07	Heatsink temperature	0 to 65535	0	℃	●
FA-08	Temporary version of the platform	0 to 65535	0	-	●
FA-09	Drive module software version	0 to 655.35	0.00	-	●
FA-10	Auxiliary DSP software version	0 to 65535	0	-	●
FA-11	Pre-torque current	0.0 to 999.9	0.0	%	●
FA-12	Logic information	0 to 65535	0	-	●
FA-13	Curve information	0 to 65535	0	-	●
FA-14	Speed reference	0.000 to 4.000	0.000	m/s	●
FA-15	Feedback speed	0.000 to 4.000	0.000	m/s	●
FA-16	Bus voltage	0 to 999.9	0.0	V	●
FA-17	Current position	0.0 to 300.0	0.0	m	●
FA-18	Output current	0 to 999.9	0.0	A	●
FA-19	Output frequency	0.00 to 99.99	0.00	Hz	●
FA-20	Torque current	0.0 to 999.9	0.0	A	●
FA-21	Output voltage	0.0 to 999.9	0.0	V	●
FA-22	Output torque	0 to 200	0	%	●
FA-23	Output power	0.00 to 99.99	0.00	kW	●
FA-24	Communication interference	0 to 65535	0	-	●
FA-25	Eliminate encoder interference	0 to 65535	0	-	●
FA-26	Input state 1	0 to 65535	0	-	●
FA-27	Input state 2	0 to 65535	0	-	●
FA-28	Input state 3	0 to 65535	0	-	●
FA-30	Input state 5	0 to 65535	0	-	●
FA-31	Output state 1	0 to 65535	0	-	●
FA-32	Output state 2	0 to 65535	0	-	●

Param.	Name	Range	Default	Unit	Property
FA-33	Car input state	0 to 65535	0	-	●
FA-34	Car output state	0 to 65535	0	-	●
FA-35	Hall call state	0 to 65535	0	-	●
FA-36	System state 1	0 to 65535	0	-	●
FA-37	System state 2	0 to 65535	0	-	●
FA-38	Maximum floor running time interval	0 to 200	0	s	●
FA-39	Position lock rollback distance	0 to 9999	0	-	●
FA-44	Temporary version of MCB software	0 to 655.35	0.00	-	●
FA-45	Manufacturer version of MCB software	0 to 655.35	0.00	-	●
FA-46	HCB communication state 1	0 to 65535 (floors 1 to 16)	0	-	●
FA-47	HCB communication state 2	0 to 65535 (floors 17 to 32)	0	-	●
FA-48	HCB communication state 3	0 to 65535 (floors 33 to 48)	0	-	●
FA-50	Communication state 1 of HCB connected to expansion board	0 to 65535 (floors 1 to 16)	0	-	●
FA-51	Communication state 2 of HCB connected to expansion board	0 to 65535 (floors 17 to 32)	0	-	●
FA-52	Communication state 3 of HCB connected to expansion board	0 to 65535 (floors 33 to 48)	0	-	●
FA-54	Input state 6	0 to 65535	0	-	●
FA-55	Input state 7	0 to 65535	0	-	●
FA-56	Input state 3	bit0: AGV indication output bit1: Left brake output bit2: Right brake output bit3: Quick shorting motor stator output bit4: Auxiliary brake contactor 3 output bit7: Auxiliary shorting motor stator contactor output bit8: Overspeed protection in shorting stator braking mode	0	-	●
FA-57	Input state 4	0 to 65535	0	-	●

Param.	Name	Range	Default	Unit	Property
FA-58	Version display selection	0: Machine-room-less monitoring board version 1: Machine room expansion board version 2: Car expansion board version 3: ARD version 4: AFE master version 5: AFE slave version 6: Villa elevator ARD version 7: SCB version 8: Communication-mode SBC version 9: Communication-mode SBC2 version 10: Door operator 1 version 11: Door operator 2 version 12: Power supply module version 13: Pit inspection board version 110: Front door COB1 version 111: Front door COB2 version 112: Front door CCB1 version 113: Front door CCB2 version 120: Rear door COB1 version 121: Rear door COB2 version and so on	0	-	☆
FA-59	Software main version	0 to 655.35	0	-	●
FA-60	Temporary software version	0 to 655.35	0	-	●
FA-61	Manufacturer software version	0 to 655.35	0	-	●
FA-62	X input terminal status of the expanded CTB	bit1: Alarm button input bit2: Door operator overtemperature 2 bit3: Light curtain 1 fault bit4: Light curtain 2 fault	0	-	●
FA-63	Inspection state monitoring	0 to 65535 bit0: CTB forced inspection signal bit1: Pit forced inspection signal bit2: Forced door lock bypass bit3: Shaft auto-tuning not performed bit4: Reserved bit13: Forced inspection for braking force detection bit14: Inspection running allowed during emergency evacuation	0	-	●
FA-64	Temporary car top board version	0 to 655.35	0	-	●
FA-65	Manufacturer car top board version	0 to 655.35	0	-	●
FA-66	Function specification version	0 to 655.35	0	-	●

Param.	Name	Range	Default	Unit	Property
Group Fb: Door Function Parameters					
Fb-00	Quantity of door operator(s)	1: Single entrance car 2: Through-type door	1	-	★
Fb-01	CTB software version	0.00 to 655.35	0	-	●
Fb-02	Door operator 1 service floor 1 (floors 1 to 16)	0 to 65535	65535	-	☆
Fb-03	Door operator 1 service floor 2 (floors 17 to 32)	0 to 65535	65535	-	☆
Fb-04	Door operator 2 service floor 1 (floors 1 to 16)	0 to 65535	65535	-	☆
Fb-05	Door operator 2 service floor 2 (floors 17 to 32)	0 to 65535	65535	-	☆
Fb-06	Door open protection time	5 to 99	10	s	☆
Fb-07	Arrival gong output delay	0.00 to 10.00	0.00	s	☆
Fb-08	Door close protection time	5 to 99	15	s	☆
Fb-09	Door open/close protection times	0 to 20	0	-	☆
Fb-10	Door state of standby elevator	0: Closing the door as normal at main floor 1: Waiting with door open at main floor 2: Waiting with door open at each floor	0	-	☆
Fb-11	Door open holding time for hall call	1 to 1000	5	s	☆
Fb-12	Door open holding time for car call	1 to 1000	3	s	☆
Fb-13	Door open holding time at main floor	1 to 1000	10	s	☆
Fb-14	Duration of door open holding delay	10 to 1000	30	s	☆
Fb-15	special door open holding time	10 to 1000	30	s	☆
Fb-16	Manual door open holding time	1 to 60	5	s	☆
Fb-17	Waiting time for forced door close	5 to 180	120	s	☆
Fb-18	Door operator 1 service floor 3 (floors 33 to 48)	0 to 65535	65535	-	☆
Fb-19	Door operator 2 service floor 3 (floors 33 to 48)	0 to 65535	65535	-	☆
Fb-20	Manually operated door lock waiting time	0 to 60	0	-	☆
Fb-21	Door open holding time after rescue completion	10 to 20	10	-	☆
Fb-23	Major version of the platform	0 to 655.35	0	-	●
Fb-24	UCMP software version	0 to 65535	1	-	●

Param.	Name	Range	Default	Unit	Property
Fb-27	Door open duration at fault occurrence	0 to 60000	60	s	☆
Fb-28	Door open/close protection time at fault occurrence	0 to 60000	60	s	☆
Fb-29	Rescue exit time after evacuation and door close limit	3 to 999	15	s	☆
Fb-30	Power-on duration for UPS evacuation	0 to 600	10	s	☆
Fb-31	Automatic door open time under special conditions	0 to 600	20	s	☆
Fb-32	Protection time for forced door close	0 to 600	20	s	☆
Fb-33	Warning time for door close	0 to 1000	0	s	☆
Fb-34	Door open delay trigger time	0 to 10	2	s	☆
Fb-35	VIP exit delay	0.00 to 600.00	30.00	s	☆
Fb-39	NO/NC selection of CTB input DI	0 to 65535	30	-	☆
Fb-40	CTB X15 signal selection	0 to 121	100	-	★
Fb-41	CTB X16 signal selection	0 to 121	0	-	★
Fb-43	High bits of front door open times	0 to 9999	0	-	☆
Fb-44	Low bits of front door open times	0 to 9999	0	-	☆
Fb-45	High bits of rear door open times	0 to 9999	0	-	☆
Fb-46	Low bits of rear door open times	0 to 9999	0	-	☆
Fb-47	High bits of accumulative running distance	0 to 65535	0	-	☆
Fb-48	Low bits of accumulative running distance	0 to 65535	0	-	☆
Fb-49	Accumulative running time: Seconds	0 to 3599	0	-	☆
Group FC: Protection Function Parameters					
FC-00	Program control selection	bit0: Detection of short circuit to ground at power-on bit1: Disabling overcurrent detection at inspection startup bit2: Decelerating to stop at valid light curtain bit9: Mode without door open/close limit signal	0	-	★

Param.	Name	Range	Default	Unit	Property
FC-01	Function selection	bit0: Overload protection bit1: Canceling output phase loss protection bit2: Overmodulation function selection bit4: Light curtain judgment upon door close limit bit5: Canceling SPI communication detection bit14: Canceling input phase loss protection	65	-	★
FC-02	Overload protection coefficient	0.50 to 10.00	1	-	★
FC-03	Overload pre-warning coefficient	50 to 100	80	%	★
FC-04	Through-type door control selection	0: Simultaneous control for door open/close 1: Simultaneous control for hall calls and independent 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	-	★
FC-11	11th fault	0 to 9999	0	-	●
FC-12	11th fault subcode	0 to 65535	0	-	●
FC-13	Month and day upon 11th fault	0 to 12.31	0	MM.DD	●
FC-14	Hour and minute upon 11th fault	0 to 23.59	0	HH.MM	●
FC-15	12th fault	0 to 9999	0	-	●
FC-16	12th fault subcode	0 to 65535	0	-	●
FC-17	Month and day upon 12th fault	0 to 12.31	0	MM.DD	●
FC-18	Hour and minute upon 12th fault	0 to 23.59	0	HH.MM	●
FC-19	13th fault	0 to 9999	0	-	●
FC-20	13th fault subcode	0 to 65535	0	-	●
FC-21	Month and day upon 13th fault	0 to 12.31	0	MM.DD	●
FC-22	Hour and minute upon 13th fault	0 to 23.59	0	HH.MM	●
FC-23	14th fault	0 to 9999	0	-	●
FC-24	14th fault subcode	0 to 65535	0	-	●
FC-25	Month and day upon 14th fault	0 to 12.31	0	MM.DD	●
FC-26	Hour and minute upon 14th fault	0 to 23.59	0	HH.MM	●
FC-27	15th fault	0 to 9999	0	-	●
FC-28	15th fault subcode	0 to 65535	0	-	●
FC-29	Month and day upon 15th fault	0 to 12.31	0	MM.DD	●

Param.	Name	Range	Default	Unit	Property
FC-30	Hour and minute upon 15th fault	0 to 23.59	0	HH.MM	●
FC-31	16th fault	0 to 9999	0	-	●
FC-32	16th fault subcode	0 to 65535	0	-	●
FC-33	Month and day upon 16th fault	0 to 12.31	0	MM.DD	●
FC-34	Hour and minute upon 16th fault	0 to 23.59	0	HH.MM	●
…					
FC-207	60th fault	0 to 9999	0	-	●
FC-208	60th fault subcode	0 to 65535	0	-	●
FC-209	Month and day upon the 60th fault	0 to 12.31	0	MM.DD	●
FC-210	Hour and minute upon the 60th fault	0 to 23.59	0	HH.MM	●
Group FD: Communication Parameters					
FD-00	Baud rate setting	0: 9600 1: 38400	1	bps	●
FD-02	Local address	0 to 127 (0: broadcast address)	1	-	★
FD-03	Response delay	0 to 20	0	ms	★
FD-07	HCB-JP1 input selection	NO (0)/NC (0): Reserved NO (1)/NC (33): Elevator lock NO (2)/NC (34): Fire emergency NO (3)/NC (35): Current floor forbidden NO (4)/NC (36): VIP signal NO (5)/NC (37): Security signal NO (6)/NC (38): Door close button NO (7)/NC (39): Fire emergency floor 2 NO (8)/NC (40): Delayed door close signal	1	-	★
FD-08	HCB-JP2 input		2	-	★
FD-09	HCB-JP1 output selection	0: Reserved 2: Down arrival indicator 1: Up arrival indicator 3: Fault 4: Non-door zone stop 5: Non-service state 6: Door close button indicator 7: Interface output 9: Door close delay signal output	1	-	★
FD-10	HCB-JP2 output		2	-	★

Param.	Name	Range	Default	Unit	Property
FD-11	Expansion board 1: X1 input	NO (0)/NC (0): Reserved NO (1)/NC (33): Fire emergency NO (2)/NC (34): Overload NO (3)/NC (35): Full load NO (4)/NC (36): Firefighter NO (5)/NC (37): Door 1 light curtain NO (6)/NC (38): Door 2 light curtain NO (7)/NC (39): Brake travel switch 1 feedback NO (8)/NC (40): Emergency evacuation at power failure NO (9)/NC (41): Elevator lock NO (10)/NC (42): Safety circuit NO (11)/NC (43): Shorting motor stator contactor feedback NO (12)/NC (44): Door lock circuit NO (13)/NC (45): Door 1 safety edge NO (14)/NC (46): Door 2 safety edge NO (15)/NC (47): Motor overtemperature NO (16)/NC (48): Earthquake NO (17)/NC (49): Rear door forbidden NO (18)/NC (50): Light load NO (19)/NC (51): Half load NO (20)/NC (52): Fire emergency floor switchover NO (21)/NC (53): Dummy floor NO (22)/NC (54): Door 1 open NO (23)/NC (55): Door 2 open NO (24)/NC (56): Brake travel switch 2 feedback NO (25)/NC (57): External fault NO (26)/NC (58): Terminal floor signal NO (27)/NC (59): Door 1/2 selection NO (28), NC (60): Single/double door selection	0	-	★
FD-12	Expansion board 1: X2 input		0	-	★
FD-13	Expansion board 1: X3 input		0	-	★
FD-14	Expansion board 1: X4 input		0	-	★
FD-15	Expansion board 1: X5 input		0	-	★
FD-16	Expansion board 1: X6 input		0	-	★
FD-17	Expansion board 1: X7 input		0	-	★
FD-18	Expansion board 1: X8 input		0	-	★
FD-19	Expansion board 1: X9 input		0	-	★
FD-20	Expansion board 1: X10 input		0	-	★
FD-21	Expansion board 2: X1 input		0	-	★
FD-22	Expansion board 2: X2 input		0	-	★
FD-23	Expansion board 2: X3 input		0	-	★
FD-24	Expansion board 2: X4 input		0	-	★
FD-25	Expansion board 2: X5 input		0	-	★
FD-26	Expansion board 2: X6 input		0	-	★
FD-27	Expansion board 2: X7 input		0	-	★
FD-28	Expansion board 2: X8 input		0	-	★
FD-29	Expansion board 2: X9 input		0	-	★
FD-30	Expansion board 2: X10 input		0	-	★

Param.	Name	Range	Default	Unit	Property
FD-31	Expansion board 1: Y1 output	0: Reserved 1: Door open by door operator 1 2: Door close by door operator 1 3: Door open by door operator 2 4: Door close by door operator 2 5: Brake and RUN contactors healthy (no E36 or E37) 6: Fault state (output for level 3/4/5 faults) 7: NICE3000^{new} operation state monitoring 8: Shorting motor stator contactor 9: Controller healthy 10: Emergency evacuation buzzer 11: Brake pick voltage 12: Up running 13: Lighting and fan 14: Medical sterilization 15: Non-door zone stop 16: Electromagnetic lock of the manually operated door 17: Non-service state 18: Emergency evacuation completed 19: Fire emergency output 20: Emergency state at power failure 21: Door lock active 22: Night output signal 23: Alarm filtered output	0	-	★
FD-32	Expansion board 1: Y2 output		0	-	★
FD-33	Expansion board 1: Y3 output		0	-	★
FD-34	Expansion board 1: Y4 output		0	-	★
FD-35	Expansion board 1: Y5 output		0	-	★
FD-36	Expansion board 1: Y6 output		0	-	★
FD-37	Expansion board 1: Y7 output		0	-	★
FD-38	Expansion board 1: Y8 output		0	-	★
FD-39	Expansion board 1: Y9 output		0	-	★
FD-40	Expansion board 1: Y10 output		0	-	★
FD-41	Expansion board 2: Y1 output		0	-	★
FD-42	Expansion board 2: Y2 output		0	-	★
FD-43	Expansion board 2: Y3 output		0	-	★
FD-44	Expansion board 2: Y4 output		0	-	★
FD-45	Expansion board 2: Y5 output		0	-	★
FD-46	Expansion board 2: Y6 output		0	-	★
FD-47	Expansion board 2: Y7 output		0	-	★
FD-48	Expansion board 2: Y8 output		0	-	★
FD-49	Expansion board 2: Y9 output		0	-	★
FD-50	Expansion board 2: Y10 output		0	-	★
Group FE: Display Setting Parameters					
FE-00	Collective selective mode	0: Full collective selective 1: Down collective selective 2: Up collective selective	0	-	★

Param.	Name	Range	Default	Unit	Property
FE-01	Floor 1 display	The two high digits indicate the display code in the tens position, and the two low digits indicate the display code in the ones position. The correlation between the code and the display is as follows: 00: "0" 01: "1" 02: "2" 03: "3" 04: "4" 05: "5" 06: "6" 07: "7" 08: "8" 09: "9" 10: "A" 11: "B" 12: "G" 13: "H" 14: "L" 15: "M" 16: "P" 17: "R" 18: "-" 19: No display 20: "12" 21: "13" 22: "23" 23: "C" 24: "D" 25: "E" 26: "F" 27: "I" 28: "J" 29: "K" 30: "N" 31: "O" 32: "Q" 33: "S" 34: "T" 35: "U" 36: "V" 37: "W" 38: "X" 39: "Y" 40: "Z" 41: "15" 42: "17" 43: "19"	1901	-	☆
FE-02	Floor 2 display		1902	-	☆
FE-03	Floor 3 display		1903	-	☆
FE-04	Floor 4 display		1904	-	☆
FE-05	Floor 5 display		1905	-	☆
FE-06	Floor 6 display		1906	-	☆
FE-07	Floor 7 display		1907	-	☆
FE-08	Floor 8 display		1908	-	☆
FE-09	Floor 9 display		1909	-	☆
FE-10	Floor 10 display		100	-	☆
FE-11	Floor 11 display		101	-	☆
FE-12	Floor 12 display		102	-	☆
FE-13	Floor 13 display		103	-	☆
FE-14	Floor 14 display		104	-	☆
FE-15	Floor 15 display		105	-	☆
Floor 16 to 30 display			...		
FE-31	Floor 31 display		301	-	☆
FE-35	Floor 32 display		302	-	☆
FE-36	Floor 33 display		303	-	☆
FE-37	Floor 34 display		304	-	☆
FE-38	Floor 35 display		305	-	☆
FE-39	Floor 36 display		306	-	☆
FE-40	Floor 37 display		307	-	☆
FE-41	Floor 38 display		308	-	☆
FE-42	Floor 39 display		309	-	☆
FE-43	Floor 40 display		400	-	☆
FE-44	Floor 41 display		401	-	☆
FE-45	Floor 42 display		402	-	☆
FE-46	Floor 43 display		403	-	☆
FE-47	Floor 44 display		404	-	☆
FE-48	Floor 45 display		405	-	☆
FE-49	Floor 46 display		406	-	☆
FE-50	Floor 47 display		407	-	☆
FE-51	Floor 48 display		408	-	☆

Param.	Name	Range	Default	Unit	Property
FE-52	Most significant bit selection 1	0 to 9699	0	-	☆
FE-53	Most significant bit selection 2		0	-	☆
FE-54	Most significant bit selection 3		0	-	☆
FE-55	Most significant bit selection 4		0	-	☆
FE-56	Most significant bit selection 5		0	-	☆
FE-32	Elevator function selection 1	bit0: Time-based floor service selection for front and rear door bit2: Re-leveling function bit3: Advance door opening function bit4: Stuck hall call cancellation bit5: Night security floor function bit6: Peak service for down collective selective bit7: Peak service for parallel/group control bit8: Time-based floor service bit9: VIP function bit11: Car call cancellation bit12: Hall call cancellation bit13: Shorting stator braking mode switched over to controller drive evacuation when timeout occurs bit15: Door lock short circuit detection active	34816	-	☆
FE-33	Elevator function selection 2	bit1: Door open holding upon door open limit bit2: Door close command not output upon door close limit bit4: Auto reset for stuck contacts bit5: Slow-down switch stuck detection bit7: Forced door close bit8: Self-locking contactor NC output bit9: Immediate elevator stop upon re-leveling bit13: High-speed protection function bit14: Enable hall call door open delay bit15: Independent control of through-type door	36	-	☆
Group FF: Factory parameters					
Group FJ: Factory parameters					
Group FP: User Parameters					
FP-00	User password	0 to 65535	0	-	☆

Param.	Name	Range	Default	Unit	Property
FP-01	Parameter update	0: Disabled 1: Restore factory setting 2: Clear recorded information 3: Clear shaft data	0	-	★
FP-02	User parameter check	0: Disabled 1: Enabled	0	-	★
FP-03	Level 2 password	0 to 65535	0	-	☆
FP-04	Level 3 password	0 to 65535	0	-	☆
FP-05	Contract No. 2	0 to 65535	0	-	★
FP-06	Contract No. 1	0 to 65535	5555	-	★
Group Fr: Leveling Adjustment Parameters					
Fr-00	Leveling adjustment mode	0: Disabled 1: Car leveling adjustment enabled 2: Load cell auto-tuning	0	-	★
FR-01	Leveling adjustment record 1	0 to 60060	30030	mm	★
...	...	0 to 60060	30030	mm	. . .
Fr-24	Leveling adjustment record 24	0 to 60060	30030	mm	★
Group E0 to E9: Fault record parameters					
E0-00	Latest fault	0 to 9999	0	-	●
E0-01	Latest fault subcode	0 to 65535	0	-	●
E0-02	Month and day upon latest fault	0 to 12.31	0	MM.DD	●
E0-03	Hour and minute upon latest fault	0 to 23.59	0	HH.MM	●
E0-04	Logic information upon latest fault	0 to 65535	0	-	●
E0-05	Curve information upon latest fault	0 to 65535	0	-	●
E0-06	Speed reference upon latest fault	0.000 to 4.000	0	m/s	●
E0-07	Feedback speed upon latest fault	0.000 to 4.000	0	m/s	●
E0-08	Bus voltage upon latest fault	0 to 999.9	0	V	●
E0-09	Current position upon latest fault	0.0 to 300.0	0	m	●
E0-10	Output current upon latest fault	0.0 to 999.9	0	A	●
E0-11	Output frequency upon latest fault	0.00 to 99.99	0	Hz	●
E0-12	Torque current upon latest fault	0.0 to 999.9	0	A	●
E0-13	Output voltage upon latest fault	0 to 999.9	0	V	●

Param.	Name	Range	Default	Unit	Property
E0-14	Output torque upon latest fault	0 to 200.0	0	%	●
E0-15	Output power upon latest fault	0.00 to 99.99	0	kW	●
E0-16	Communication interference upon latest fault Refer to FA-24 description	0 to 65535	0	-	●
E0-17	Encoder interference upon latest fault	0 to 65535	0	-	●
E0-18	Input state 1 upon latest fault See FA-26 description	0 to 65535	0	-	●
E0-19	Input state 2 upon latest fault Refer to FA-27 description	0 to 65535	0	-	●
E0-20	Input state 3 upon latest fault Refer to FA-28 description	0 to 65535	0	-	●
E0-21	Input state 4 upon latest fault Refer to FA-29 description	0 to 65535	0	-	●
E0-22	Input state 5 upon latest fault Refer to FA-30 description	0 to 65535	0	-	●
E0-23	Output state 1 upon latest fault Refer to FA-31 description	0 to 65535	0	-	●
E0-24	Output state 2 upon latest fault Refer to FA-32 description	0 to 65535	0	-	●
E0-25	Car input state upon latest fault Refer to FA-33 description	0 to 65535	0	-	●
E0-26	Car output state upon latest fault Refer to FA-34 description	0 to 65535	0	-	
E0-27	Hall call state upon latest fault Refer to FA-35 description	0 to 65535	0	-	
E0-28	System state 1 upon latest fault Refer to FA-36 description	0 to 65535	0	-	
E0-29	System state 2 upon latest fault Refer to FA-37 description	0 to 65535	0	-	

Param.	Name	Range	Default	Unit	Property
		...			
E9-00	10th fault	0 to 9999	0	-	●
E9-01	10th fault subcode	0 to 65535	0	-	●
E9-02	Month and day upon 10th fault	0 to 1231	0	MM.DD	●
E9-03	Hour and minute upon 10th fault	0 to 23.59	0	HH.MM	●
E9-04	Logic information upon 10th fault	0 to 65535	0	-	●
E9-05	Curve information upon 10th fault	0 to 65535	0	-	●
E9-06	Speed reference upon 10th fault	0.000 to 4.000	0	m/s	●
E9-07	Feedback speed upon 10th fault	0.000 to 4.000	0	m/s	●
E9-08	Bus voltage upon 10th fault	0 to 999.9	0	V	●
E9-09	Current position upon 10th fault	0.0 to 300.0	0	m	●
E9-10	Output current upon 10th fault	0.0 to 999.9	0	A	●
E9-11	Output frequency upon 10th fault	0.00 to 99.99	0	Hz	●
E9-12	Torque current upon 10th fault	0.0 to 999.9	0	A	●
E9-13	Output voltage upon 10th fault	0 to 999.9	0	V	●
E9-14	Output torque upon 10th fault	0 to 200.0	0	%	●
E9-15	Output power upon 10th fault	0.00 to 99.99	0	kW	●
E9-16	Communication interference upon 10th fault	0 to 65535	0	-	●
E9-17	Encoder interference upon 10th fault	0 to 65535	0	-	●
E9-18	Input state 1 upon 10th fault	0 to 65535	0	-	●
E9-19	Input state 2 upon 10th fault	0 to 65535	0	-	●
E9-20	Input state 3 upon 10th fault	0 to 65535	0	-	●
E9-21	Input state 4 upon 10th fault	0 to 65535	0	-	●
E9-22	Input state 5 upon 10th fault	0 to 65535	0	-	●

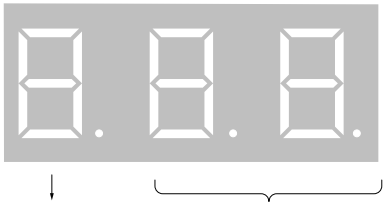
Param.	Name	Range	Default	Unit	Property
E9-23	Output state 1 upon 10th fault	0 to 65535	0	-	●
E9-24	Output state 2 upon 10th fault	0 to 65535	0	-	●
E9-25	Car input state upon 10th fault	0 to 65535	0	-	●
E9-26	Car output state upon 10th fault	0 to 65535	0	-	●
E9-27	Hall call state upon 10th fault	0 to 65535	0	-	●
E9-28	System state 1 upon 10th fault	0 to 65535	0	-	●
E9-29	System state 2 upon 10th fault	0 to 65535	0	-	●

3 Parameter Descriptions

3.1 Keypad Parameter Description

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

- F-0: Display of floor and running direction
  - By default, the F-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 F-0 menu is displayed.



- F-1: Command input of the running floor
  After you enter the F-1 menu by pressing the PRG, UP or SET key, the LEDs display the bottom floor of the elevator (F6-01). Use the UP key to set your destination floor in the range from Bottom floor to Top floor and press the SET key to save the setting. Then, the elevator runs to the destination floor, and the display automatically switches to the F-0 menu.
- F-2: Fault reset and fault time display
  After you enter the F-2 menu by pressing the PRG, UP or SET key, the LEDs display "0". You can press the UP key to change the parameter value within the range from 0 to 2.
  - 1: If you select this value and press the SET key, the system fault is cleared. Then, the display automatically switches to the F-0 menu.
  - 2: If you select this value and press the SET key, the LEDs display the codes and occurrence time of 10 faults. You can press the PRG key to exit.
- F-3: Time display
  After you enter the F-3 menu by pressing the PRG, UP or SET key, the LEDs display the current system time circularly.

- F-4: Contract number display
  After you enter the F-4 menu, the LEDs display the user's contract number.
- F-5: Running times display
  After you enter the F-5 menu, the LEDs display the elevator running times.
- F-6: Door open/close control
  After you enter the F-6 menu, the LEDs display "1-1", and UP and SET control the door open and close respectively. You can press the PRG key to exit.
- F-7: Floor auto-tuning command input
  After you enter the F-7 menu, the LEDs display 0. You can choose from 0 to 2 using UP. 1 and 2 indicate the floor auto-tuning command (1: Clear no leveling adjustment parameters in group FR; 2: Clear leveling adjustment parameters in group FR). After you press SET, shaft auto-tuning is implemented if the conditions are met. Meanwhile, the display switches over to the F-0 menu. After shaft auto-tuning is completed, F-7 is back to 0 automatically. If shaft auto-tuning conditions are not met, fault code E35 is displayed.
- F-8: Test function
  After you enter the F-8 menu by pressing the PRG, UP or SET key, the LEDs display "0". The setting values of F-8 are as follows:

7-segment LED display	Function
1	Maintenance
2	Door open forbidden
3	Overload forbidden
4	Limit switches disabled
6	Slip test
7	Manual UCMP test
8	Manual braking force test
11	Balancing Factor Auto-tuning
20	Dynamic braking force test (MRL)
24	Ascending Car Overspeed Protection (ACOP) Test
25	Time limiter test
26	Shorting Motor Stator Braking Test

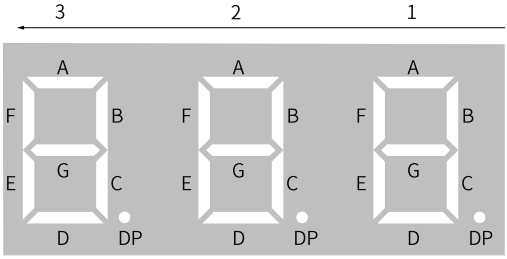
  After the setting from 0 to 30 is completed, press the SET key. The LEDs flash "E88", indicating the elevator is under test. When you press the PRG key to exit, F-8 restores to 0 automatically.

- F-9: Reserved
- F-A: Auto-tuning
  After you enter the F-A menu by pressing the PRG, UP or SET key, the LEDs display "0". The setting range of F-A is 0 to 2, described as follows:

7-segment LED display	Function
1	With-load auto-tuning
2	No-load Auto-tuning

After the setting is completed, press the SET button. Then the LEDs display "TUNE", and the elevator enters the auto-tuning state. After confirming that the elevator meets the safe running conditions, press the SET button again to start auto-tuning. After auto-tuning is completed, the LEDs display the present angle for 2s, and then switch over to the F-0 menu. You can press the PRG button to exit the auto-tuning state.

- F-B: CTB state display
  After you enter the F-B menu, the LEDs display the input/output state of the CTB. The following figure shows the meaning of each segment of the LEDs.



LED segments ON: valid signal

LED segments OFF: invalid signal

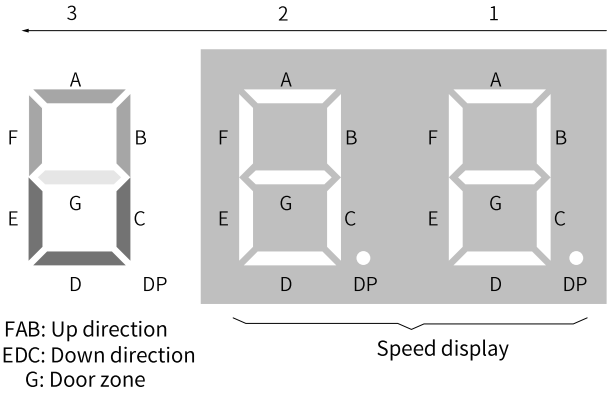
Table 3–1 CTB state display

Segment	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	-	Door close 2 output
F	Door close limit 2	-	Forced door close 2 output
G	Full-load input	-	Up arrival gong output
DP	Overload input	-	Down arrival gong output

- F-C: Elevator direction change (do not change the value arbitrarily, as its function is the same as F2-10)
  0: Direction unchanged

  1: Direction reversed

- F-d: Emergency and test operation
  After you enter the F-d menu, 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 (for PMSM) state.

Note

When the elevator speed is below 1.000 m/s, ".xx m/s" is displayed. When the speed is greater than or equal to 1 m/s, "x.x m/s" is displayed. Therefore, the position of the decimal point is different.

3.2 Operating Panel Parameter Description

3.2.1 Function Parameter Groups

Press PRG and then press △/▽ to display the function parameter groups. The following table shows the details:

Param.	Name	Param.	Name
F0	Basic parameters	FA	Keypad setting parameters
F1	Motor parameters	FB	Door function parameters
F2	Vector control parameters	FC	Protection function parameters
F3	Running control parameters	FD	Communication Parameters
F4	Floor parameters	FE	Display setting parameters
F5	Terminal function parameters	FF	Factory parameters (reserved)

Param.	Name	Param.	Name
F6	Basic elevator parameters	FP	User Parameters
F7	Intelligent commissioning parameters	Fr	Leveling adjustment parameters
F8	Enhanced function parameters	E0 to E9	Fault record parameters
F9	Time parameters	FJ	Factory parameters (reserved)

3.2.2 Group F0: Basic Parameters

Param.	Name	Range	Default	Unit	Property
F0-00	Control mode	0: Sensorless vector control (SVC) 1: Feedback vector control (FVC) 2: V/f control	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; Synchronous motor running under special operating conditions (used only by professional engineers)	No
1	Voltage/ Frequency (V/F) control	It is applicable to normal running under distance control	Yes
2	V/ f control	It has limited sensing capabilities (Almost fixed voltage/frequency ratio, simple control, and poor low-frequency torque performance)	No

Param.	Name	Range	Default	Unit	Property
F0-01	Command source selection	0: Operating panel control 1: Distance control	1	-	★

F0-01 is used to set the source of running commands and running speed references, as described in the following table.

Value	Operation mode	Working mode		Application	Note
		X input	Y output		
0	Operating panel control	X input signals not detected	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. • The running speed is set by F0-02 (Running speed under operating panel control).
1	Distance control	X input signals detected	Output	Used during normal elevator running	• During inspection, the elevator runs at the speed set in F3-11. • During normal running, the control system automatically computes the speed (within the rated elevator speed) and running curve for the elevator based on the distance between the current floor and the destination floor, and it implements direct travel ride.

Param.	Name	Range	Default	Unit	Property
F0-02	Running speed under operating panel control	0.050 to F0-04	0.050	m/s	☆
F0-03	Running speed	0.250 to F0-04	1.600	m/s	★
F0-04	(Rated speed)	0.250 to 4.000	1.600	m/s	★

F0-02 is used to set the running speed in the operation panel control mode.

F0-03 is used to set the actual maximum running speed of the elevator. The value is not greater than the rated elevator speed (F0-04).

F0-04 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.

Example:

If the elevator with a rated speed of 1 m/s runs at the maximum speed of 0.95 m/s, F0-04 shall be set at 1.000 m/s and F0-03 at 0.950 m/s.

Param.	Name	Range	Default	Unit	Property
F0-05	Rated load	300 to 9999	1000	kg	★

The rated elevator load is used in the anti-nuisance function.

Param.	Name	Range	Default	Unit	Property
F0-06	Maximum frequency	F1-04 to 99.00	50.00	Hz	★

It is used to set the maximum output frequency of the system. This value must be larger than the rated motor frequency.

Param.	Name	Range	Default	Unit	Property
F0-07	Carrier frequency	0.5 to 16.0	6.0	kHz	★

It is used to set the carrier frequency of the controller.

The carrier frequency is closely related to the motor noise during running. When it is generally set above 6 kHz, silent operation 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, high-order harmonic components of output current, motor power loss and temperature rise increase.

- When the carrier frequency increases: ● Motor power loss and temperature rise declines. ● Power loss, system temperature rise and interference increase.

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

Performance	Severity
Carrier frequency	Small/high
Motor noise	Large/poor
Output current waveform	Bad/good
motor temperature rise	Large/poor
Controller temperature rise	Small/high
Leakage current	Small/high
external radiation interference	Small/high

3.2.3 Group F1: Motor Parameters

Param.	Name	Range	Default	Unit	Property
F1-00	Encoder type	0: Sin/Cos encoder 1: UVW encoder 2: ABZ encoder 3: Endat absolute encoder 4: Weton communication encoder	0	-	★

Set F1-00 to a proper value according to the type of encoder used together with the motor.

- When F1-25 is set to 1 (Synchronous motor), set this parameter correctly before auto-tuning; otherwise, the motor cannot run properly.
- When F1-25 is set to 0 (Asynchronous motor), this parameter is automatically changed to 2 (ABZ encoder). You need not modify it manually.

Param.	Name	Range	Default	Unit	Property
F1-01	Rated power	0.7 to 75.0	Model dependent	kW	★
F1-02	Rated voltage	0 to 600	Model dependent	V	★
F1-03	Rated current	0.00 to 655.00	Model dependent	A	★

Param.	Name	Range	Default	Unit	Property
F1-04	Rated frequency	0.00 to F0-06	Model dependent	Hz	★
F1-05	Rated speed	0 to 3000	Model dependent	rpm	★

Set these parameters according to the motor type and motor nameplate.

Param.	Name	Range	Default	Unit	Property
F1-06	Encoder initial angle (synchronous motor)	0.0 to 359.9	0	°	★
F1-07	encoder angle at power-off (synchronous motor)	0.0 to 359.9	0	°	★
F1-08	Synchronous motor wiring mode	0 to 15	0	-	★

These parameters are obtained by means of motor auto-tuning.

F1-06 specifies the encoder angle at zero point. After multiple times of auto-tuning, compare the obtained values, and the value deviation of F1-06 shall be within ±5°.

F1-07 specifies the angle of the magnetic pole when the motor is powered off. The value is recorded at power-off and is used for comparison at next power-on.

F1-08 specifies the motor wiring mode, that is, whether the output phase sequence of the driver 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.

F1-06 and F1-08 can be modified only when F0-01 is set to 0.

Param.	Name	Range	Default	Unit	Property
F1-09	Current filter time (synchronous motor)	0.0 to 359.9	0	-	★
F1-10	Encoder signal check	0 to 65535	0	-	★

F1-10 is used to set encoder signal check. This parameter is set by the manufacturer, and you need not modify it generally.

Param.	Name	Range	Default	Unit	Property
F1-11	Auto-tuning mode	0: No operation 1: With-load auto-tuning 2: No-load auto-tuning 3: Shaft auto-tuning 1, with parameters in group Fr not cleared 4: Shaft auto-tuning 2, with parameters in group Fr cleared 5: Synchronous motor static auto-tuning	0	-	★

It is used to select the auto-tuning mode. The values are as follows:

- 0: No operation;
- 1: With-load auto-tuning: static auto-tuning for asynchronous motor and rotary auto-tuning for synchronous motor;
- 2: No-load auto-tuning;
- 3: Shaft auto-tuning 1, with parameters in group Fr not cleared;
- 4: Shaft auto-tuning 2, with parameters in group Fr cleared.
- 5: Synchronous motor static auto-tuning.

Param.	Name	Range	Default	Unit	Property
F1-12	Encoder PPR	100 to 10000	2048	PPR	★

F1-12 is used to set the pulses per revolution of the encoder (according to the encoder nameplate).

Param.	Name	Range	Default	Unit	Property
F1-13	Encoder disconnection detection time	0 to 10.0	2.1	s	★

F1-13 is used to set the time that a wire-break fault lasts before being detected.

After the elevator starts running at non-zero speed, the system reports the encoder fault and the elevator stops running if there is no encoder signal input within the time set in F1-13. When the value is smaller than 0.5s, this function is disabled.

Param.	Name	Range	Default	Unit	Property
F1-14	Stator resistance (asynchronous motor)	0.000 to 30.000	0.000	Ω	★
F1-15	Rotor resistance (asynchronous motor)	0.000 to 30.000	0.000	Ω	★
F1-16	Leakage inductance (asynchronous motor)	0.00 to 300.00	0.00	mH	★
F1-17	Mutual inductance (asynchronous motor)	0.0 to 3000.0	0.0	mH	★
F1-18	No-load current (asynchronous motor)	0.00 to 300.00	0.00	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 F1-01 (Rated motor power) of the asynchronous motor is modified, these parameters automatically resume to the default values for the standard motor.

Param.	Name	Range	Default	Unit	Property
F1-19	Q-axis inductance (torque)	0.00 to 650.00	3.00	mH	★
F1-20	D-axis inductance (excitation)	0.00 to 650.00	3.00	mH	★
F1-21	Back EMF coefficient	0 to 65535	0	-	★

F1-19 to F1-21 are used to display the D-axis and Q-axis inductances and the back EMF coefficient of the synchronous motor obtained by means of motor auto-tuning.

Param.	Name	Range	Default	Unit	Property
F1-22	Angle-free auto-tuning function (synchronous motor)	bit1 = 1, bit2 = 0: Semi-automatic angle-free auto-tuning bit1 = 1, bit2 = 1: Automatic angle-free auto-tuning	0	-	★

Settings of bit1 and bit2 are used to select the angle-free auto-tuning mode of the synchronous motor.

- bit1 = 1, bit2 = 0: Semi-automatic angle-free auto-tuning
  After the controller power fails and then is restored, the system automatically performs the encoder angle auto-tuning only during trial inspection running. After auto-tuning is successful, the system does not perform auto-tuning again before the next power-off.

Note

Note: During running at inspection speed, the fault Err19 is reported if the system power is back on for normal running after power-off without finishing the process of auto-tuning.

- bit1 = 1, bit2 = 1: Automatic angle-free auto-tuning
  After power-off and power-on again, the system automatically performs encoder angle auto-tuning during the elevator running at inspection/normal speed. After auto-tuning is successful, the system does not perform auto-tuning again before the next power-off.

Param.	Name	Range	Default	Unit	Property
F1-25	Motor type	0: Asynchronous motor 1: Synchronous motor	1	-	★

This parameter is used to select the motor type. The values are as follows:

- 0: Asynchronous motor
- 1: Synchronous motor

3.2.4 Group F2: Vector Control Parameters

Param.	Name	Range	Default	Unit	Property
F2-00	Speed loop proportional gain Kp1	0 to 100	40	-	★
F2-01	Speed loop integral time Ti1	0.01 to 10.00	0.60	s	★
F2-02	Switchover frequency 1	0.00 to F2-05	2.00	Hz	★
F2-03	Speed loop proportional gain Kp2	0 to 100	35	-	★

Param.	Name	Range	Default	Unit	Property
F2-04	Speed loop integral time Ti2	0.01 to 10.00	0.80	s	★
F2-05	Switchover frequency 2	F2-02 to F0-06	5.00	Hz	★

- F2-00 and F2-01 are PI regulation parameters when the running frequency is smaller than the value of F2-02.
- F2-03 and F2-04 are PI regulation parameters when the running frequency is larger than the value of F2-05.

If the running frequency is between switchover frequency 1 (F2-02) and switchover frequency 2 (F2-05), the speed loop PI parameters are the weighted average value of the two groups of PI parameters (F2-00 and F2-01, F2-03 and F2-04), The following figure shows details.

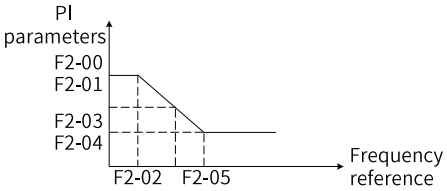


Figure 3-1 Relationship between running frequencies and PI parameters

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.

The recommended adjustment method is as follows:

If the default setting cannot meet the requirements, do some fine-tuning: 1. Decrease the proportional gain to make sure that the system does not oscillate; 2. Reduce the integral time to make sure that the system has a quick response while maintaining a small overshoot.

If both F2-02 (switchover frequency 1) and F2-05 (switchover frequency 2) are 0, only F2-03 and F2-04 are valid.

Param.	Name	Range	Default	Unit	Property
F2-06	Current loop proportional gain Kp	10 to 500	60	-	★
F2-07	Current loop integral gain Ki	10 to 500	30	-	★

F2-06 and F2-07 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, you need not modify these parameters.

Param.	Name	Range	Default	Unit	Property
F2-08	Torque upper limit	0.0 to 200.0	200.0	%	★

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

Param.	Name	Range	Default	Unit	Property
F2-10	Elevator running direction	0: Running direction unchanged 1: Direction reversed	0	-	★

It is used to set the elevator running direction. The values are as follows:

0: Direction unchanged

1: Direction reversed

You can modify F2-10 to reverse the motor running direction without changing motor wiring. When you perform 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 F2-10.

Pay attention to the setting of this parameter when restoring the factory parameters.

Param.	Name	Range	Default	Unit	Property
F2-11	Position lock current coefficient	2.0 to 50.0	15.0	%	★
F2-12	Zero servo speed loop Kp	0.00 to 2.00	0.50	-	★
F2-13	Zero servo speed loop Ti	0.00 to 2.00	0.60	-	★

It is used for no-load-cell startup pre-torque self-adaption. The no-load-cell startup function is enabled when F8-01 is set 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.

Param.	Name	Range	Default	Unit	Property
F2-16	Torque acceleration time	1 to 500	1	ms	★
F2-17	Torque deceleration time	1 to 3000	350	ms	★

F2-16 and F2-17 are 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 of F2-16 to eliminate the sound.
- If some abnormal sound occurs when the current decreases to zero at stop, increase the value of F2-17 to eliminate the sound.

Param.	Name	Range	Default	Unit	Property
F2-18	Startup acceleration time	0.000 to 1.500	0.000	s	★

Param.	Name	Range	Default	Unit	Property
F2-33	Torque amplitude	50% to 150%	110	%	★

3.2.5 Group F3: Running Control Parameters

Param.	Name	Range	Default	Unit	Property
F3-00	Startup speed	0.000 to 0.050	0.000	m/s	★
F3-01	Startup speed holding time	0.000 to 5.000	0.000	s	★

F3-00 and F3-01 are used to set the startup speed and startup speed holding time of the system respectively. See *"Figure 3-2 " on page 88* .

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

Param.	Name	Range	Default	Unit	Property
F3-02	Acceleration rate	0.200 to 1.500	0.700	m/s^2	★
F3-03	Acceleration end jerk time 1	0.300 to 4.000	1.500s	s	★
F3-04	Acceleration end jerk time 2	0.300 to 4.000	1.500s	s	★

F3-02, F3-03, and F3-04 are used to set the running curve during acceleration of the elevator, *"Figure 3-2 " on page 88* and *"Figure 3-3 " on page 89* show the details.

- F3-02 is the acceleration of the elevator speed curve (uniform acceleration).
- F3-03 sets the time for the acceleration rate to change from 0 to the value set in F3-02 in the speed curve (increasing acceleration). The larger the value is, the smoother the speed curve is.
- F3-04 is the time for the acceleration to decrease from the value set in F3-02 to 0 in the speed curve (increasing deceleration). The larger the value is, the smoother the speed curve is.

Param.	Name	Range	Default	Unit	Property
F3-05	Deceleration rate	0.200 to 1.500	0.700	m/s^2	★
F3-06	Deceleration start jerk time 1	0.300 to 4.000	1.500s	s	★
F3-07	Deceleration start jerk time 2	0.300 to 4.000	1.500s	s	★

F3-05, F3-06, and F3-07 are used to set the running curve during deceleration of the elevator, *"Figure 3-2 " on page 88* and *"Figure 3-3 " on page 89* show the details.

- F3-05 is the acceleration of the elevator speed curve (constant deceleration).

- F3-06 is the time for the acceleration to decrease from the value set in F3-05 to 0 in the speed curve (increasing deceleration). The larger the value is, the smoother the speed curve is.
- F3-07 is the time for the acceleration to decrease from 0 to the value set in F3-05 in the speed curve (increasing deceleration). The larger the value is, the smoother the speed curve is.

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

F3-02 (F3-05) is the acceleration (deceleration) rate of the S-curve in the linear acceleration process.

F3-03 (F3-07) is the time for the acceleration (deceleration) rate to change from 0 to the value set in F3-02 (F3-05) in the start jerk segment. The larger the value is, the smoother the jerk is.

F3-04 (F3-06) is the time for the acceleration (deceleration) rate to decrease from the value set in F3-02 (F3-05) to zero in the end jerk segment. The larger the value is, the smoother the jerk is.

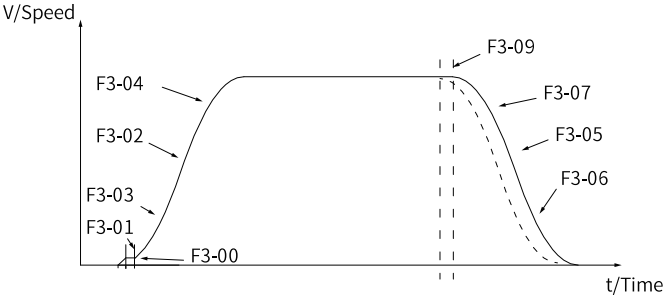


Figure 3-2 Running speed curve

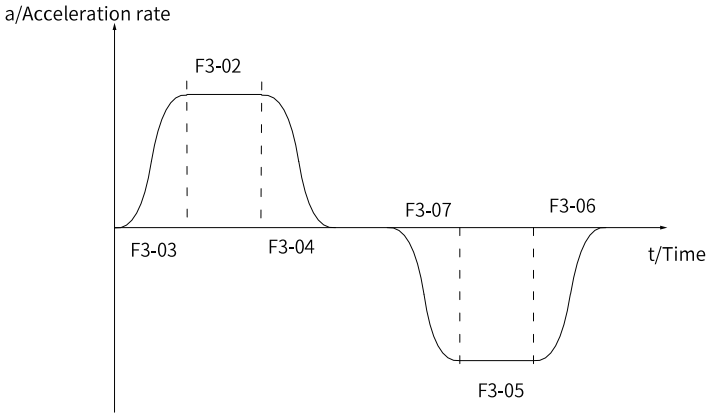


Figure 3-3 Acceleration/Deceleration curve

Param.	Name	Range	Default	Unit	Property
F3-08	Special deceleration rate	0.500 to 1.500	0.900	m/s^2	★

F3-08 is used to set the deceleration rate in elevator level 4 fault, inspection, shaft auto-tuning, re-leveling, and terminal floor verification.

This parameter is not used during normal running. It is used only when the elevator position is abnormal or the slow-down signal is abnormal, preventing the elevator from overshooting the top or bottom floor.

Param.	Name	Range	Default	Unit	Property
F3-09	Pre-deceleration distance	0 to 90.0	0.0	mm	★

F3-09 is used to set the pre-deceleration distance of the elevator in distance control, as shown in *"Figure 3-2 " on page 88* . This function is to eliminate the effect of encoder signal loss or leveling signal delay.

Param.	Name	Range	Default	Unit	Property
F3-10	Re-leveling speed	0.020 to 0.080	0.040	m/s	★

It is used to set the elevator speed during re-leveling.

This parameter is valid when the advance door opening module (MCTC-SCB) is added for the re-leveling function (set in FE-32).

Param.	Name	Range	Default	Unit	Property
F3-11	Inspection speed	0.100 to 0.630	0.250	m/s	★

F3-11 is used to set the elevator speed during inspection.

Param.	Name	Range	Default	Unit	Property
F3-12	Position of up slow-down switch 1	0.00 to 300.00	0.00	m	★
F3-13	Position of down slow-down switch 1	0.00 to 300.00	0.00	m	★
F3-14	Position of up slow-down switch 2	0.00 to 300.00	0.00	m	★
F3-15	Position of down slow-down switch 2	0.00 to 300.00	0.00	m	★
F3-16	Position of up slow-down switch 3	0.00 to 300.00	0.00	m	★
F3-17	Position of down slow-down switch 3	0.00 to 300.00	0.00	m	★

F3-12 to F3-17 specify the positions of all slow-down switches relative to the bottom leveling position, and the positions are automatically recorded during shaft auto-tuning.

The NICE3000^{new} supports a maximum of three pairs of slow-down switches. From two sides of the shaft to the middle, slow-down 1, slow-down 2, and slow-down 3 are installed in order; that is, slow-down 1 is installed near the terminal floor. There may be only one pair of slow-sown switches for the low-speed elevator, and two or three pairs of slow-down switches for the high-speed elevator.

The system automatically detects the speed when the elevator approaches a slow-down switch. If the detected speed or position is abnormal, the system enables the elevator to slow down at the special deceleration rate set in F3-08, preventing the elevator from overshooting the top or bottom floor.

Param.	Name	Range	Default	Unit	Property
F3-18	Zero-speed current output time	0.200 to 1.000	0.200	s	★
F3-19	Holding time of zero-speed torque current upon brake release	0.000 to 2.000	0.600	s	★
F3-20	Zero-speed control time at end	0.000 to 1.000	0.300	s	★

F3-18 to F3-20 are used to set the time related to the zero-speed holding current output and braking action delay.

- F3-18 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.
- F3-19 is the time that the system maintains the zero-speed torque current output from the moment when it sends a brake release command to prevent rollback.
- F3-20 is the zero-speed current output time after the running curve ends.

The following figure shows the running timing.

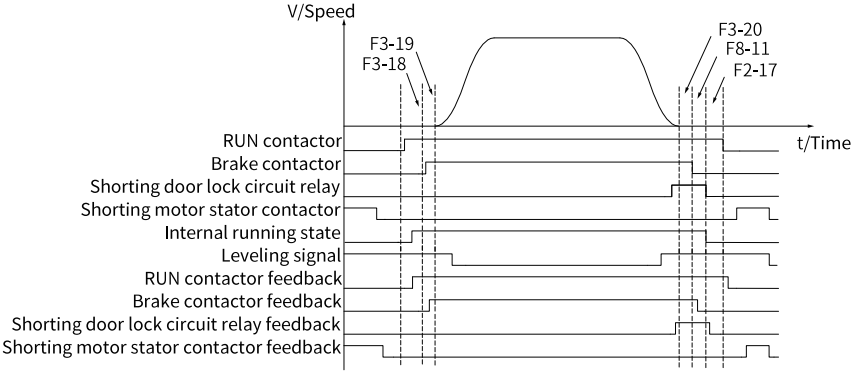


Figure 3-4 Operation timing diagram

Note

F8-11 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.

Param.	Name	Range	Default	Unit	Property
F3-21	Low-speed releveling speed	0.080 to F3-11	0.250	m/s	★

F3-21 is used to set the elevator speed of returning to the leveling position at normal non-leveling stop.

Param.	Name	Range	Default	Unit	Property
F3-22	Acceleration rate at emergency rescue	0.100 to 1.300	0.300	m/s^2	★

F3-22 is used to set the acceleration rate at emergency evacuation.

Param.	Name	Range	Default	Unit	Property
F3-23	Deceleration delay time upon hitting slow-down switch	0.00 to 10.00	0	s	★

F3-23 indicates that the speed is reduced to 0.1 m/s within this time in case of slow-down delay during inspection, re-leveling, terminal floor verification and shaft auto-tuning.

Param.	Name	Range	Default	Unit	Property
F3-24	Program function selection	0: Reserved 1: Slip test 2: Manual test of UCMP 3: Overspeed governor test and reset 6: Balancing factor auto-tuning 18: Maintenance entry 19: Maintenance exit 20: Dynamic braking force test 24: Manual ascending car overspeed protection (ACOP) test 25: Manual time limiter test 26: Manual shorting motor stator braking test 29: Linkage test of car safety gear 30: Linkage test of counterweight safety gear 31: Shorting motor stator pulse test	0	-	★

This parameter is used when the motor slip experiment is performed during elevator acceptance. If the slip experiment on site is not successful, set this parameter to 1 to enable the slip experiment function. After the experiment is completed, set F3-24 to 0 to disable the function.

Param.	Name	Range	Default	Unit	Property
F3-25	Elevator speed in the EEO state	0.100 to 0.300	0.250	m/s	★

F3-25 is used to set the elevator speed in emergency electrical operation state.

Param.	Name	Range	Default	Unit	Property
F3-26	(Shaft auto-tuning speed)	0.100 to 0.630	0.250	m/s	★

F3-26 is used to set the elevator speed during shaft auto-tuning.

Param.	Name	Range	Default	Unit	Property
F3-27	E33 overspeed margin	0.000 to 1.000	0.050	m/s	★

This margin represents the difference between the actual feedback speed and the predefined maximum running speed.

Param.	Name	Range	Default	Unit	Property
F3-28	Terminal floor verification speed	0.080 to F0-03	0.500	m/s	★

F3-28 is used to set the speed of the elevator during terminal floor verification.

3.2.6 Group F4: Floor Parameters

Param.	Name	Range	Default	Unit	Property
F4-00	Leveling adjustment	0 to 60	30	mm	★

F4-00 is used to adjust the leveling accuracy at stop.

If over-leveling occurs on all floors when the elevator stops, decrease this parameter properly. If under-leveling occurs on all floors when the elevator stops, increase this parameter properly. The leveling of all floors will change once this parameter is modified. Therefore, if the leveling of a single floor is inaccurate, it is recommended to adjust the position of the leveling plate or adjust the leveling accuracy following the descriptions in group Fr. The NICE3000^{new} has the advanced distance control algorithm and adopts many methods to ensure reliability of direct travel ride. Generally you need not modify this parameter.

Param.	Name	Range	Default	Unit	Property
F4-01	Current floor	F6-01 to F6-00	1	-	★

F4-01 indicates the current floor where the elevator car is located.

The system automatically changes the value of this parameter during running and corrects it at leveling position (door open limit) after the up slow-down and down slow-down switches act. At non-bottom floor and top-floor leveling, you can also manually modify this parameter, but the value must be consistent with the actual current floor.

Param.	Name	Range	Default	Unit	Property
F4-02	High bits of current elevator position	0 to 65535	0	Pls	●
F4-03	Low bits of current elevator position	0 to 65535	0	Pls	●

F4-02 and F4-03 indicate the absolute pulses of the current car position relative to the leveling of the bottom floor.

The position data of the NICE3000new 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 byte of the floor position, and the low 16 bits indicate the low byte of the floor position.

Param.	Name	Range	Default	Unit	Property
F4-04	Leveling plate length 1	0 to 65535	0	Pls	★
F4-05	Leveling plate length 2	0 to 65535	0	Pls	★

F4-04 indicates the pulses corresponding to the leveling plate length.

F4-05 indicates the distance from each end of the leveling plate to either the up or down leveling switch in terms of pulses.

These two parameters are automatically recorded during shaft auto-tuning.

Param.	Name	Range	Default	Unit	Property
F4-06	High bits of floor 1	0 to 65535	0	Pls	★
F4-07	Low bits of floor 1	0 to 65535	0	Pls	★
High byte of floor 2 to low byte of floor 96					
F4-198	High bits of floor 97	0 to 65535	0	Pls	★
F4-199	Low bits of floor 97	0 to 65535	0	Pls	★

These parameters indicate the pulses corresponding to the floor i (between the leveling plates of floor i and floor i + 1). Each floor is expressed by a 32-bit binary number, where the high 16 bits indicate the high byte of the floor, and the low 16 bits indicate the low byte of the floor. Normally, the floor i of each floor corresponds to almost the same number of pulses.

3.2.7 Group F5: Terminal Function Parameters

Param.	Name	Range	Default	Unit	Property
F5-00	Attendant/normal state switchover time	3 to 200	3	s	★

If there is a hall call from another floor in attendant state, the system automatically switches over to the automatic (normal) state after the time set in F5-00. After this running is completed, the system automatically restores to the attendant state (F6-43 bit2 must be enabled and set to 1). When F5-00 is smaller than 5, this function is disabled and the system is in the normal attendant state.

Param.	Name	Range	Default	Unit	Property
F5-01	X1 function selection	0 to 309	1	-	★
F5-02	X2 function selection		3	-	★
F5-03	X3 function selection		0	-	★
…			…		
F5-23	X23 function selection		00	-	★
F5-24	X24 function selection		00	-	★

F5-01 to F5-24 are used to set the signals input to DI terminals X1 to X24. Select corresponding input parameters according to different functions of input signals.

The NICE3000^{new} 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.

Note

The parameter values that can be set repeatedly include:

- 04/36: Safety circuit feedback NO/NC
- 05/37: Door lock circuit feedback NO/NC
- 06/38: RUN contactor feedback NO/NC
- 07/39: Brake feedback NO/NC
- 26/58: Brake travel switch 1 NO/NC

The NO setting of each function is as follows (NC value = NO value + +32).

00: Reserved

Even if there is signal input to the terminal, the system has no response. You can set unassigned terminals to invalid state to prevent malfunction.

01: Up leveling signal

02: Down leveling signal

03: Door zone signal

The NICE3000^{new} 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 -> 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 fault E22.

04: Safety circuit feedback

05: Door lock circuit 1 feedback

29: Safety circuit 2 feedback

31: Door lock circuit 2 feedback

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 feedback signal

07: Brake contactor feedback signal

26: Brake travel switch 1 NO input signal

78: Brake travel switch 2 NO input signal

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

09: Inspection/EEO up signal

10: Inspection/EEO down signal

84: EEO function

- When 08/40 (inspection signal) is allocated to input terminal X, the inspection switch signal is transmitted to the system in the DI form. When 08/40 (inspection signal) is not allocated to input terminal X, the inspection switch signal is transmitted to the system through CAN communication (MCTC-CTW-A is required on the car top).
- 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 F3-25 (Shaft auto-tuning speed) in the EEO state and at the speed set in F3-11 (Inspection speed) in the inspection state.
- The inspection signal overrides the EEO signal. When both signals are active, the elevator runs in the inspection state.

11: Fire emergency signal

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

13: Down limit signal

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 over travel top terminal or over travel bottom terminal.

14: Overload signal

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, you can set F7-06 to 1 to allow overload running (Note that this function has potential safety risks and use it with caution).

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 slow-down signals to NC inputs.

15: Full-load signal

When the elevator load is 80% to 110% of the rated load, the HCB displays the full-load state and the elevator does not respond to hall calls.

16: Up slow-down 1 signal

17: Down slow-down 1 signal

18: Up slow-down 2 signal

19: Down slow-down 2 signal

20: Up slow-down 3 signal

21: Down slow-down 3 signal

These parameters are used to set corresponding input terminals to slow-down switch signals. The slow-down signals are used to enable the elevator to stop at the slow-down speed when the car position is abnormal, which is an important method to guarantee elevator safety. The NICE3000^{new} system automatically records the positions of the switches in group F3 during shaft auto-tuning.

22: Shorting door lock circuit relay feedback

It is the door lock shorting feedback signal when the advance door opening (ADO) or re-leveling at door open function of elevators is enabled. This is to ensure safe elevator running.

23: Firefighter signal

It is the firefighter switch signal and is used to enable the firefighter operation. After the elevator returns to the fire emergency floor, the NICE3000^{new} system enters the firefighter operation state if the firefighter signal is active.

24: Door operator 1 light curtain

25: Door operator 2 light curtain

They are used to detect the light curtain signals of door 1 and door 2 (if the elevator has double-door configuration).

26: Brake travel switch 1

27: 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 signal

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 FD -07 and FD-08).

30: Shorting motor stator contactor feedback signal

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.

65: Door operator 1 safety edge feedback signal

66: Door operator 2 safety edge feedback signal

They are used to detect the safety edge signal state of door 1 and door 2 (if the elevator has double-door configuration).

67: Motor overheat input signal

It is used for the motor thermal protection switch signal input. If this signal remains active for more than 2s, the control system stops output and reports E39 to protect the motor. When this signal becomes inactive, E39 is reset automatically and the system restores the normal operation.

68: Earthquake signal

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 starts running again after the earthquake signal becomes inactive.

69: Rear door forbidden signal

If there are two doors, this signal is used to prohibit the use of the rear door.

70: Light-load signal

This signal is used for nuisance judgment when the anti-nuisance function is enabled. If F8-08 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.

71: Half-load signal

It is mainly used for judgment of the emergency running direction at power failure.

72: Fire emergency floor switchover signal

The NICE3000^{new} 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.

73: Dummy floor input

The dummy floor signal is required if the maximum running time between two adjacent floors of the elevator exceeds the minimum values set in F9-02 and FA-38. This is done to enable the elevator control system to identify such a floor as one with increased elevation (high floor).

74: Auxiliary brake contactor 1 feedback

This signal is used to set auxiliary brake contactor 1 feedback when two brake contactors are mandated under the new China National Standards.

75: Auxiliary brake contactor 2 feedback

This signal is used to set auxiliary brake contactor 2 feedback when two brake contactors are mandated under the new China National Standards.

76: Door 1 open input

77: Door 2 open input

79: External fault input

External fault input is used to notify the controller of stop when other modules in the control cabinet such as the external braking unit are faulty.

80: Terminal floor verification signal

The terminal floor signal is used with slow-down 1 to determine the terminal floor position when some terminal floors are short.

81: Door lock 1 shorting

Door lock 1 shorting detection is used to detect any door lock 1 short circuit faults.

82: Door lock 2 shorting

Door lock 2 shorting detection is used to detect any door lock 2 short circuit faults.

83: EEO (Emergency Electrical Operation)

86: Door lock bypass

It is the signal input in the event of the bypassed door lock. After the signal becomes active, the system enters the inspection state.

87: Fire emergency one-key input

After the fire emergency one-key input signal is active, the system first returns to the fire emergency floor and then enters the firefighter state.

88: Rope gripper feedback signal input

Parameter value "88" (rope gripper feedback signal input) is added to the MCB.

90: Manual shorting stator braking mode (Honor series control cabinet)

91: Inspection up limit (Honor series control cabinet)

92: Inspection down limit (Honor series control cabinet)

93: Relay Y8 feedback (Honor series control cabinet)

94: Electrical brake release signal (Honor series control cabinet)

95: Shaft auto-tuning input (Honor series control cabinet)

256: Triangle key input signal

257: Triangle key reset signal

259: Alarm filtered signal

261: Auxiliary brake contactor 3 feedback

262: Brake travel switch 3 feedback

268: Integrated shorting motor stator contactor pulse input

274: Auxiliary shorting motor stator contactor feedback

277: Fault reset

- In the normal or inspection state, the elevator reports E68 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 (UCMP fault), which overrides E68.
- Reset E68 by pressing the RES/STOP key on the LCD operator, setting F-2 to 1 through the MCB keypad, or making the rope gripper feedback signal remain active for 1s or above. If the roper gripper feedback signal is inactive after the fault reset, the elevator continues to report E68.

Param.	Name	Range	Default	Unit	Property
F5-25	Car top board input signal type	0 to 65535	1856	-	★

For example, you can set the CTB input signals of an elevator as follows.

bit	Name	Default	bit	Name	Default
bit0	Door 1 light curtain	0	bit8	Light-load signal (digital)	1
bit1	Door 2 light curtain	0	bit9	Up leveling signal	1
bit2	Door 1 open limit	0	bit10	Down leveling signal	1
bit3	Door 2 open limit	0	bit11	Door operator overtemperature detection	0
bit4	Door 1 close limit	0	bit12	Door 1 safety edge	0
bit5	Door 2 close limit	0	bit13	Door 2 safety edge	0
bit6	Full-load signal (digital)	1	bit14	Reserved	-
bit7	Overload signal (digital)	0	bit15	Reserved	-
0: NC input, 1: NO input					

Param.	Name	Range	Default	Unit	Property
F5-26	Y1 function selection	0 to 39	1	-	★
F5-27	Y2 function selection		2	-	★
F5-28	Y3 function selection		12	-	★
F5-29	Y4 function selection		4	-	★
F5-30	Y5 function selection		0	-	★
F5-31	Y6 function selection		0	-	★
F5-45	Y2A function selection		0	-	★
F5-46	Y7 function selection		0	-	★

These parameters are used to set the signals output by terminals Y1 to Y6 of the output relay.

00: Reserved

01: RUN contactor output

02: Main 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 feedback

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 machine 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 (E36 or E37 does not occur), the system sends a feedback signal for monitoring.

10: Fault state

The fault state is output when the system is in the level-3, level-4 or level-5 fault state.

11: Running state output

The controller has output when it is running.

12: Shorting PMSM stator contactor output

When the shorting motor stator contactor is applied in synchronous motor, the corresponding 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: System healthy

The terminal has output when the system operates properly.

15: Emergency buzzer control

The terminal has output when the system is in the emergency evacuation running state. The buzzer tweets to prompt.

16: Brake pick voltage

This signal is used for the brake that keeps the release state with voltage reduction. The terminal with this signal keeps the output for 4s to release the brake, and then the voltage is reduced to keep the brake release state.

17: Elevator running in up direction

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 manual door.

22: Non-service state indication

It is output when the elevator is in the non-service state and cannot respond to hall calls.

23: Emergency evacuation completed

The output is used to notify that ARD emergency evacuation is completed.

25: Rope gripper reset

Conditions of the rope gripper reset output (either of the following is acceptable):

1. The system does not report E65 (UCMP fault) and E41 (safety circuit fault) 5s (power-on time for the rope gripper) after the first-time power-on.
2. The system reports E68 rather than E65. In the inspection state, the safety circuit is disconnected (E41 is reported) and then reconnected.

Requirements for the rope gripper reset output:

1. Check that the rope gripper reset output signal and the feedback signal are active.
   a. Reset E68 if the rope gripper feedback signal remains active for 1s or above. When the rope gripper reset output signal becomes inactive, the elevator restores the normal running.

   b. If the rope gripper feedback signal is still inactive after 22s (the rope gripper action time), the system continues to report E68. When the rope gripper reset output signal becomes inactive, the elevator cannot be made to run.

2. The elevator cannot perform door open/close or running operations when the rope gripper reset output signal is active.
   Set F6-52 bit14 to 1 to enable this function (disabled by default).

26: Braking transistor short circuit output

It has output when the braking transistor is short-circuited.

27: Alarm filtered output

In the non-inspection state, the alarm is filtered when the system is operating or the door open limit is reached.

28: Overspeed governor test output

31: Shorting motor stator contactor output test completed

32: AGV status indicator output

33: Auxiliary brake 1 output

When separate control of the brake is required according to the new national standard, this function should be set to output control for the brake contactor 1.

34: Auxiliary brake 2 output

When separate control of the brake is required according to the new national standard, this function should be set to output control for the brake contactor 2.

39: Auxiliary synchronous motor self-locking output

Param.	Name	Range	Default	Unit	Property
F5-32	Communication state	Communication state monitoring of CANbus and Modbus	-	-	●

F5-32 is used to monitor the communication state of the car top CANbus and the hall call Modbus.

After users enter the F5-32 interface, the state of LEDs indicates current communication state of hall calls. For the convenience of description, the LEDs are numbered 5, 4, 3, 2, and 1 respectively from left to right. The definition of each segment of the LEDs is as follows.

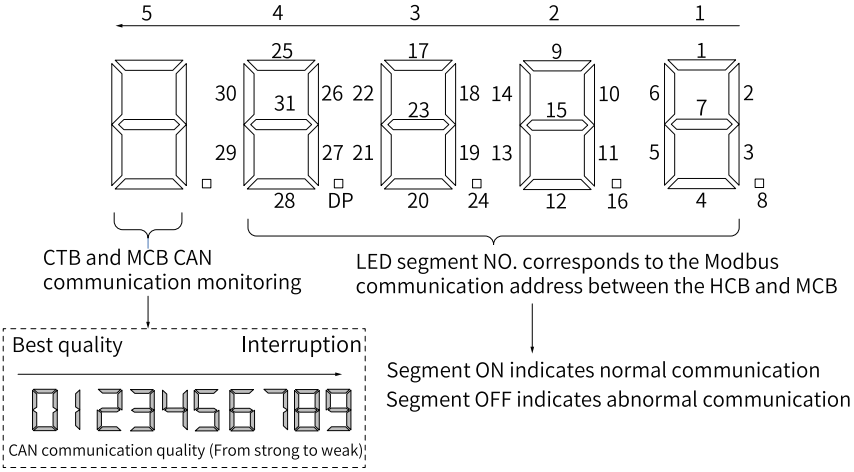


Figure 3-5 F5-32 Communication state monitoring

Example: Communication state displayed by the LEDs:

If the LEDs are as follows, it indicates that Modbus communication of addresses 1, 5, 6, 7, 12, 15, 16, 18, 19, 21, 22, 23, 25, 26, and 27 is abnormal, and that of other addresses is normal. CAN communication state displayed by the LEDs is 3, indicating slight interference.

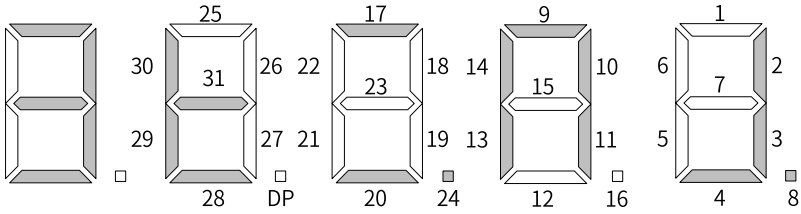


Figure 3-6 Example of LEDs display indicating the communication state

Param.	Name	Range	Default	Unit	Property
F5-33	Program control selection	0 to 65535	0	-	★

F5-33 is used to select the elevator functions.

The parameter is used to set the functions required by a user. Each function is controlled using one binary bit.

If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

The functions defined by the binary bits of F5-33 are described in the following table.

F5-33 Program control selection			
bit	Function definition	Description	Default
bit3	Elevator fire emergency requirements in Hong Kong SAR	If it is enabled, the fire emergency functions in F6-44 applying to Hong Kong SAR become enabled automatically.	0
bit4	Arrival gong disabled at night	The arrival gong is disabled from 22:00 to 7:00.	0
bit6	Door lock disconnection during switchover from the inspection state to the normal state	The door lock is disconnected once when the inspection state is switched to the normal running state.	0
bit7	Fault code not displayed on the keypad	The keypad does not flash the fault code.	0
bit8	Door open command canceled immediately when receiving the door open limit signal	The system immediately cancels the door open command after receiving the door open limit signal.	0

F5-33 Program control selection			
bit	Function definition	Description	Default
bit9	Torque output holding at stop in the case of abnormal brake feedback	When the brake travel switch feedback is abnormal, the elevator stops at the door zone position. The door keeps closed, and the system holds torque output as long as possible. After the system is overloaded, there is no torque output, and the elevator car slippage may occur in this case. Be cautious of using this function.	0
bit15	Elevator fire emergency in Hong Kong SAR	When enabled, the system masks elevator lock at door open and elevator lock message prompt	0

Param.	Name	Range	Default	Unit	Property
F5-34	Terminal State Display	Monitoring of I/O terminals on the MCB (main control board)	-	-	●
F5-35	Terminal State Display	Monitoring of I/O terminals on CTB (car top board), CCB (car call board), and HCB (hall call board)	-	-	●

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 F5-34 and F5-35 are respectively numbered as 5, 4, 3, 2, and 1 from left to right. The segments are defined as follows.

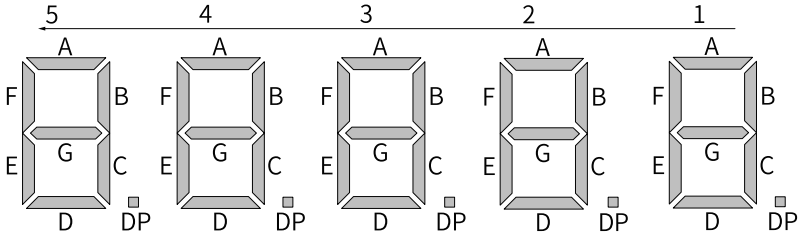


Figure 3-7 Terminal state monitoring

F5-34 Terminal state display					
Segment	1	2	3	4	5
A	-	Inspection signal	Up slow-down 1 signal	Door operator 1 light curtain	Reserved
B	Up leveling signal	Inspection up signal	Down slow-down 1 signal	Door operator 2 light curtain	RUN contactor output
C	Down leveling signal	Inspection down signal	Up slow-down 2 signal	Brake output feedback 2	Brake contactor output
D	Door zone signal	Fire emergency signal	Down slow-down 2 signal	UPS input	Shorting door lock circuit relay output
E	Safety circuit feedback 1	Up limit signal	Up slow-down 3 signal	Elevator lock input	Fire emergency floor arrival signal
F	Door lock circuit feedback 1	Down limit signal	Down slow-down 3 signal	Safety circuit feedback 2	-
G	RUN contactor output feedback	Overload signal	Shorting door lock circuit relay output feedback	Synchronous motor self-locking feedback	-
DP	Brake output feedback 1	Full-load signal	Firefighter operation signal	Door lock circuit feedback 2	-

F5-35 Terminal state display					
Segment	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

F5-35 Terminal state display					
Segment	1	2	3	4	5
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	-
DP	Overload signal	Firefighter operation signal	Down arrival gong	Energy-saving sign	-

Param.	Name	Range	Default	Unit	Property
F5-36	Load cell input selection	0 to 3	1	-	★

It is used to set the channel of setting the elevator load cell signal. When a load cell device is used, set this parameter correctly first. The values are as follows:

0: Main control board digital input

1: Car top board digital input

2: Car top board analog input

3: Main control board analog input

Param.	Name	Range	Default	Unit	Property
F5-37	X25 function selection	0: Reserved 4: Safety circuit signal 5: Door lock circuit signal 1 6: Door lock circuit signal 2 7: Door lock 1 shorting inspection 8: Door lock 2 shorting inspection	4	-	★
F5-38	X26 function selection		7	-	★
F5-39	X27 function selection		5	-	★
F5-40	X28 function selection		8	-	★

F5-37 to F5-40 are used to set signals input to heavy-current detection input terminals X25 to X28. The possible values to be set:

0: Reserved

4: Safety circuit signal

5: Door lock circuit signal 1

6: Door lock circuit signal 2

7: Door lock 1 shorting inspection

8: Door lock 2 shorting inspection

3.2.8 Group F6: Basic Elevator Parameters

Param.	Name	Range	Default	Unit	Property
F6-00	Top floor of the elevator	F6-01 to F6-48	9	-	★
F6-01	Bottom floor of the elevator	1 to F6-00	1	-	★

The parameters are to set the top floor and bottom floor of the elevator, determined by the number of leveling plates installed.

Param.	Name	Range	Default	Unit	Property
F6-02	Parking floor	F6-01 to F6-00	1	-	★

When the idle time of the elevator exceeds the value set in F9-00, the elevator returns to the parking floor set in F6-02 automatically.

Param.	Name	Range	Default	Unit	Property
F6-03	Fire emergency floor	F6-01 to F6-00	1	-	★

When the elevator enters the state of returning to fire emergency floor, the elevator will return to the set floor.

Param.	Name	Range	Default	Unit	Property
F6-04	Elevator lock floor	F6-01 to F6-00	1	-	★

After entering the elevator lock state, the elevator returns to the floor set in F6-04.

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.

Param.	Name	Range	Default	Unit	Property
F6-05	Service floor 1	0 to 65535 (floors 1 to 16)	65535	-	★
F6-06	Service floor 2	0 to 65535 (floors 17 to 32)	65535	-	★
F6-35	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.

F6-05 corresponds to floors 1 to 16, F6-06 floors 17 to 32 and F6-35 floors 33 to 40.

The following part takes F6-05 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.

Set the value of these bits one by one. Convert the binary values to decimal values and then set the sum for display on the operating panel, as shown in the following figure.

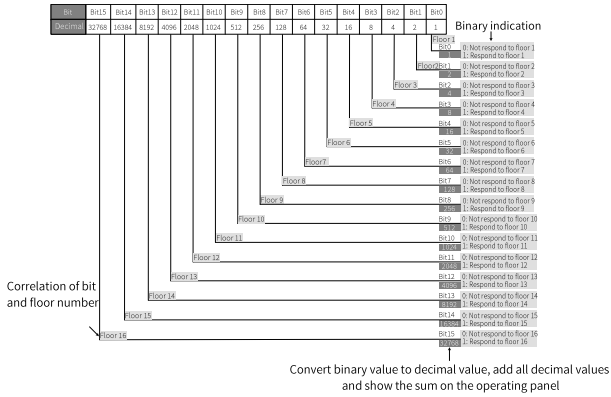
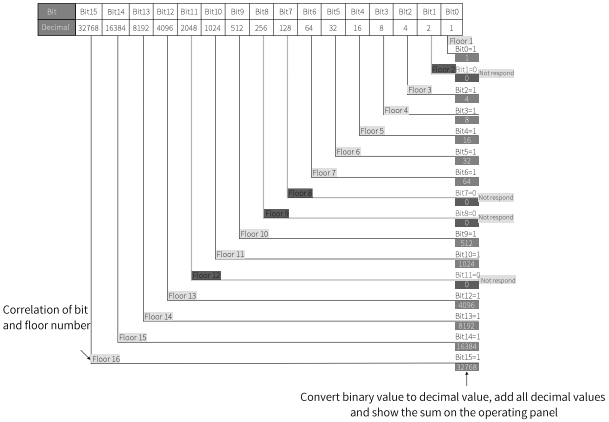


Figure 3-8 Converting binary value of F6-05 to decimal value

For a 16-floor elevator, if it does not respond to the calls at floors 2, 8, 9, and 12, set bit1, bit7, bit8, and bit11 to 0 and other bits to 1, as shown in the following figure.



Add all decimal values to get a sum:

1 + 4 + 8 + 16 + 32 + 64 + 512 + 1024 + 4096 + 8192 + 16384 + 32768 = 63101

Then, set F6-05 to 63101 on the operation panel.

The setting method for F6-06 and F6-35 is the same as that for F6-05.

Param.	Name	Range	Default	Unit	Property
F6-07	Number of elevators in group control	1 to 8	1	-	★
F6-08	Elevator No.	1 to 8	1	-	★
F6-09	Program selection	bit0: Dispersed waiting bit2: Reserved bit3: CAN2 parallel/group control bit4: Compatibility mode (group control) bit6: Clearing the floor number and direction display in advance bit8: Unidirectional hall call (single hall call button) bit9: Analog disconnection not detected bit10: Re-leveling E30 cancellation bit13: Disability calls in parallel/group control bit14: Time interval detection of safety circuit 2 and door lock circuit 2 (1.5s)	8	-	★

F6-07 and F6-08 are used to set the number of elevators and elevator No. in parallel/group control mode.

F6-09 bit0 to bit4 are used to set the parallel/group control mode.

Param.	Name	Range	Default	Unit	Property
F6-10	Leveling switch delay	10 to 50	14	ms	★

F6-10 indicates the delay time from the moment the leveling switch acts to the moment the leveling signal becomes active. You need not modify it.

Param.	Name	Range	Default	Unit	Property
F6-11	Elevator function selection	0 to 65535	8448	-	★

F6-11 is used to select the elevator functions. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

The functions defined by the binary bits of F6-11 are described in the following table.

F6-11 Elevator function selection			
bit	Function definition	Description	Default
bit1	Canceling main floor verification when the pulse is too large	The function of returning to main floor for verification due to large deviation of the car position is disabled.	0
bit2	Canceling automatic ordering of hall call addresses	If the display of a floor in group FE is set to 1, the following floors to be displayed are automatically arranged in the ascending order. This bit is used to cancel this function.	0
bit5	Starting current output phase loss detection of synchronous motor	The controller performs output current detection when the synchronous motor is started up. If the current is abnormal, the output will be locked and the running will be forbidden.	0
bit6	Reversing MCB lamp output	The MCB lighting output logic is reversed.	0
bit7	Door open valid in the non-door zone in the inspection state	In the inspection state, you can open/close the door by pressing the door open/close button at the non-door zone.	0
bit8	Door open once when inspection state switches to normal state at first-time power-on	The elevator door opens and closes once after the system turns from first-time inspection to normal running.	1
bit10	Buzzer not tweeting upon re-leveling	The buzzer inside the car does not tweet upon re-leveling.	0
bit11	Super-short floor function	The controller cannot perform shaft auto-tuning if the floor height is less than 500 mm. After this function is enabled, shaft auto-tuning can be performed normally.	0
bit12	Automatic fault reset after an hour	The controller automatically resets the faults once every hour.	0
bit13	E53 fault auto reset	When E53-101 is reported, the controller resets the fault automatically on the conditions of valid door open limit and door lock disconnection. A maximum of three times of auto reset is allowed.	1

F6-11 Elevator function selection			
bit	Function definition	Description	Default
bit14	Floor display not reset by up slow-down signal when super-short floor function is enabled	If this function is enabled, the up slow-down 1 signal does not reset floor display. The down slow-down 1 signal still resets floor display. This is valid only when the customized super-short floor function is enabled.	0
bit15	Floor display not reset by down slow-down signal when super-short floor function is enabled	If this function is enabled, the down slow-down 1 signal does not reset floor display. The up slow-down 1 signal still resets floor display. This is valid only when the customized super-short floor function is enabled.	0

Param.	Name	Range	Default	Unit	Property
F6-12	VIP floor	0 to F6-00	0	-	★

F6-12 is used to set the VIP floor.

Param.	Name	Range	Default	Unit	Property
F6-13	Security floor	0 to F6-00	0	-	★

F6-13 is used to set the security floor.

During the night security period or when the security signal is active, the elevator runs to the security floor first and opens and closes the doors once every time before it goes to the destination floor.

Enter the security state in either of the following methods:

- Set FD-07/FD-08 to 5. When the security signal is active, the elevator enters the security state.
- The night security floor function is enabled (FE-32 bit5 = 1) and the elevator enters the security state from 22:00 to 6:00.

Param.	Name	Range	Default	Unit	Property
F6-14	Start time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	☆
F6-15	End time of down collective selective 1	00.00 to 23.59	00.00	HH.MM	☆

Param.	Name	Range	Default	Unit	Property
F6-16	Start time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	☆
F6-17	End time of down collective selective 2	00.00 to 23.59	00.00	HH.MM	☆

F6-14 to F6-17 define the time range of down collective selective 1 and down collective selective 2, within which the elevator responds only to down calls.

Note

To enable the peak service of down collective selective control, set FE-32 bit6 to 1.

Param.	Name	Range	Default	Unit	Property
F6-18	Start time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	☆
F6-19	End time of time-based floor service 1	00.00 to 23.59	00.00	HH.MM	☆
F6-20	Service floor 1 of time-based floor service 1	0 to 65535	65535	-	☆
F6-21	Service floor 2 of time-based floor service 1	0 to 65535	65535	-	☆
F6-36	Service floor 3 of time-based floor service 1	0 to 65535	65535	-	☆
F6-22	Start time of time-based floor service 2	00.00 to 23.59	00.00	HH.MM	☆
F6-23	End time of time-based floor service 2	00.00 to 23.59	00.00	HH.MM	☆
F6-24	Service floor 1 of time-based floor service 2	0 to 65535	65535	-	☆
F6-25	Service floor 2 of time-based floor service 2	0 to 65535	65535	-	☆
F6-37	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.

Floor services 1, 2 and 3 correspond to floors 1 to 16, floors 17 to 32 and floors 33 to 48 respectively. For example, in the period of time-based floor service 1 (set by F6-18 and F6-19), the elevator responds only to the service floors set by F6-20, F6-21, and F6-36. The setting of time-based service floors is the same as that of service floors in F6-05.

Note

- To enable the time-based service floor function, set bit8 of FE-32 to 1. Then, you can set the time range and service floors.
- To enable the time-based door service, set bit0 of FE-32 to 1. Then, you can set the time range and service doors.

Param.	Name	Range	Default	Unit	Property
F6-26	Peak 1 start time for parallel/group control	00.00 to 23.59	00.00	HH.MM	☆
F6-27	Peak 1 end time for parallel/group control	00.00 to 23.59	00.00	HH.MM	☆
F6-28	Peak 1 floor for parallel/group control	F6-01 to F6-00	1	-	★
F6-29	Peak 2 start time for parallel/group control	00.00 to 23.59	00.00	HH.MM	☆
F6-30	Peak 2 end time for parallel/group control	00.00 to 23.59	00.00	HH.MM	☆
F6-31	Peak 2 floor for parallel/group control	F6-01 to F6-00	1	-	★

F6-26 to F6-28 are used to set peak service time period 1 and corresponding service floors.

F6-29, F6-30, and F6-31 are used to set peak service period 2 in the parallel/group control mode and the service floors during this period.

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.

Note

To enable the peak service for parallel/group control, set bit7 of FE-32 to 1. To disable this function, set bit7 of FE-32 to 0.

Param.	Name	Range	Default	Unit	Property
F6-38	Elevator lock start time	00.00 to 23.59	00.00	HH.MM	☆
F6-39	Elevator lock end time	00.00 to 23.59	00.00	HH.MM	☆

F6-38 and F6-39 are used to set the elevator lock time period, during which the elevator is in locked state, having the same effect as the elevator lock switch.

The elevator can switch to the lock state in the following two ways:

- Set F6-40 bit5 to 1 to enable the timed elevator lock function. F6-38 and F6-39 set the elevator lock time period when the system will automatically lock the elevator.
- Set FD-07/08 to 1 to activate the hall elevator lock key switch.

Param.	Name	Range	Default	Unit	Property
F6-40	Program control selection 1	0 to 65535	0	-	★
F6-41	Program control selection 2	0 to 65535	0	-	★
F6-42	Program control selection 3	0 to 65535	0	-	★

These parameters are used for program control selection. Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

The functions defined by the binary bits of these parameters are described in the following table.

F6-40 Program control selection 1			
bit	Function definition	Description	Default
bit0	Accessibility function selection	Enable or disable the accessibility function	0
bit1	Soft limit function	When the up slow-down and down leveling signals are active (up leveling inactive), the system assumes that the up limit is performed When the down slow-down and up leveling signals are active (down leveling inactive), the system assumes that the down limit is performed	0
bit2	JP16 input used as rear door selection (button)	JP16 is used for the input of the rear door selection. This function is enabled if FC-04 is set to 2. When JP16 has button input, the elevator opens only the rear door with the button indicator ON. When the button indicator is OFF, the elevator opens only the front door	0
bit3	JP16 input used as the back door open signal	JP16 is used for the input of the back door open signal	0
bit4	Opening only one door of opposite doors under manual control	This function is enabled only in the through-type door control modes 3 and 4. In this case, only one door opens each time while the other door must stay in the door close limit state Note: In group FD, the extended input includes "Single/Double door selection". If this input is active in the through-type door control mode 3, both doors open if there is a car call	0
bit5	Timed elevator lock	F6-38/F6-39 is valid only when this function is enabled	0
bit6	Manual Door	This function is for on-site elevator use	0
bit7	Fire service or elevator lock through hall call from any floor	-	0
bit8	Hall call commands as rear door when duplicated commands are used as accessibility function	-	0
bit9	Disabling reverse floor number clear	The system clears all the current car calls by default every time the elevator changes the direction. When this function is enabled, clearing reverse floor numbers is disabled.	0

F6-40 Program control selection 1			
bit	Function definition	Description	Default
bit10	Displaying next arriving floor number	The next floor the elevator is to arrive at is displayed during elevator running.	0
bit11	Responding to car calls first	The system responds to hall calls only after executing all car calls.	0
bit12	Car call auxiliary command terminal used for accessibility function	You can set the auxiliary command terminal (CN8) on the CTB for input of the disability calls: 0: Consistent with CN7 for the single door, and rear door for the double door 1: CN8 calls are the disability calls	0
bit13	Duplicated commands used as accessibility function and rear door function	It is valid only when the function of bit14 is enabled: 1: Accessibility function 0: Rear door function	0
bit14	car call command duplication	Car call command duplication: A. Function disabled: CN7 is used for front door calls or ordinary calls, and CN8 is used for rear door calls or disability calls B. Function enabled: For CN7 and CN8, floors 1 to 16 are for front door calls or ordinary calls, and floors 17 to 32 for rear door calls or disability calls	0
bit15	JP20 input used for switchover to rear door (switch)	JP20 is used for input of switchover between the front door and the rear door	0

F6-41 Program control selection 2			
bit	Function definition	Description	Default
bit0	Not stop at the slow-down switch for car top inspection	Conditions for decelerating to stop due to slow-down 1: • bit0 = 1: Slow-down signal active and car top inspection disabled • bit0 = 0: Slow-down signal active and both EEO and inspection disabled	0
bit2	Decelerate to stop in the inspection state	During inspection, the system decelerates to stop if the terminal floor slow-down 1 acts	0
bit3	Car top inspection communication	Forcibly enable the car top inspection communication and operation is allowed for active car top inspection signal	0

F6-41 Program control selection 2			
bit	Function definition	Description	Default
bit4	Buzzer tweeting during door open delay	The buzzer will tweet when the door open delay time set in FB-14 is reached	0
bit6	Door open delay cancellation	Door open delay is canceled when the door open delay button is pressed again	0
bit7	Buzzer prompt for active button input	-	
bit8	Elevator lock at door open	In the elevator lock state, the elevator keeps the door open at the elevator lock floor	0
bit9	Display available at elevator lock	In the elevator lock state, hall calls are displayed normally	0
bit10	Elevator lock in the attendant state	The elevator can be locked properly in the attendant state	0
bit11	Flashing at arrival	The car display blinks when the elevator arrives at the floor. The blinking advance time is set through F6-47	0
bit12	Door re-open during door open delay	The door re-opens if the door open delay input is active during door close	0
bit13	Door re-open upon valid car call of current floor	The door re-opens if the car call of the current floor is valid during door close	0
bit14	Electricity meter count 8 function	-	0
bit15	Electricity meter count 6 function	-	0

F6-42 Program control selection 3			
bit	Function definition	Description	Default
bit0	COB hall call scheme selection	-	-
bit1	Canceling door open/ close command at delay after door open/close limit	The door open/close command is canceled at the delay of 1s after door open/close limit	0
bit2	Not judging door lock state at door close output	In normal conditions, the system determines that the door is completely closed only when the door close limit signal is active and the door lock is applied. If this function is enabled, the system does not judge the door lock state	0

F6-42 Program control selection 3			
bit	Function definition	Description	Default
bit3	Door close signal output during operation	There is continuous door close output as the elevator runs	0
bit4	Returning to base floor for verification at first-time power-on	The elevator runs to the bottom floor for verification at power-on for the first time	0
bit5	Clearing calls immediately at elevator lock	0: After the elevator lock signal becomes active, the elevator clears hall calls and responds to the current car call, and then enters elevator lock state 1: After the elevator lock signal becomes active, the elevator clears all calls and enters elevator lock state	0
bit6	Electromagnetic lock NC output	After the NC output is selected, the lock signal is not output during door open and is output during door close	0
bit7	Canceling fault E50 detection	When bit7 is set to 1, fault E50 is not detected	0
bit8	Door open/close limit detection cancellation	When this function is enabled, the fault detection of the door open/close limit signal is canceled	0
bit9	Canceling fault subcode scrolling display	When this function is enabled, the keypad will not have a scrolling display of the fault	0
bit10	Door open energy saving	In the case of waiting with the door open, the system closes the lighting and fan as specified by the time set in F9-01 in door open limit state	0
bit11	Independent switch exiting from parallel control	When this function is enabled, switching a single elevator to independent mode will exit from parallel control and the single elevator will operate in normal mode. When this function is disabled, switching a single elevator to independent mode will exit from parallel control and the single elevator will enter VIP operation mode	1
bit12	UCMP door lock detection enabled	-	0
bit13	Door close quickly upon light curtain detecting obstacles	If the light curtain is blocked as the door closes, the door will be reopened and closed quickly upon reaching the close limit	0
bit14	Fault E53-105/106 auto reset enabled	-	1

Param.	Name	Range	Default	Unit	Property
F6-43	Attendant function selection	0 to 65535	128	-	★

F6-43 is used to select the attendant-related elevator functions. Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled. You can view and set this function code using the bits.

The functions defined by the binary bits of F6-43 are described in the following table.

F6-43 Attendant function selection			
bit	Function definition	Description	Default
bit0	Clearing calls after entering attendant state	All calls are canceled after the elevator enters attendant state for the first time	0
bit1	Not responding to hall calls	The car blinks inside if there is a hall call, but the system does not respond to it automatically	0
bit2	Attendant/Normal state switchover	If this function is enabled, the setting of F5-00 is valid	0
bit3	Door close at jog	The elevator door closes after the attendant presses the door close button manually	0
bit4	Automatic door close	It is the same as the normal state. After the door open holding time is reached, the door closes automatically	0
bit5	Buzzer tweeting at intervals in the attendant state	When there is a registered hall call, the buzzer tweets 2.5s at intervals	0
bit6	Continuous buzzer tweeting in the attendant state	When there is a registered hall call, the buzzer tweets continuously until there is a car registration of the hall call floor	0
bit7	Car call button blinking to prompt	When the hall call input is active, the car call button for the corresponding floor blinks to give a prompt	1

Param.	Name	Range	Default	Unit	Property
F6-44	Fire emergency function selection	0 to 65535	16456	-	★

F6-44 is used to select the fire emergency-related functions. Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

The functions defined by the binary bits of F6-43 are described in the following table.

F6-44 Fire emergency function selection			
bit	Function definition	Description	Default
bit0 to bit2	Reserved	-	-
bit3	Arrival gong output in inspection or fire emergency state	The arrival gong is output in the inspection or fire emergency state	1
bit4	Multiple car calls registered in the fire emergency state	Multiple car calls can be registered in the fire emergency state. If this function is disabled, only one car call can be registered	0
bit5	Retentive at power failure in the fire emergency state	In the fire emergency state, the current system and car state will be recorded at power failure and resumed after the system is powered on again	0
bit6	Door close by holding down the door close button	In the fire emergency state, the door close process can be completed only by holding down the door close button until the door close limit is reached. Otherwise, it will be automatically switched over to door open	1
bit7	Reserved	-	-
bit8	Door close at car call registration	The car call button can help close the door	0
bit9	displaying hall calls in the fire emergency state	Hall call floors are displayed in the fire emergency state	0
bit10	Forced running in the firefighter state	JP22 used for forced running input in the firefighter state When the JP22 input switch and the door close button are enabled simultaneously in the firefighter running state, the buzzer tweets and the system outputs the door close signal. If the door lock is not enabled within 10s, the system outputs the shorting door lock circuit contactor signal, and the elevator starts running (used together with SCB board).	0

F6-44 Fire emergency function selection			
bit	Function definition	Description	Default
bit11	Exiting fire emergency state	The system can exit the firefighter state only after the elevator arrives at the fire emergency floor	0
bit12	not clearing car calls at reverse door open in the firefighter state	In the firefighter running state, the car calls that have been registered are not cleared at reverse door open	0
bit13	Reserved	-	-
bit14	Door open by holding down the door open button	In the fire emergency state, the door open process can be completed only by holding down the door open button until the door open limit is reached. Otherwise, it will be switched over to door close automatically.	1
bit15	Automatic door open at fire emergency floor	The door opens automatically after the elevator arrives at the fire emergency floor	0

Param.	Name	Range	Default	Unit	Property
F6-45	Emergency evacuation function selection	0 to 65535	0	-	★

F6-45 is used to select the emergency evacuation-related elevator functions. Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

- If F6-45 bit2 is set to 1, the elevator stops at the emergency evacuation parking floor set in F6-49.
- If F6-45 bit2 is set to 0, the elevator stops at the nearest landing floor.

The functions defined by the binary bits of F6-45 are described in the following table.

F6-45 Emergency evacuation function selection										
bit	Function definition	Description								Default
bit0	Orientation mode	0	Automatic computation of the direction (The elevator runs in heavy-load direction. It is for no-load-cell mode selection)	0	Nearest landing floor direction	1	Load-based direction control (The elevator runs in heavy-load direction. It is for load-cell mode selection)	1	Designated load operation direction	0
bit1		0		1		0		1		0
bit2	Stop at the base floor	During evacuation running, the elevator arrives at the evacuation parking floor set in F6-49 (It must be a service floor of a non-zero value). Otherwise, the elevator stops at the nearest floor								0
bit3	Door open upon one leveling signal	During evacuation running, the elevator arrives at the destination floor. When a leveling signal is active, the elevator decelerates to stop								0
bit4	Startup compensation	No-load-cell startup is still valid in emergency evacuation running								0
bit5	Evacuation in defined direction	bit5 = 1: Rescue in the up direction bit5 = 0: Rescue in the down up direction								0
bit6 to bit7	Reserved	-								-
bit8	Emergency evacuation running time protection	If the elevator does not arrive at the required floor after 50s emergency evacuation running, E33 is reported. And the shorting stator braking mode cannot be switched over to the controller drive within the set time limit								0

F6-45 Emergency evacuation function selection			
bit	Function definition	Description	Default
bit10	Emergency buzzer tweeting	The buzzer has output at intervals during emergency evacuation running	0
bit11	HCB output	-	0
bit12	Shorting stator braking mode switched to controller drive	If the speed is still lower than the value set in F6-48 after the elevator is in shorting stator braking mode for 10s, the mode is switched over to controller drive	0
bit14	Emergency evacuation exit mode	0: The system exits emergency evacuation when receiving the door open limit signal from the elevator that arrives at the destination floor	0
		1: The system exits emergency evacuation when receiving the door close limit signal from the elevator that arrives at the destination floor	0
bit15	Shorting stator braking function	Enable the function to make it act	0

F6-46 is used to select the elevator VIP function.

Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

Param.	Name	Range	Default	Unit	Property
F6-46	VIP function selection	0 to 65535	0	-	★

The functions defined by the binary bits of F6-46 are described in the following table.

F6-46 VIP function selection			
bit	Function definition	Description	Default
bit0	VIP enabled by hall call at VIP floor	After this function is enabled, the system enters VIP running	0
bit1	VIP enabled by terminal	After the terminal for VIP hall call becomes ON, the system enters VIP running	0
bit2 to bit 7	Reserved	-	-
bit8	Number of VIP car calls limited	If this function is enabled, only one car call can be selected simultaneously in the VIP state	0

Param.	Name	Range	Default	Unit	Property
F6-47	Blinking advance time	0.0 to 15.0	1.0	s	☆

Param.	Name	Range	Default	Unit	Property
F6-48	Emergency evacuation switching speed	0.010 to 0.630	0.010	m/s	★

F6-48 is used to set the switching speed for the switchover of the shorting stator braking mode to controller drive.

Param.	Name	Range	Default	Unit	Property
F6-49	Emergency evacuation parking floor	0 to F6-00	0	s	★

If F6-45 bit2 is set to 1, the elevator stops at the emergency evacuation parking floor set in F6-49.

Param.	Name	Range	Default	Unit	Property
F6-50	Floor offset in parallel control	0 to 40	0	-	★

F6-50 is used when the bottom floors of two elevators in parallel control are inconsistent. Direct parallel control can be implemented by setting this parameter, without the necessity of readjusting the top and bottom floors and repeating shaft auto-tuning.

Param.	Name	Range	Default	Unit	Property
F6-51	Quiescent current	0.00 to 655.00	0	A	★

F6-51 is used to set the quiescent current during the certification of static elements.

Param.	Name	Range	Default	Unit	Property
F6-52	Program function selection	0 to 65535	66	-	★

F6-52 is used for program function selection. Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

The functions defined by the binary bits of these parameters are described in the following table.

F6-52 Program function selection			
bit	Function definition	Description	Default
bit1	Enable communication type SCB	Enable communication-type SCB	1
bit2	AFE use of CAN communication supported	Enable the AFE communication function	0
bit3	External shaft reset device	To enable the function,set F6-52 bit3 to 1 and the pit interface board is used for inspection Disconnect the door lock twice to exit the inspection state and get the elevator back to the normal state	0
bit4	Inspection speed limit at terminal floors	This function allows the elevator to stop first and then run at a speed not exceeding 0.3 m/s when the elevator is within 2 m away from the terminal floor	0
bit6	Enabling CTB leveling signal input	It is used to enable the transmission of up leveling and down leveling signals through CTB CAN communication	1
bit7	Door operator overtemperature detection	It is used to enable the door operator overheat detection function	0
bit8	CTB safety edge input	This function is enabled by setting F6-52 bit8 to 1. It is used for the safety edge input selection on the CTB.	0

F6-52 Program function selection			
bit	Function definition	Description	Default
bit9	Light curtain fault handling	• Disable the light curtain fault handling function • The light curtain action remains undetected in 5 consecutive car call operations and will be considered abnormal. Forced door close will be output accompanied by buzzer prompt. After the light curtain acts, it returns to normal. • Disable the function by setting F6-52 bit9 to 1	0
bit12	Shorting door lock circuit relay output upon arrival	Disable automatic shorting door lock circuit relay output upon floor arrival by setting F6-52 bit12 to 1	0
bit13	Pulse multiplication setting	It is for setting pulse multiplication of the asynchronous motor when E35 is reported during shaft auto-tuning	0
bit15	Forced inspection following interrupted communication	Enable forced inspection following interrupted communication CTB (only keep running for emergency electrical operation)	0

Param.	Name	Range	Default	Unit	Property
F6-54	Program function selection 5	bit0: Door open allowed for forced door close bit1: Door close supported for fault occurrence bit3: No light curtain detection during door close in inspection mode bit4: Not exit elevator parking upon door lock disconnection bit5: Disable hall calls to enter VIP parallel mode and independently optimize response to hall calls bit6: Overspeed protection for shorting stator braking evacuation bit8: Car top maintenance switch reuse of attendant signal bit9: Enable separate brake control bit10: Car top emergency power supply supported bit11: Communication type power supply board supported bit12: Display inspection state when the safety circuit is open during emergency electrical operation (EEO) bit14: Use of direction change switch for alarm bell signal input	0	-	★

Param.	Name	Range	Default	Unit	Property
F6-55	Function parameter selection	bit0: Door operator use of MOD serial communication bit1: Door operator use of MOD communication check bit2: Door operator use of CAN serial communication bit3: Door operator communication use of contract number verification bit4: Light curtain use of MOD serial communication bit5: Light curtain use of CAN communication bit6: ARD contract No. binding bit9: Change the upper limit setting for factory-specific customized input and output points bit11: Enable communication-type encoder function bit12: Communication-type encoder factory code verification bit13: Enable communication-type encoder contract No. binding bit14: Enable communication-type encoder contract No. binding delay function	0	-	★

3.2.9 Group F7: 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 call to perform commissioning. After commissioning is completed, check whether the parameters in this group are set correctly.

Param.	Name	Range	Default	Unit	Property
F7-00	Car call floor registered	0 to F6-00	0	-	☆
F7-01	Up call floor registered	0 to F6-00	0	-	☆
F7-02	Down call floor registered	0 to F6-00	0	-	☆

The three parameters are used to set the destination floors during commissioning or repair. F7-00, F7-01, and F7-02 are respectively used as the car call button, up hall call button, and down hall call button. After the parameters are set, the settings remain effective until the they are changed to 0 or a power failure occurs.

Param.	Name	Range	Default	Unit	Property
F7-03	Random running times	0 to 60000	0	-	☆

F7-03 is used to set the random running times of the system.

The NICE3000^{new} has the random automatic running function. If the setting of F7-03 is greater than 60000, the system keeps implementing random automatic running until you set F7-03 to 0. You can set the random running interval in F7-08.

Param.	Name	Range	Default	Unit	Property
F7-04	Hall call enable	0: Hall call enabled 1: Hall call disabled	0	-	☆

F7-04 is used to forbid the hall calls. The possible values to be set:

0: Hall call enabled

1: Hall call disabled

Param.	Name	Range	Default	Unit	Property
F7-05	Door open enable	0: Door open allowed 1: Door open forbidden	0	-	☆

F7-05 is used to forbid door open. The possible values to be set:

0: Door open allowed

1: Door open forbidden

Note

Note that 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.

Param.	Name	Range	Default	Unit	Property
F7-06	Overload enable	0: Overload disabled 1: Overload allowed	0	-	☆

F7-06 is used to set the overload function. The possible values to be set:

0: Disabled (overload forbidden)

1: Enabled (overload allowed)

Note

Note that overload is enabled (F7-06 = 1) only in the heavy-load test. Once the test is completed, disable overload running immediately.

Param.	Name	Range	Default	Unit	Property
F7-07	Limit switch enable	0: Limit switch enabled 1: Limit switch disabled	0	-	☆

F7-07 is used to set limit switches. The possible values to be set:

0: Limit switch enabled

1: Limit switch disabled

Note

The limit switch is disabled only in the test of the final limit switch. Use the function with caution.

Param.	Name	Range	Default	Unit	Property
F7-08	Random running interval	0 to 1000	0	s	☆

F7-08 is used to set the time interval between two times of random running.

Param.	Name	Range	Default	Unit	Property
F7-09	Braking force detection result	0: Meaningless 1: Pass 2: Fail	0	-	●
F7-10	Countdown for braking force detection period	0 to 21600	1440	min	★

F7-09 indicates braking force test results performed by the system. The possible values to be set:

0: Braking force detection has not been performed yet.

1: It indicates that it has passed the braking force detection.

2: It indicates that braking force test fails and the system reports the fault E66. The brake must be inspected after any fault and the fault can be reset only after the braking force detection succeeds.

F7-10 is the countdown for the braking force detection period.

The default is 1440 minutes (24 hours). The braking force detection is automatically triggered if the system receives no call within 12 hours (the stop time exceeds the energy saving time). When it is less than ten 10 minutes to 24 hours, the system clears car calls without any response to hall calls, the doors automatically close, and the buzzer tweets. After 30s of tweeting, the system forcibly performs braking force detection once.

Param.	Name	Range	Default	Unit	Property
F7-13	Balancing factor result	0.00 to 99.99	0	%	★
F7-14	Upper limit reference value of brake torque (double-arm)	0 to 999	0	%	●

F7-13 shows the result of system balancing factor.

Param.	Name	Range	Default	Unit	Property
F7-15	Reference value of brake torque upper limit (single-arm)	0 to 999	0	%	●
F7-17	Braking torque setting (single-arm)	0 to 50	15	%	★

Param.	Name	Range	Default	Unit	Property
F7-25	Car top maintenance distance	0.000 to 5.000	2.000	m	★

F7-25 sets the programmed descent distance for the elevator car top during the process of initiating a car-top maintenance routine.

Param.	Name	Range	Default	Unit	Property
F7-26	Start time of shorting motor stator braking test	00.00 to 23.59	00.00	-	☆
F7-27	End time of shorting motor stator braking test	00.00 to 23.59	02.00	-	☆
F7-28	Braking force detection start time	00.00 to 23.59	00.00	-	☆
F7-29	Braking force detection end time	00.00 to 23.59	00.00	-	☆
F7-30	Braking force detection time setting	0 to 21600	0	min	☆
F7-32	Ascending car overspeed protection (ACOP) speed percentage	100 to 150	130	%	★
F7-33	Parking holding time	0 to 120	15	s	★
F7-34	Parking slip distance detection setting	1 to 20	5	min	★
F7-35	Parking command delay time	0 to 100	30	ms	★
F7-37	Remaining days for auxiliary shorting motor stator braking test	0 to 65535	7	day	●
F7-38	Automatic trigger cycle for auxiliary shorting motor stator braking test	1 to 15	7	day	★

3.2.10Group F8: Enhanced Function Parameters

Param.	Name	Range	Default	Unit	Property
F8-00	Car load ratio during load cell auto-tuning	0 to 100	0	%	★

To perform load cell auto-tuning, do as follows:

1. Ensure that F8-01 is set to 0 and F5-36 (Load cell input selection) is set to 2 (CTB 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 F8-00 to 0 and press ENTER.
3. Put N% load in the car. Then set F8-00 to N and press ENTER. For example, if you put 500 kg load in the elevator with rated load of 1000 kg, set F8-00 to 50.

After the load-cell auto-tuning is completed, the corresponding no-load and full-load data will be recorded in F8-06 and F8-07. You can also manually input the data as needed.

Param.	Name	Range	Default	Unit	Property
F8-01	Pre-torque selection	0 to 3	2	-	★
F8-02	Pre-torque offset	0.0 to 100.0	50.0	%	★

F8-01 is used to set the pre-torque compensation mode at startup of the elevator. The possible values to be set:

0: Pre-torque disabled and load cell auto-tuning is allowed.

1: Load cell pre-torque compensation. With a load cell, the system implements the pre-torque compensation.

2: Automatic pre-torque compensation. The system automatically adjusts the pre-torque compensation at startup without a load cell.

3: Both load cell pre-torque compensation and automatic pre-torque compensation valid. When automatically adjusting the pre-torque compensation, the system makes a correction together with the load cell to achieve better startup results.

If F8-01 is set to 1, the system outputs the torque matching the load in advance to ensure the riding comfort at startup. The output torque is limited by the torque upper limit (F2-08). When the load torque exceeds the set torque upper limit, the system outputs the torque upper limit.

F8-02 is used to set the pre-torque offset.

It is actually the balancing factor of the elevator, indicating the percentage of the car load out of the rated load when the counterweight and the car weight are balanced.

Param.	Name	Range	Default	Unit	Property
F8-03	Drive gain	0.00 to 2.00	0.60	-	★
F8-04	Brake gain	0.00 to 2.00	0.60	-	★

These two parameters are used to set the pre-torque gain when the elevator runs on the drive side or the brake side.

Param.	Name	Range	Default	Unit	Property
F8-05	Current car load	0 to 255	0	-	●

F8-05 is readable and reflects the load condition in the car. The value is sampled by the NICE3000^{new} by using a load cell to judge overload or full-load, or calculate the torque current for load cell pre-torque compensation.

Param.	Name	Range	Default	Unit	Property
F8-06	No-load measured by load cell	0 to 255	0	-	★
F8-07	Full-load measured by load cell	0 to 255	100	-	★

Param.	Name	Range	Default	Unit	Property
F8-08	Anti-nuisance function	0: Disabled 1: Nuisance judged by load cell 2: Nuisance judged by light curtain 4: Nuisance judged by light-load signal	0	-	☆

F8-06 and F8-07 respectively records the car no-load and full-load conditions in the car. They are AD sampling values.

F8-08 is used to judge nuisance. The possible values to be set:

0: Disabled

1: 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.

2: Nuisance judged by light curtain. The system determines that nuisance exists when the light curtain does not act after the elevator stops at arrival floor for three consecutive times.

4: 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, call calls need to be registered again.

Param.	Name	Range	Default	Unit	Property
F8-09	Emergency evacuation speed at power failure	0.020 to 0.300	0.150	m/s	★
F8-10	Emergency evacuation power supply at power failure	0 to 2	1	-	★

F8-09 is used to set the speed for emergency evacuation operation at power failure.

F8-10 is used to set the emergency evacuation power supply mode at power failure.

The possible values to be set:

0: Motor not running

1: UPS

2: 48 V battery power supply

Param.	Name	Range	Default	Unit	Property
F8-11	Holding time of zero-speed torque current upon brake close	0.200 to 1.500	0.600	s	★

This parameter is used to set the time during which the system retains the zero-speed torque current output.

Param.	Name	Range	Default	Unit	Property
F8-12	Fire emergency floor 2	0 to F6-00	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 the fire emergency floor.

Param.	Name	Range	Default	Unit	Property
F8-13	Steel rope slip compensation coefficient	0 to 100	50	-	★

Param.	Name	Range	Default	Unit	Property
F8-14	Hall call communication setting	bit0: Hall communication baud rate bit1: Baud rate setting bit4: Hall call energy-saving control bit5: VEGA communication protocol (for hall call) bit6: VEGA communication protocol (for car display) bit7: Expansion board MOD port function selection (0 for hall call, 1 for transparent transmission of host computer) bit9: Faint light control of HCB buttons bit10: Enable faint light function of car call buttons bit11: Car time synchronization protocol; distributes RTC time to the car display board	1	-	☆

Param.	Name	Range	Default	Unit	Property
F8-15	CAN communication setting	bit0: No delay of car call button indicator bit1: Disable IC card car call limit bit2: Car call cancellation by pressing button once bit3: IC card handshaking bit4: Enable touchscreen protocol bit5: Enable the communication command board bit6: Car call canceled by holding down the button bit8: Car baud rate selection bit9: IC card function of idle elevator returning to main floor bit10: Door open/close button not controlled by the IC card bit11: CCB and COB information viewing bit12: Communication-type SCB door zone selection bit13: Enable visitor access linkage cancellation with equipment offline bit14: Enable visitor access hall call linkage	0	-	☆
F8-16	Start address of hall call auxiliary command	0 to 40	0	-	★
F8-17	Hall call address check	0: No check performed 1: HCB address check	0	-	★

Param.	Name	Range	Default	Unit	Property
F8-18	Communication initialization	0 to 1	0	-	★
F8-20	Display board function selection	bit0: Inspection display selection bit1: Fault display selection bit2: Elevator lock display selection bit3: Fire emergency display selection bit4: Firefighter display switch bit5: Firefighter display selection bit6: Emergency running display switch bit7: Emergency running display selection bit8: Status language display selection bit9: Scrolling floor display selection bit10: Arrow style selection 1 bit11: Arrow style selection 2	0	-	☆

Param.	Name	Range	Default	Unit	Property
F8-21	Function selection F8-21	bit0: Enable call re-registration for overload bit1: Enable door open forbidden for hall call of the floor with full load bit2: Enable stop after current cancellation of asynchronous motor bit3: Enable optimization of stop conditions bit4: Enable floor registration forbidden for reverse direction bit5: Enable the limit position fault judgment in shorting stator braking mode bit6: Disable elevator stop optimization upon blocking the light curtain bit7: Prohibit removal of the last call in double-press cancellation bit8: Disable double-press cancellation without door open bit9: Enable auto door open in special conditions bit10: Enable door close delay for hall call input bit11: Disable simulated hall calls at intervals bit12: Disable UPS and leveling compensation optimization bit13: Disable random service floor judgment bit14: Disable communication optimization for re-leveling error bit15: Disable re-leveling times protection	0	-	☆
F8-29	Communication-type encoder contract No. binding delay days	0 to 15	0	-	★

F8-14 bit0 = 0: The communication baud rate between the MCB and HCB is 9600 bps.

F8-14 bit0 = 1: The communication baud rate between the MCB and HCB is 38400 bps. Note that only the NICE3000^{new} product series supports 38400 bps, and the old product series supports only 9600 bps.

The system automatically determines the communication baud rate, and generally, you need not set this parameter.

F8-16 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 + F8-16

If F8-17 is set to 1, the HCB no longer displays the current floor information of the car but displays the set address of itself, convenient for inspection in the case of wrong floor address setting. This function is valid only when the communication baud rate is 38400 bps.

Param.	Name	Range	Default	Unit	Property
F8-33	Function selection F8-33	bit1: Enable safety circuit disconnection in EEO state bit2: Enable pit reset function by the MCB input terminal bit3: Enable pit reset by the pit inspection point bit4: Enable pit reset by the hall call input terminal bit5: Enable pit reset function by the hall call up button bit6: Enable inspection up/down limit function by the MCB input terminal bit14: The shorting motor stator pulse test and original shorting motor stator braking mode can be selected	11	-	☆

Param.	Name	Range	Default	Unit	Property
F8-34	Function selection F8-34	bit0: Pit X1 inspection signal bit1: Pit X2 inspection up signal bit2: Pit X3 inspection down signal bit3: Pit X4 triangle key signal of front landing door (NC by default) bit4: Pit X5 triangle key signal of rear landing door (NC by default) bit5: Pit X6 record of pit inspection reset signal (NO by default) bit6: Pit input point not reset for the triangle key bit7: No reset operations after the elevator runs during pit inspection bit8: Conditions met for pit inspection reset bit10: Pit access signal on the control cabinet bit11: Pit reset signal on the control cabinet	0	-	●
F8-35	High bits of the RTC register	0 to 65535	0	-	☆
F8-36	Low bits of the RTC register	0 to 65535	0	-	☆
F8-37	High bits of agent No.	0 to 65535	0	-	☆
F8-38	Low bits of agent No.	0 to 65535	0	-	☆
F8-42	Function selection F8-42	bit0: EEO up/down button stuck protection disabled bit1: Car top X15/X16 multiplexing function disabled	0	-	☆

3.2.11Group F9: Time Parameters

Param.	Name	Range	Default	Unit	Property
F9-00	Maximum idle time before returning to main floor	0 to 240	10	min	☆

It is used to set the idle time of the elevator before returning to the main floor.

When the idle time of the elevator exceeds the setting of this parameter, the elevator returns to the base main floor.

Param.	Name	Range	Default	Unit	Property
F9-01	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.

Param.	Name	Range	Default	Unit	Property
F9-02	Running time protection	0 to 45	45	s	★

It is used to set the running time limit of the motor.

In the normal running state, the system will perform protection 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. 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 3s, it becomes invalid.

Param.	Name	Range	Default	Unit	Property
F9-03	Clock: year	2009 to 2100	Current time	YYYY	☆
F9-04	Clock: month	1 to 12	Current time	MM	☆
F9-05	Clock: day	1 to 31	Current time	DD	☆

Param.	Name	Range	Default	Unit	Property
F9-06	Clock: hour	0 to 23	Current time	HH	☆
F9-07	Clock: minute	0 to 59	Current time	MM	☆

These parameters are used to set the current date and time of the system.

These parameters are to control internal time of the system. Time keeping is supported at power failure. You need to set the current system time correctly so that functions related to the time can be implemented.

Param.	Name	Range	Default	Unit	Property
F9-09	Cumulative operation time	0 to 65535	0	h	●
F9-11	High bits of running times	0 to 9999	0	-	●
F9-12	Low bits of running times	0 to 9999	0	-	●

These parameters are used to view the actual running time and running times of the elevator.

Running times of the elevator = F9-11 x 10000 + F9-12.

Param.	Name	Range	Default	Unit	Property
F9-13	Maintenance notification period	0 to 99	0	day	☆

It is the forced maintenance notification function.

When this parameter is set to a non-zero value, this function is enabled, and the system starts to count the days. If there is no power-off operation during the counting and the counted days reaches the value of this parameter, the elevator enters the parking state and the system reports Err08, notifying that the elevator must be maintained and cannot run. The maintenance personnel need to power off and enter the elevator into inspection state, after which the system resets the counting and commences a fresh count. If this parameter is set to 0, this function is disabled.

Param.	Name	Range	Default	Unit	Property
F9-15	Running days for maintenance viewing	0 to 99	0	day	●

3.2.12Group FA: Keypad Setting Parameters

Param.	Name	Range	Default	Unit	Property
FA-00	Keypad display selection	0 to 3	3	-	☆

The MCB of this product has three LED displays. Users can change the displayed content based on this parameter. Detailed settings are as follows.

The possible values to be set:

0: Reverse display of physical floors

1: Normal display of physical floors

2: Reverse display of hall call floors

3: Normal display of hall call floors

Param.	Name	Range	Default	Unit	Property
FA-01	Parameter display in running state	1 to 65535	1 to 65535	-	☆

FA-01 is used to set the running parameters displayed on the operating panel when the elevator is running.

FA-01 includes 5 binary bits. A total of 5 parameters can be displayed during running. You 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. You can modify this parameter for your own convenience.

The correlation between the parameters and binary bits is as follows.

Binary bit	Name	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	Low bits of input terminals	1
bit7	High bits of input terminals	1
bit8	Output terminal	1
bit9	Current floor	1
bit10	Current position	1

Binary bit	Name	Default
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 FA-01 is as follows.

In the running state, FA-01 is displayed as a decimal value. You can press the Shift key to view the parameter indicated by each bit circularly.

Param.	Name	Range	Default	Unit	Property
FA-02	Parameter display in the stop state	1 to 65535	1 to 65535	-	☆

FA-02 is used to set the state parameters displayed on the operation panel when the elevator is in the stop state.

This parameter includes 16 bits corresponding to 2 stop state parameters.

The following table shows details.

Binary bit	Name	Default	Binary bit	Name	Default
bit0	(Rated speed)	1	bit8	Slow-down 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 terminal	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 FA-02 is similar to that of FA-01.

The running and stop parameters 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 (F0-03).
- 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 AC drive drives the motor (A).
- Output frequency: indicates the actual frequency of the running motor (Hz). It is proportional to the running speed.

Param.	Name	Range	Default	Unit	Property
FA-03	Current encoder angle	0.0 to 359.9	0.0	°	●

FA-03 displays the real-time encoder angle. This parameter cannot be modified.

Param.	Name	Range	Default	Unit	Property
FA-05	MCB board software	0 to 65535	0	-	●
FA-06	Driver board software version	0 to 65535	0	-	●

FA-05 and FA-06 are used to view the software version of the MCB and driver board respectively.

The following part describes the example of viewing the integrated controller version information.

MCB version: V20.17-F15.00 -L02.01.

When you view FA-05, the LED operating panel displays the customer No. "F15.00" for 3s first and the major and minor version information "20.17".

Press STOP RES, and the LED operating panel displays the customized and temporary version information "L02.01".

When you view FA-06, the LED operating panel displays "32.126" if the driver board version is V32.126-L01.06.

Press STOP RES, and it displays the minor version L01.06.

The method of viewing FA-06 is similar to that of FA-05.

Param.	Name	Range	Default	Unit	Property
FA-07	Heatsink temperature	0 to 65535	0	℃	●

FA-07 displays the current temperature of the heatsink.

Normally, the heatsink temperature is below 40°C. When the heatsink temperature is too high, the system lowers the carrier frequency automatically to reduce heat. When the heatsink temperature rises to a certain value, the system reports the module overheat fault and stops running.

Param.	Name	Range	Default	Unit	Property
FA-08	Temporary version of the platform	0 to 65535	0	-	●
FA-09	Drive module software version	0 to 655.35	0	-	●
FA-10	Auxiliary DSP software version	0 to 65535	0	-	●

Param.	Name	Range	Default	Unit	Property
FA-11	Pre-torque current	0.0 to 999.9	0	%	●

FA-11 displays the percentage of pre-torque current out of the rated current (with positive/negative sign display, motor driving or regenerative state).

Param.	Name	Range	Default	Unit	Property
FA-12	Logic information	0 to 65535	0	-	●

Displays the elevator state.

As shown in the following figure, five LEDs are expressed as 1, 2, 3, 4, and 5 from the right to the 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:

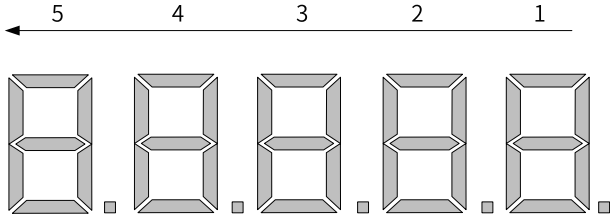


Figure 3-9 LED display

5		4		3	2	1	
Elevator status				Reserved	Reserved	Car state	
0	Inspection state	8	Elevator lock	Reserved	Reserved	0	Waiting state
1	Shaft auto-tuning	9	Idle elevator parking			1	Door open state
2	Micro-leveling	10	Low-speed re-leveling			2	Door open limit
3	Returning to Fire Emergency Floor	11	Rescue operation			3	Door close state
4	Fireman Operation	12	Motor Auto-tuning			4	Door close limit
5	Fault status	13	Keypad control			5	Running state
6	Attendant	14	Main floor verification			-	-
7	Automatic	15	VIP state			-	-

Param.	Name	Range	Default	Unit	Property
FA-13	Curve information	0 to 65535	0	-	●

FA-13 displays the system running curve information. As shown in the following table, LEDs 1 and 2 indicate the timing information and LEDs 4 and 5 curve information.

5	4	3	2	1
Curve information		No display	Timing information	
0	Standby state	-	0	Stop state
1	Startup speed stage		1	Shorting door lock circuit relay output
02, 03	Acceleration start segment		2	Output of shorting motor stator and RUN contactors
4	Linear acceleration segment		3	Zero-speed torque current holding
05, 06, 07	Acceleration end segment		4	Brake contactor output
8	Steady-speed running segment		5	Curve running
09, 10, 11	Deceleration start segment		6	Stop zero-speed
12	Linear deceleration segment		7	Brake contactor OFF
13, 14	Deceleration end segment		8	Stop timing
15	Curve stop		-	-

Param.	Name	Range	Default	Unit	Property
FA-14	Speed reference	0.000 to 65.535	0	m/s	●
FA-15	Feedback speed	0.000 to 65.535	0	m/s	●
FA-16	Bus voltage	0 to 6553.5	0	V	●
FA-17	Current position	0.00 to 6553.5	0	m	●
FA-18	Output current	0 to 6553.5	0	A	●
FA-19	Output frequency	0.00 to 655.35	0	Hz	●
FA-20	Torque current	0 to 999.9	0	A	●
FA-21	Output voltage	0 to 6553.5	0	V	●
FA-22	Output torque	0 to 999.9	0	%	●
FA-23	Output power	0.00 to 99.99	0	kW	●

FA-14 to FA-23 display the current performance state of the system (the output torque and output power support positive/negative sign display).

Param.	Name	Range	Default	Unit	Property
FA-24	Communication interference	0 to 65535	0	-	●

FA-24 displays the current quality of different system communication types, as described in the following table.

5		4		3		2		1	
Inverter SPI communication quality		Rectifier SPI communication quality		CAN2 communication quality		MOD communication quality		CAN1 communication quality	
0	High	0	High	0	High	0	High	0	High
↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
9	Interrupted completely	9	Interrupted completely	9	Interrupted completely	9	Interrupted completely	9	Interrupted completely

0 to 9 indicates the communication quality, where a larger value indicates stronger interference and lower communication quality.

Param.	Name	Range	Default	Unit	Property
FA-25	Eliminate encoder interference	0 to 65535	0	-	●
FA-26	Input state 1	0 to 65535	0	-	●
FA-27	Input state 2	0 to 65535	0	-	●
FA-28	Input state 3	0 to 65535	0	-	●
FA-29	Input state 4	0 to 65535	0	-	●
FA-30	Input state 5	0 to 65535	0	-	●
FA-31	Output state 1	0 to 65535	0	-	●
FA-32	Output state 2	0 to 65535	0	-	●

FA-26 to FA-32 display the system input and output states.

- Description of FA-26 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 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.

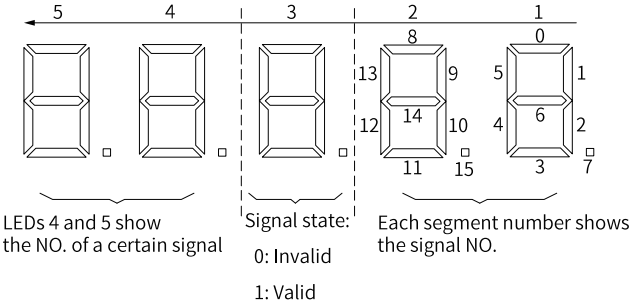


Figure 3-10 FA-26 input state 1 display

No.	Description	No.	Description
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

The system input and output states are displayed:

According to the following figure, 5, 4 and 3 indicate that signal 10 (Inspection down) is 1 (Active); Also, 1 and 2 indicate that besides signal 10, signals 4 (Safety circuit feedback), 5 (Door lock circuit feedback), 6 (RUN contactor feedback), 7 (Brake contactor feedback), and 8 (Inspection signal) are active.

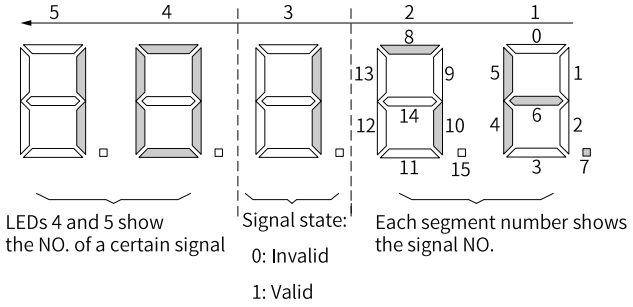


Figure 3-11 Example of FA-26 input state

No.	Description	No.	Description
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

- Description of FA-27 input state 2 display

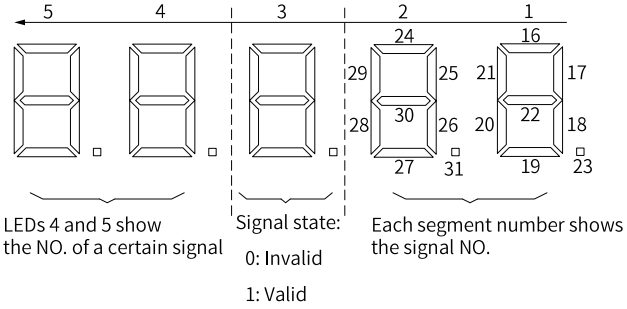


Figure 3-12 FA-27 input state 2 display

No.	Description	No.	Description
16	Up slow-down 1 signal	24	Door operator 1 light curtain
17	Down slow-down 1 signal	25	Door operator 2 light curtain
18	Up slow-down 2 signal	26	Brake travel switch 1 feedback
19	Down slow-down 2 signal	27	Emergency evacuation input
20	Up slow-down 3 signal	28	Elevator lock input
21	Down slow-down 3 signal	29	Safety circuit 2 feedback
22	Shorting door lock circuit relay output feedback	30	Shorting PMSM stator feedback
23	Firefighter operation signal	31	Door lock circuit 2 feedback

- Description of FA-28 input state 3 display

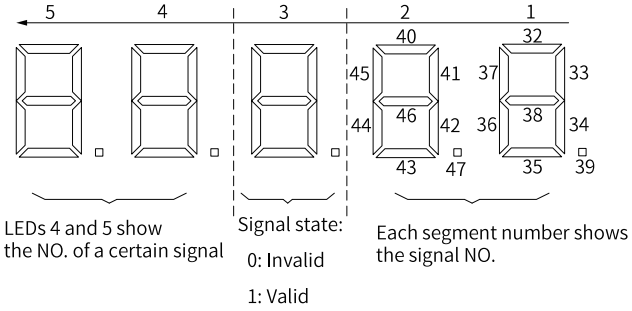


Figure 3-13 FA-28 input state 3 display

No.	Description	No.	Description
32	Reserved	40	Fire emergency floor switchover signal
33	Door 1 safety edge signal	41	Dummy floor input
34	Door 2 safety edge signal	42	Reserved
35	Motor overtemperature input	43	Reserved
36	Earthquake signal input	44	Door 1 open signal
37	Rear door forbidden signal	45	Door 2 open signal
38	Light-load	46	Brake travel switch 2 feedback
39	Half-load	47	External fault signal

- Description of FA-29 input state 4 display

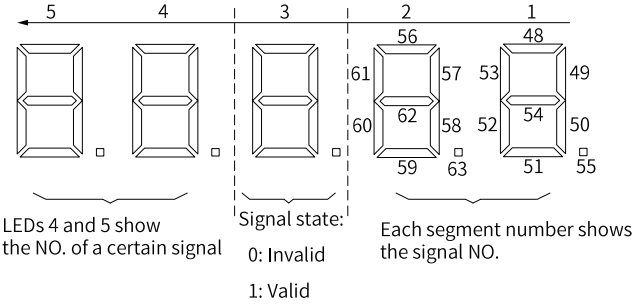


Figure 3-14 FA-29 input state 4 display

No.	Description	No.	Description
48	Terminal floor signal	56	Reserved
49	Door lock shorting signal	57	Reserved
50	Reserved	58	Reserved
51	Reserved	59	Reserved
52	Reserved	60	Reserved

No.	Description	No.	Description
53	Reserved	61	Reserved
54	Reserved	62	Reserved
55	Reserved	63	Reserved

- Description of FA-30 input state 5 display

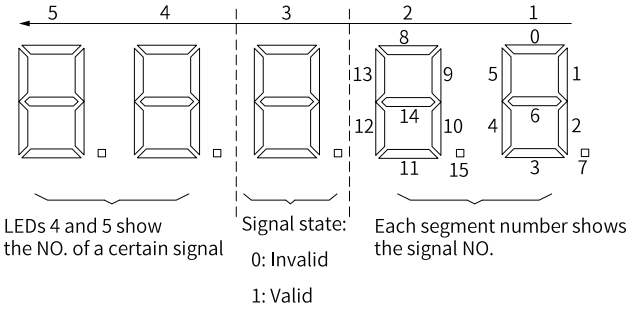


Figure 3-15 FA-30 input state 5

No.	Description	No.	Description
0	Reserved	8	Reserved
1	Reserved	9	Reserved
2	Reserved	10	Reserved
3	Reserved	11	Reserved
4	High-voltage safety circuit	12	Reserved
5	High-voltage door lock 1 signal	13	Reserved
6	High-voltage door lock 2 signal	14	Reserved
7	High-voltage door lock shorting	15	Reserved

- Description of FA-31 output state 1 display

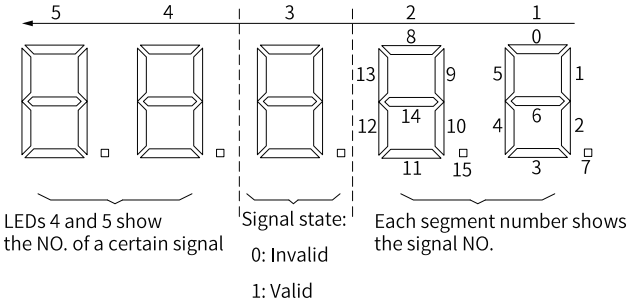


Figure 3-16 FA-31 input state 1

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 above level 3
3	Shorting door lock circuit relay output	11	Running state
4	Fire emergency floor arrival signal feedback	12	Shorting motor stator contactor
5	Door open by door operator 1	13	Emergency evacuation output at power failure
6	Door close by door operator 1	14	System healthy
7	Door open by door operator 2	15	Buzzer tweet

- Description of FA-32 output state 2 display

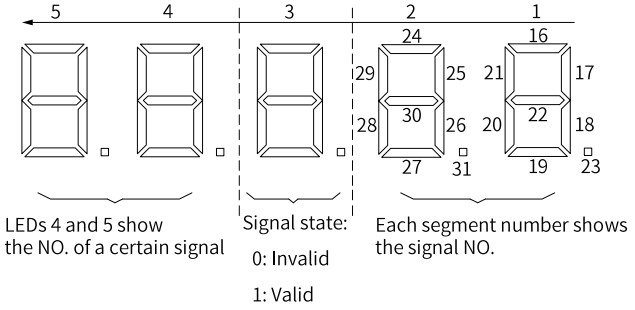


Figure 3-17 FA-32 input state 2

No.	Description	No.	Description
16	Pull-in voltage startup of brake	24	Reserved
17	UP running signal	25	Reserved
18	Lamp/Fan running	26	Reserved
19	Medical sterilization output	27	Reserved
20	Non-door zone stop	28	Reserved
21	Electric lock	29	Reserved
22	Non-service state	30	Reserved
23	Emergency rescue finished	31	Reserved

Param.	Name	Range	Default	Unit	Property
FA-33	Car input state	0 to 65535	0	-	●
FA-34	Car output state	0 to 65535	0	-	●

FA-33 and FA-34 are used to display the car input and output states. Their operating instructions are the same as the MCB input and output display.

- Description of FA-33 car input display

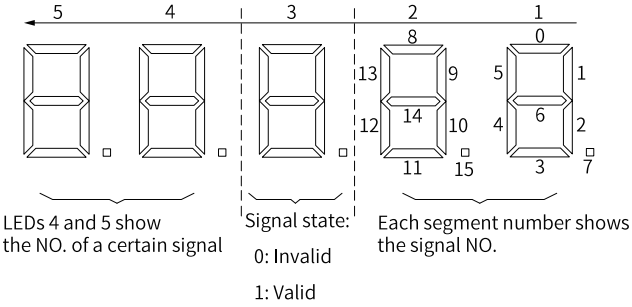


Figure 3-18 FA-33 car input state

No.	Description	No.	Description
0	Reserved	8	Overload input
1	Door 1 light curtain	9	Light-load signal
2	Door 2 light curtain	10	Up leveling communication signal
3	Door 1 open limit	11	Down leveling communication signal
4	Door 2 open limit	12	Reserved
5	Door 1 close limit	13	Inspection signal
6	Door 2 close limit	14	Up signal input
7	Full-load input	15	Down signal input

- Description of FA-34 car output display

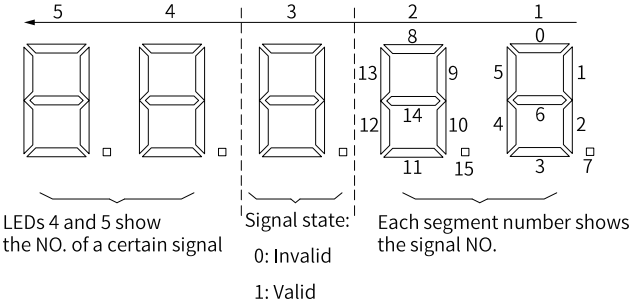


Figure 3-19 FA-34 car output state

No.	Description	No.	Description
0	Reserved	8	Down arrival gong
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 gong	15	Reserved

Param.	Name	Range	Default	Unit	Property
FA-35	Hall call state	0 to 65535	0	-	●
FA-36	System state 1	0 to 65535	0	-	●
FA-37	System state 2	0 to 65535	0	-	●

These parameters are used to display the hall and system states. Their operating instructions are the same as the MCB input and output display.

- Description of FA-35 hall state display

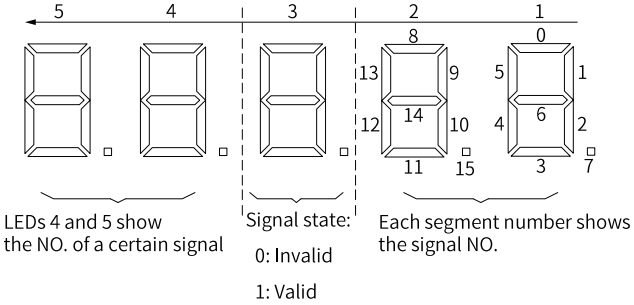


Figure 3-20 FA-35 hall state

No.	Description	No.	Description
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	Security signal	13	Reserved
6	Door close button input	14	Reserved
7	Reserved	15	Reserved

- Description of FA-36 system state 1 display

Table 3–2 FA-36 system state 1

No.	Description	No.	Description
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

- Description of FA-37 system state 2 display

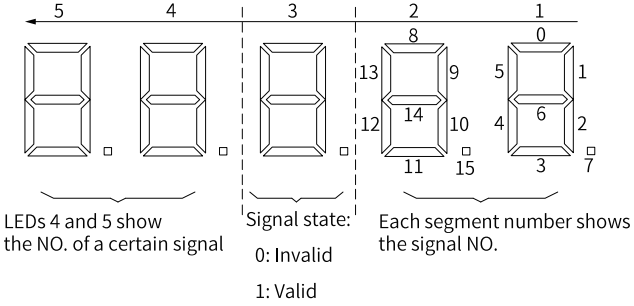


Figure 3-21 FA-37 system state 2 display

No.	Description	No.	Description
0	Up direction display	8	Reserved
1	Down direction display	9	Reserved
2	Running 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

Param.	Name	Range	Default	Unit	Property
FA-38	Maximum floor running time interval	0 to 200	0	s	●

This parameter indicates time required for the elevator to run from the bottom floor to the top floor at normal speed. The smaller value of FA-38 + 10s and F9-02 is the reference

time for motor running protection. If the leveling signal does not change within the reference time in running, the system reports the fault E30 and the elevator stops running.

Param.	Name	Range	Default	Unit	Property
FA-46	HCB communication state 1	0 to 65535	0	-	●
FA-47	HCB communication state 2	0 to 65535	0	-	●
FA-48	HCB communication state 3	0 to 65535	0	-	●
FA-50	HCB and expansion board communication state 1	0 to 65535	0	-	●
FA-51	HCB and expansion board communication state 2	0 to 65535	0	-	●
FA-52	HCB and expansion board communication state 3	0 to 65535	0	-	●

These parameters display the communication state between HCBs of all floors and the MCB.

Parameters FA-46 to FA-48 display the communication state between the control board Modbus interface and the HCB.

Parameters FA-50 to FA-52 display the communication state between the machine room expansion board and the HCB. The expansion board Modbus interface can be connected to the rear door HCB of the through-type door.

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.

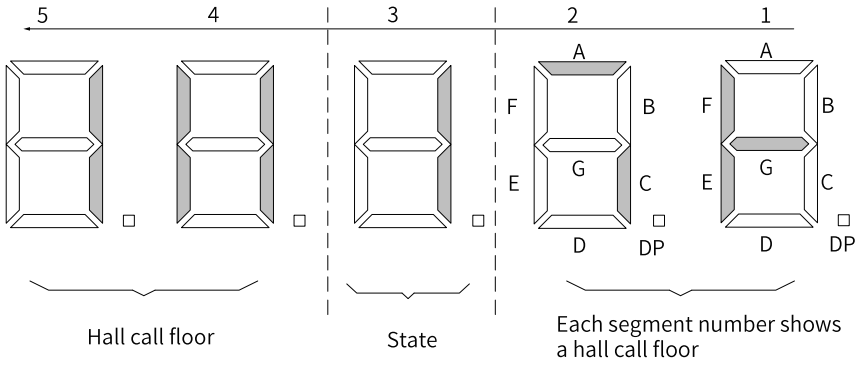


Figure 3-22 Hall call communication state

As shown in the preceding figure, LEDs 3 to 5 indicate hall call communication at floor 11 is normal. You can view hall calls at other floors by shifting LEDs 4 and 5 tubes. It can be seen from LEDs 1 and 2 that hall call communication at floors 5, 6, 7, 8, 9, and 11 is normal.

Param.	Name	Range	Default	Unit	Property
FA-54	Input state 6	0 to 65535	0	-	●
FA-55	Input state 7	0 to 65535	0	-	●

FA-54 and FA-55 are used together to display the signals of input state 6 and input state 7.

Example: To view I/O state display:

- Set FA-53 to 0. View FA-54 for function information from numbers 128 to 143. View FA-55 for function information from numbers 144 to 159.
- Set FA-53 to 1. View FA-54 for function information from numbers 192 to 207. View FA-55 for function information from numbers 208 to 223. If an input function is active, the corresponding LED will light up.

Param.	Name	Range	Default	Unit	Property
FA-56	Input state 3	bit0: AGV indication output bit1: Left brake output bit2: Right brake output bit3: Quick shorting motor stator output bit4: Auxiliary brake contactor 3 output bit7: Auxiliary shorting motor stator contactor output bit8: Overspeed protection in shorting stator braking mode	0	-	●
FA-57	Input state 4	0 to 65535	0	-	●

Param.	Name	Range	Default	Unit	Property
FA-58	Version display selection	0: Machine-room-less monitoring board version 1: Machine room expansion board version 2: Car expansion board version 3: ARD version 4: AFE master version 5: AFE slave version 6: Forced drive operation box version 7: SCB software version 8: SBC board version 9: MRL monitoring board (GB/T-2020) 10: Door operator 1 (integrated with car top box) 11: Door operator 2 12: Car top emergency power supply 110: Front door COB1 version 111: Front door COB2 version 112: Front door CCB1 version 113: Front door CCB2 version 120: Rear door COB1 version 121: Rear door COB2 version and so on 201: Pit inspection board version	0	-	☆
FA-59	Major software version	0 to 65535	0	-	●
FA-60	Temporary software version	0 to 65535	0	-	●
FA-61	Manufacturer software version	0 to 65535	0	-	●

FA-58 and FA-59 are used together to display the expansion board software version.

Example: To view the software version of machine room expansion board, do as follows:.

Set FA-58 to 1 and then view FA-59 to obtain the software version of machine room expansion board. See "FA-05" on FA-59 software version viewing method.

If you need to view COB and accessories, you should first enable F8-15 bit11 to obtain the system accessory versions, and then view the corresponding versions according to the above table.

Param.	Name	Range	Default	Unit	Property
FA-63	Inspection state monitoring	0 to 65535 bit0: CTB forced inspection signal bit1: Pit forced inspection signal bit2: Forced door lock bypass bit3: Shaft auto-tuning not performed bit4: Reserved bit13: Forced inspection for braking force detection bit14: Inspection running allowed during emergency evacuation	0	-	●

3.2.13Group FB: Door function parameters

Param.	Name	Range	Default	Unit	Property
Fb-00	Quantity of door operator(s)	1 to 2	1	-	★

Fb-00 is used to set the number of door operator(s).

Set it to 1 if there is only one door, and 2 if there are double doors.

Param.	Name	Range	Default	Unit	Property
Fb-01	CTB software version	0.00 to 655.35	0	-	●

When the controller is connected to the CTB, this parameter displays the CTB software version. See "FA-05" for Fb-01 software version viewing method.

Param.	Name	Range	Default	Unit	Property
Fb-02	Service floor 1 of door operator 1	0 to 65535	65535	-	☆
Fb-03	Service floor 2 of door operator 1	0 to 65535	65535	-	☆
Fb-18	Service floor 3 of door operator 1	0 to 65535	65535	-	☆
Fb-04	Service floor 1 of door operator 2	0 to 65535	65535	-	☆
Fb-05	Service floor 2 of door operator 2	0 to 65535	65535	-	☆
Fb-19	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 machine service floors is the same as that of service floors in F6-05.

Param.	Name	Range	Default	Unit	Property
Fb-06	Door open protection time	5 to 99	10	s	☆
Fb-07	Arrival gong output delay	0 to 10.00	0.00	ms	☆
Fb-08	Door close protection time	5 to 99	15	s	☆

Fb-06 is used to set the door open protection time.

After outputting the door open command, if the system does not receive the door open limit signal after the time set in this parameter, the system re-opens the door. When the door open/close times reach the value set in Fb-09, the system reports fault E48.

Fb-07 is used to set the arrival gong output delay.

When the value of this parameter is larger than 10 and the car display is switched over to the destination floor, the system outputs the arrival gong after the time set in this parameter. If the value is smaller than 10, the system outputs the arrival gong at stop.

Fb-08 is used to set the door close protection time.

After outputting the door close command, if the system does not receive the door close limit signal after the time set in this parameter, the system re-closes the door. When the door open/close times reach the value set in Fb-09, the system reports fault E49.

Param.	Name	Range	Default	Unit	Property
Fb-09	Door open/close protection times	0 to 20	0	-	☆
Fb-10	Door state of standby elevator	0 to 2	0	-	☆

Fb-09 is used to set the door re-open/re-close times allowed when door open/close is abnormal.

Fb-10 is used to set the door state when the elevator is in stop and waiting state. The possible values to be set:

0: Closing the door as normal at main floor

1: Waiting with door open at main floor

2: Waiting with door open at each floor

Param.	Name	Range	Default	Unit	Property
Fb-11	Door open holding delay upon arrival for hall call	1 to 1000	5	s	☆
Fb-12	Door open holding delay upon arrival for car call	1 to 1000	3	s	☆
Fb-13	Door open holding time at main floor	1 to 1000	10	s	☆
Fb-14	Duration of door open holding delay	10 to 1000	30	s	☆

Fb-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.

Fb-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.

Fb-13 is used to set the door open holding time after the elevator arrives at the base floor. The elevator closes the door immediately after receiving a door close command.

Fb-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.

Param.	Name	Range	Default	Unit	Property
Fb-15	special door open holding time	10 to 1000	30	s	☆
Fb-16	Manually operated door lock waiting time	1 to 60	5	s	☆
Fb-17	Holding time for forced door close	5 to 180	120	s	☆

Fb-15 is used to set the door open holding time when there is a disability call.

FB-16 is used to set the door open limit delay in the case of manual door. This parameter is valid when the manually operated door function is used.

FB-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.

Param.	Name	Range	Default	Unit	Property
Fb-20	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 reconnection.

Param.	Name	Range	Default	Unit	Property
Fb-23	Major version of the platform	0.00 to 655.35	0	-	●

Fb-23 represents the software version of the platform.

Param.	Name	Range	Default	Unit	Property
Fb-24	UCMP software version	0 to 65535	1	-	●

Fb-24 is the program version of the UCMP test program module.

Param.	Name	Range	Default	Unit	Property
Fb-27	Door open duration at fault occurrence	0 to 60000	60	s	☆
Fb-28	Door open/close protection time at fault occurrence	0 to 60000	60	s	☆
Fb-29	Rescue exit time after evacuation and door close limit	3 to 999	15	s	☆
Fb-30	Power-on duration for UPS evacuation	0 to 600	10	s	☆
Fb-31	Automatic door open time under special conditions	0 to 600	20	s	☆
Fb-32	Protection time for forced door close	0 to 600	20	s	☆
Fb-33	Warning time for door close	0 to 1000	0	s	☆
Fb-34	Door open delay trigger time	0 to 10	2	s	☆
Fb-35	VIP exit delay	0.00 to 600.00	30.00	s	☆

3.2.14Group FC: Protection Function Parameters

Param.	Name	Range	Default	Unit	Property
FC-00	Program control selection	0 to 65535	0	-	★

These parameters are used for program control selection.

“1” indicates that the function is enabled

“0” indicates that the function is disabled

The functions defined by the bits are described in the following table.

FC-00 function selection			
bit	Function definition	Description	Default
bit0	Detection of short circuit to ground at power-on	Whether the motor is short-circuited to ground is detected at power-on. If the motor is short-circuited to ground, the controller blocks the output immediately, and reports the fault.	0
bit1	Disabling overcurrent detection at inspection startup	-	0
bit2	Decelerating to stop at valid light curtain	During normal-speed running, the elevator decelerates to stop immediately after the light curtain acts, and then runs to the registered destination floor after the light curtain restores to former state. This function is mainly used for manually operated door.	0
bit9	Mode without door open/close limit signal	In this mode, the system automatically judges the door open/close limit without door open/close limit signal. It determines that the door open limit is reached 3s after the door open signal output and the door close limit is reached 3s after the door close signal output.	0

Param.	Name	Range	Default	Unit	Property
FC-01	Function selection	0 to 65535	65	-	★

These parameters are used for program control selection.

"1" indicates that the function is enabled

"0" indicates that the function is disabled

The functions defined by the bits are described in the following table.

FC-01 Function selection			
bit	Function definition	Description	Default
bit0	Overload protection	0: Motor overload detection enabled 1: Motor overload detection disabled	1
bit1	Canceling output phase loss protection	It cancels fault protection at output phase loss	0
bit2	Overmodulation function selection	-	0

FC-01 Function selection			
bit	Function definition	Description	Default
bit4	Light curtain judgment upon door close limit	At door close limit, the door re-opens if the light curtain is valid.	0
bit5	Canceling SPI communication detection	It cancels wire breakage detection on SPI communication between the MCB and the driver board	0
bit14	Canceling input phase loss protection	Canceling input phase loss protection	0

Param.	Name	Range	Default	Unit	Property
FC-02	Overload protection coefficient	0.50 to 10.00	1.00	-	★
FC-03	Overload pre-warning coefficient	50 to 100	80	%	★

The FC-02 reference quantity is motor overload current. After detecting that the output current reaches the value (FC-02 x Rated motor current) and the duration lasts the time specified in the inverse time lag curve, the controller outputs fault E11 indicating motor overload.

The FC-03 reference quantity is motor overload current. After detecting that the output current exceeds the value (FC-03 x Rated motor current) and the duration lasts the time specified in the inverse time lag curve, the controller outputs a pre-warning signal.

Param.	Name	Range	Default	Unit	Property
FC-04	Through-type door control mode	0 to 3	0	-	★

FC-04 is used to set the through-type door control mode. The possible values to be set:

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

Param.	Name	Range	Default	Unit	Property
FC-11	11th fault	0 to 9999	0	-	●
FC-12	11th fault subcode	0 to 65535	0	-	●
FC-13	Month and day upon 11th fault	0 to 12.31	0	MM.DD	●

Param.	Name	Range	Default	Unit	Property
FC-14	Hour and minute upon 11th fault	0.00 to 23.59	0	HH.MM	●
FC-15	12th fault	0 to 9999	0	-	●
FC-16	12th fault subcode	0 to 65535	0	-	●
FC-17	Month and day upon 12th fault	0 to 1231	0	MM.DD	●
FC-18	Hour and minute upon 12th fault	0.00 to 23.59	0	HH.MM	●
…					
FC-207	60th fault	0 to 9999	0	-	●
FC-208	60th fault subcode	0 to 65535	0	-	●
FC-209	Month and day upon the 60th fault	0 to 1231	0	MM.DD	●
FC-210	Hour and minute upon the 60th fault	0.00 to 23.59	0	HH.MM	●

If the storage space for 10 detailed fault records is full, the earliest detailed fault record will be moved to the most recent entry in the brief fault record storage area. For example, if a new fault occurs, the fault code, subcode and time information of the first fault recorded in group E9 (fault information) will be moved to location from FC-11 to FC-14.

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.

3.2.15Group FD: Communication parameters

Param.	Name	Range	Default	Unit	Property
FD-00	Baud rate setting	0: 9600 1: 38400	1	-	☆
FD-02	Local address	0 to 127 (0: broadcast address)	1	-	☆
FD-03	Communication response delay	0 to 20	0	ms	☆

These parameters are used to configure the RS232 serial communication settings for the NICE3000^{new} controller, enabling communication with host computer monitoring software.

- FD-00 specifies the baud rate for serial communication.

- FD-02 specifies the address of the controller. For successful and normal communication between the controller and the serial port with which it communicates, these two parameters must be consistently configured.
- FD-03 specifies the delay for the controller to send data by means of the serial port.

Param.	Name	Range	De fault	Unit	Prop erty
FD-07	HCB-JP1 input selection	NO (0)/NC (0): Reserved NO (1)/NC (33): Elevator lock NO (2)/NC (34): Fire emergency NO (3)/NC (35): Current floor forbidden NO (4)/NC (36): VIP signal NO (5)/NC (37): Security signal NO (6)/NC (38): Door close button NO (7)/NC (39): Fire emergency floor 2 NO (8)/NC (40): Delayed door close signal	1	-	★
FD-08	HCB-JP2 input		2	-	★

FD-07 and FD-08 are the input parameters of pins 2 and 3 of JP1 and JP2 on the HCB. The setting is effective to the HCBs for all floors.

Param.	Name	Range	De fault	Unit	Prop erty
FD-09	HCB-JP1 output selection	0: Reserved 2: Down arrival indicator 1: Up arrival indicator 3: Fault 4: Non-door zone stop 5: Non-service state 6: Door close button indicator 7: Interface output 9: Door close delay signal output	1	-	★
FD-10	HCB-JP2 output		2	-	★

FD-09 and FD-10 are the output parameters of pins 1 and 4 of JP1 and JP2 on the HCB. The setting is effective to the HCBs for all floors.

Param.	Name	Range	Default	Unit	Property
FD-11	Expansion board 1: X1 input	NO (0)/NC (0): Reserved NO (1)/NC (33): Fire emergency NO (2)/NC (34): Overload NO (3)/NC (35): Full load NO (4)/NC (36): Firefighter NO (5)/NC (37): Door 1 light curtain NO (6)/NC (38): Door 2 light curtain NO (7)/NC (39): Brake travel switch 1 feedback NO (8)/NC (40): Emergency evacuation at power failure NO (9)/NC (41): Elevator lock NO (10)/NC (42): Safety circuit NO (11)/NC (43): Shorting motor stator contactor feedback NO (12)/NC (44): Door lock circuit NO (13)/NC (45): Door 1 safety edge NO (14)/NC (46): Door 2 safety edge NO (15)/NC (47): Motor overtemperature NO (16)/NC (48): Earthquake NO (17)/NC (49): Rear door forbidden NO (18)/NC (50): Light load NO (19)/NC (51): Half load NO (20)/NC (52): Fire emergency floor switchover NO (21)/NC (53): Dummy floor NO (22)/NC (54): Door 1 open NO (23)/NC (55): Door 2 open NO (24)/NC (56): Brake travel switch 2 feedback NO (25)/NC (57): External fault NO (26)/NC (58): Terminal floor signal NO (27)/NC (59): Door 1/2 selection NO (28), NC (60): Single/double door selection	0	-	★
FD-12	Expansion board 1: X2 input		0	-	★
FD-13	Expansion board 1: X3 input		0	-	★
FD-14	Expansion board 1: X4 input		0	-	★
FD-15	Expansion board 1: X5 input		0	-	★
FD-16	Expansion board 1: X6 input		0	-	★
FD-17	Expansion board 1: X7 input		0	-	★
FD-18	Expansion board 1: X8 input		0	-	★
FD-19	Expansion board 1: X9 input		0	-	★
FD-20	Expansion board 1: X10 input		0	-	★
FD-21	Expansion board 2: X1 input		0	-	★
FD-22	Expansion board 2: X2 input		0	-	★
FD-23	Expansion board 2: X3 input		0	-	★
FD-24	Expansion board 2: X4 input		0	-	★
FD-25	Expansion board 2: X5 input		0	-	★
FD-26	Expansion board 2: X6 input		0	-	★
FD-27	Expansion board 2: X7 input		0	-	★
FD-28	Expansion board 2: X8 input		0	-	★
FD-29	Expansion board 2: X9 input		0	-	★
FD-30	Expansion board 2: X10 input		0	-	★

These parameters are used to set the functions of input terminal X on the expansion card. The NICE3000^{new}system supports up to two expansion cards that are used to expand the input terminal functions in the control cabinet or on the car.

Param.	Name	Range	Default	Unit	Property
FD-31	Expansion board 1: Y1 output	0: Reserved 1: Door open by door operator 1 2: Door close by door operator 1 3: Door open by door operator 2 4: Door close by door operator 2 5: Brake and RUN contactors healthy (no E36 or E37) 6: Fault state (output for level 3/4/5 faults) 7: NICE3000^{new} operation state monitoring 8: Shorting motor stator contactor 9: Controller healthy 10: Emergency evacuation buzzer 11: Brake pick voltage 12: Up running 13: Lighting and fan 14: Medical sterilization 15: Non-door zone stop 16: Electromagnetic lock of the manually operated door 17: Non-service state 18: Emergency evacuation completed 19: Fire emergency output 20: Emergency state at power failure 21: Door lock active 22: Night output signal 23: Alarm filtered output	0	-	★
FD-32	Expansion board 1: Y2 output		0	-	★
FD-33	Expansion board 1: Y3 output		0	-	★
FD-34	Expansion board 1: Y4 output		0	-	★
FD-35	Expansion board 1: Y5 output		0	-	★
FD-36	Expansion board 1: Y6 output		0	-	★
FD-37	Expansion board 1: Y7 output		0	-	★
FD-38	Expansion board 1: Y8 output		0	-	★
FD-39	Expansion board 1: Y9 output		0	-	★
FD-40	Expansion board 1: Y10 output		0	-	★
FD-41	Expansion board 2: Y1 output		0	-	★
FD-42	Expansion board 2: Y2 output		0	-	★
FD-43	Expansion board 2: Y3 output		0	-	★
FD-44	Expansion board 2: Y4 output		0	-	★
FD-45	Expansion board 2: Y5 output		0	-	★
FD-46	Expansion board 2: Y6 output		0	-	★
FD-47	Expansion board 2: Y7 output		0	-	★
FD-48	Expansion board 2: Y8 output		0	-	★
FD-49	Expansion board 2: Y9 output		0	-	★
FD-50	Expansion board 2: Y10 output		0	-	★

These parameters are used to set the functions of 10 relay outputs on MCTC-KZ-G1. The system supports up to two I/O expansion cards with up to 20 output terminals.

3.2.16Group FE: Display Setting Parameters

Param.	Name	Range	Default	Unit	Property
FE-00	Collective selective mode	0 to 2	0	-	★

FE-00 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.
- 2: Up collective selective: The elevator only responds to up hall calls.

Param.	Name	Range	Default	Unit	Property
FE-01	Floor 1 display	00: "0" 22: "23" 01: "1" 23: "C" 02: "2" 24: "D" 03: "3" 25: "E" 04: "4" 26: "F" 05: "5" 27: "I" 06: "6" 28: "J" 07: "7" 29: "K" 08: "8" 30: "N" 09: "9" 31: "O" 10: "A" 32: "Q" 11: "B" 33: "S" 12: "G" 34: "T" 13: "H" 35: "U" 14: "L" 36: "V" 15: "M" 37: "W" 16: "P" 38: "X" 17: "R" 39: "Y" 18: "-" 40: "Z" 19: No display 41: "15" 20: "12" 42: "17" 21: "13" 43: "19"	1901	-	☆
FE-02	Floor 2 display		1902	-	☆
FE-03	Floor 3 display		1903	-	☆
FE-04	Floor 4 display		1904	-	☆
FE-05	Floor 5 display		1905	-	☆
FE-06	Floor 6 display		1906	-	☆
FE-07	Floor 7 display		1907	-	☆
FE-08	Floor 8 display		1908	-	☆
FE-09	Floor 9 display		1909	-	☆
FE-10	Floor 10 display		0100	-	☆
Floor 11 to floor 30 display			…		
FE-31	Floor 31 display		0301	-	☆
FE-35	Floor 32 display		0302	-	☆
FE-36	Floor 33 display		0303	-	☆
FE-37	Floor 34 display		0304	-	☆
FE-38	Floor 35 display		0305	-	☆
FE-39	Floor 36 display		0306	-	☆
FE-40	Floor 37 display		0307	-	☆
FE-41	Floor 38 display		0308	-	☆
FE-42	Floor 39 display		0309	-	☆
FE-43	Floor 40 display		0400	-	☆
Floor 41 to floor 46 display			…		
FE-50	Floor 47 display		0407	-	☆
FE-51	Floor 48 display		0408	-	☆

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 position of the floor number, and the two low bits indicate the display code of ones position.

Param.	Name	Range	Default	Unit	Property
FE-52	Most significant bit selection 1	0 to 5699	0	-	☆
FE-53	Most significant bit selection 2		0	-	☆
FE-54	Most significant bit selection 3		0	-	☆
FE-55	Most significant bit selection 4		0	-	☆
FE-56	Most significant bit selection 5		0	-	☆

FE-52 to FE-56 are used to set the special display of floor numbers.

When the 2-digit floor display cannot meet your requirements, add the third digit display by setting the most significant bit selection.

Set the floor address that requires a special display in two high digits and the display content in two low digits.

For example, if you want floor 18 to be displayed as "17A", do as follows: 1. Set FE-18 to 0710 (displays "7A"). 2. Set FE-65 to 1801, indicating that the highest digit display of floor 18 is "1".

Set F8-14 bit0 to 1. The system gets re-powered after power-off.

Param.	Name	Range	Default	Unit	Property
FE-32	Elevator function selection 1	0 to 65535	34816	-	☆

The parameter is used to set the functions required by a user.

Each function is controlled using one binary bit.

“1” indicates that the function is enabled

“0” indicates that the function is disabled

The functions defined by the binary bits of FE-32 are described in the following table.

FE-32 Elevator function selection 1			
bit	Function definition	Description	Default
bit0	Time-based floor service selection for front and rear door	To enable the function, see "5.5 Time-based Floor Service" on page 247.	0
bit2	Re-leveling	The elevator performs re-leveling at a low speed with door open. An external shorting door lock circuit contactor needs to be used together.	0
bit3	Advance door opening	When the elevator speed is smaller than a certain value and the door zone signal is active during normal operation, the system shorts the door lock circuit contactor and outputs the door open signal for advance door opening. This improves the elevator use efficiency.	0
bit4	Stuck hall call cancellation	The system automatically identifies the state of the hall call buttons. If the state is abnormal, the system cancels the stuck hall call.	0
bit5	Night security floor function	From 22:00 to 6:00, the elevator runs to the security floor first every time, stops and opens the door, and then runs to the destination floor.	0
bit6	Peak service for down collective selective	Enable the peak service for down collective selective mode.	0
bit7	Peak service for parallel/group control	Enable the peak service for parallel/group control mode.	0
bit8	Time-based service floor function	To enable the function, see "5.5 Time-based Floor Service" on page 247.	0
bit9	VIP function	The VIP function is used.	0
bit11	car call cancellation	A call can be deleted by pressing the button twice.	1
bit12	Hall call cancellation	-	0
bit13	Shorting stator braking mode switched over to controller drive evacuation when timeout occurs	-	0
bit15	Door lock short circuit detection	-	1

Param.	Name	Range	Default	Unit	Property
FE-33	Elevator function selection 2	0 to 65535	36	-	☆

The parameter is used to set the functions required by a user.

Each function is controlled using one binary bit.

"1" indicates that the function is enabled

"0" indicates that the function is disabled

The functions defined by the binary bits of FE-33 are described in the following table.

FE-33 Elevator function selection 2			
bit	Function definition	Description	Default
bit1	Door open holding upon door open limit	The system still outputs the door open command upon door open limit.	0
bit2	Door close command not output upon door close limit	The system stops outputting the door close command upon door close limit.	1
bit4	Automatic reset for stuck RUN and brake contactors	If the feedback of the RUN and brake contactors is abnormal, faults E36 and E37 are reported, and you need to manually reset the system. With this function, the system resets automatically after the fault disappears. A maximum of three auto reset times are supported.	0
bit5	Slow-down switch stuck detection	The system detects the state of slow-down switches. Once detecting that it is stuck, the system instructs the elevator to slow down immediately and reports a fault.	1
bit7	Forced door close	If the door still does not close within the time set in FB-17 in automatic state, the system outputs the forced door close signal. The light curtain becomes invalid and the buzzer tweets.	0
bit8	Self-locking contactor NC output	-	0
bit9	Immediate elevator stop upon re-leveling	-	0
bit13	High-speed protection function	A maximum allowable speed is set when the car is in the slow-down switch position. When the elevator exceeds the speed, the system outputs a protection signal.	0

FE-33 Elevator function selection 2			
bit	Function definition	Description	Default
bit14	Enable hall call door open delay	-	0
bit15	Independent control of through-type door	-	0

3.2.17Group FP: User Parameters

Param.	Name	Range	Default	Unit	Property
FP-00	User password	0 to 65535	0	-	☆

FP-00 is used to set the user password. 0 indicates no password.

The password prohibits unauthorized personnel from viewing and modifying parameters. When entering parameter setting the next time, you must enter the correct password to view and modify parameters. To remove the password, set FP-00 to 00000.

Remember the password that you set. If the password is set incorrectly or forgotten, contact the manufacturer to replace the control board.

Param.	Name	Range	Default	Unit	Property
FP-01	Parameter update	0: No update 1: Restore factory setting 2: Clear recorded information 3: Clearing shaft data	0	-	★

FP-01 is used to reset some system parameters.

The values are as follows:

0: No operation.

1: Restore factory settings. Choosing this value resets all system parameters (except group F1) to their factory settings. Use this function with caution.

2: Clear fault records. Fault records are cleared. FC-11 to FC210 and parameters in groups E0 to E9 are set to 0.

3: Clear shaft information: Floor pulse data in the shaft is cleared. Shaft pulses of F3-12 to F3-17 and group F4 are set to 0. The leveling adjustment parameters in group Fr are set to 30030. Shaft auto-tuning must be performed again after clearing.

Param.	Name	Range	Default	Unit	Property
FP-02	User parameter check	0: Disabled 1: Valid	0	-	★

FP-02 is used to view the parameters that are different from the default setting. When it is set to 1, you can view the parameters that are different from the default setting.

Param.	Name	Range	Default	Unit	Property
FP-03	Level 2 password	0 to 65535	0	-	☆
FP-04	Level 3 password	0 to 65535	0	-	☆
FP-05	Contract No. 2	0 to 65535	0	-	★
FP-06	Contract No. 1	0 to 65535	5555	-	★

FP-05 and FP-06 are used to set manufacturer contract No. Contract No. is used in the HCB or door operator software requiring contract No. check. If the contract No. check fails, the system cannot work properly.

3.2.18Group Fr: Leveling Adjustment Parameters

Param.	Name	Range	Default	Unit	Property
Fr-00	Leveling adjustment mode	0: Disabled 1: Car leveling adjustment enabled 2: Load cell auto-tuning	0	-	★

Fr-00 is used to set whether to enable the leveling adjustment function.

Param.	Name	Range	Default	Unit	Property
FR-01	Leveling adjustment record 1	00000 to 60060	30030	mm	★
Fr-02	Leveling adjustment record 2		30030	mm	★
. . .	. . .		. . .	. . .	. . .
Fr-24	Leveling adjustment record 24		30030	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.

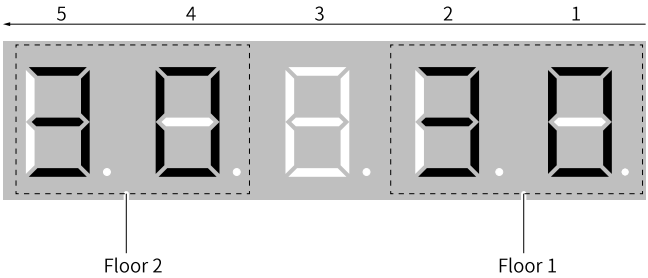


Figure 3-23 Viewing the leveling adjustment record

As shown in the preceding figure, the rightmost two LEDs and the leftmost two LEDs respectively show the adjustment base of floor 1 and floor 2. If the displayed value is greater than 30, upward leveling adjustment is performed. If the value is smaller than 30, downward leveling adjustment is performed. The default value "30" indicates that there is no leveling adjustment. Maximum adjustment range is ±30 mm.

The flowchart of single-floor leveling accuracy adjustment is shown in the following figure.

1. Ensure that shaft auto-tuning has been completed successfully, and the elevator runs properly at normal speed.
2. After you set Fr-00 to 1, the elevator shields hall calls, automatically runs to the top floor and keeps the door open after arrival. 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 is currently at the top floor, it directly keeps the door open.
3. Go into the car, press the top floor button once, and the leveling position is changed 1 mm upward; 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, you also need to press the top floor button and bottom floor button in the car at the same time to exit the leveling adjustment state. Otherwise, you 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, ensure to set Fr-00 to 0 to disable the leveling adjustment function for normal elevator use.

4 Parameter Application Types

4.1 Motor Auto-tuning Parameter Setting

Param.	Name	Description
F1-25	Motor type	0: Asynchronous motor 1: Synchronous motor
F1-00	Encoder type	0: Sin/Cos encoder 1: UVW encoder 2: ABZ encoder 3: Endat absolute encoder 4: Weton communication type encoder
F1-12	Encoder pulses per revolution	100 to 10000
F101 to F1-05	Rated motor power/voltage/current/frequency/speed	Model dependent, manually input
F0-01	Command source selection	0: Operating panel control 1: Distance control
F1-11	Auto-tuning mode	0: No operation 1: With-load auto-tuning 2: No-load auto-tuning 3: Shaft auto-tuning 1 4: Shaft auto-tuning 2 5: Synchronous motor static auto-tuning
F1-22	Auto-tuning function selection	F1-22 = 2: Semi-automatic angle-free auto-tuning Perform auto-tuning at first-time running after power-off and power-on again, only in the inspection or EEO state. F1-22 = 6: Automatic angle-free auto-tuning Perform auto-tuning at first-time running after power-off and power-on again (without differentiating elevator states).

4.1.1 Synchronous Motor Auto-tuning

1. Synchronous motor with-load auto-tuning (traction machine connected with car)

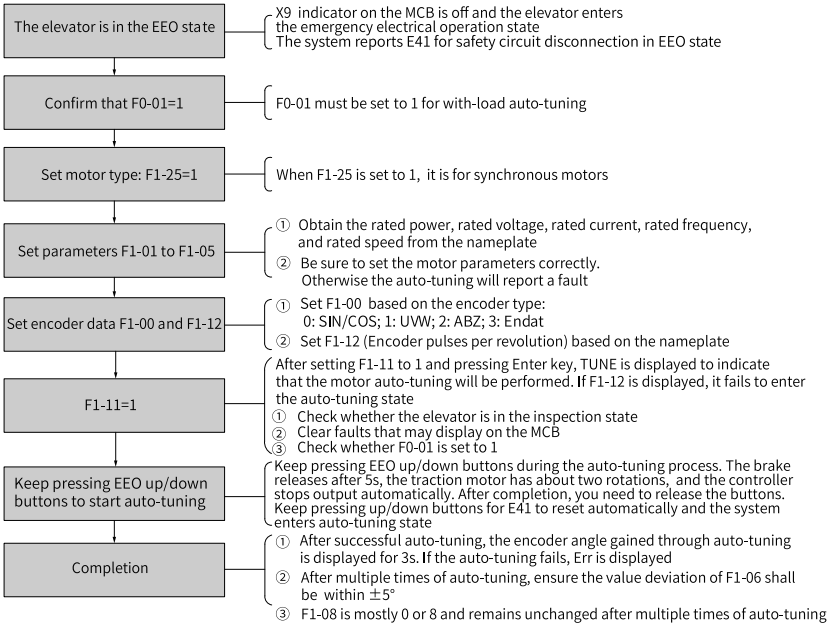


Figure 4-1 Synchronous Motor With-load Auto-tuning

2. Synchronous Motor Static Auto-tuning (with Motor Driving Car, Brake Not Released and Motor Not Rotating)

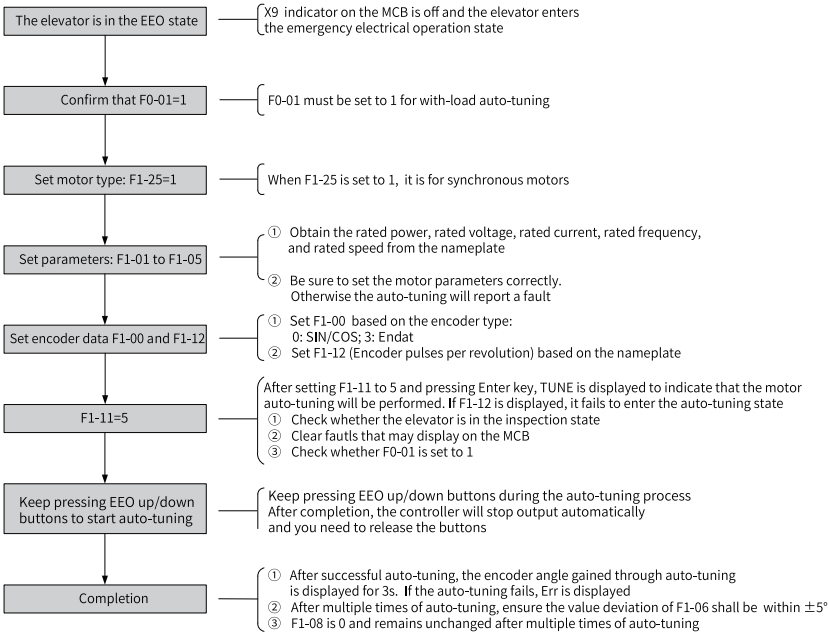


Figure 4-2 Synchronous Motor Static Auto-tuning

Note

- Static auto-tuning only supports the sin-cos encoder and absolute encoder of the synchronous motor. Also, ensure that the output power line phase sequence of the integrated controller is consistent with that of the encoder.
- Set F1-08 to 0 during auto-tuning. If the actual phase sequence of the encoder is 8, you need to set F1-24 bit6 to 1 and set F1-08 to 0.
- In no-load auto-tuning, you must manually open the brake. The system does not output brake control.
- If the E20 fault is reported after the brake is released, set F8-01 to 0 and perform auto-tuning again. After the auto-tuning is completed, restore the original setting. The system reports E41 if the safety circuit is disconnected during emergency electrical operation. If the up and down running buttons are pressed continuously, E41 will be automatically reset, and the system will enter the tuning state.

3. Semi-automatic angle-free auto-tuning of synchronous motor

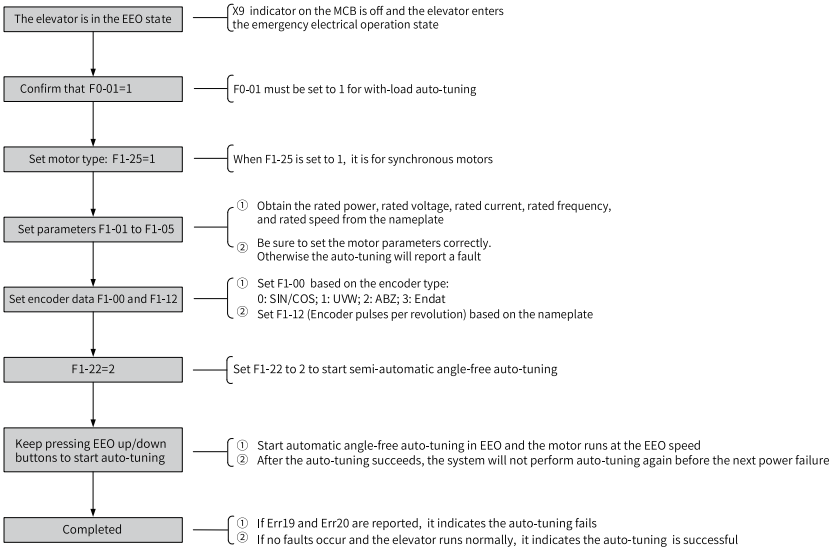


Figure 4-3 Semi-automatic angle-free auto-tuning of synchronous motor

4. Automatic angle-free auto-tuning

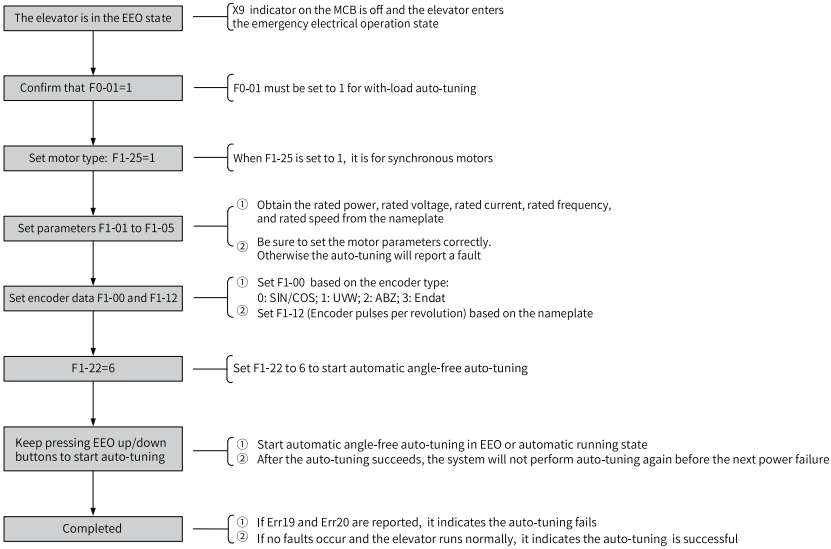


Figure 4-4 Automatic angle-free auto-tuning of synchronous motor

5. e. Synchronous motor no-load auto-tuning (motor disconnected from car)

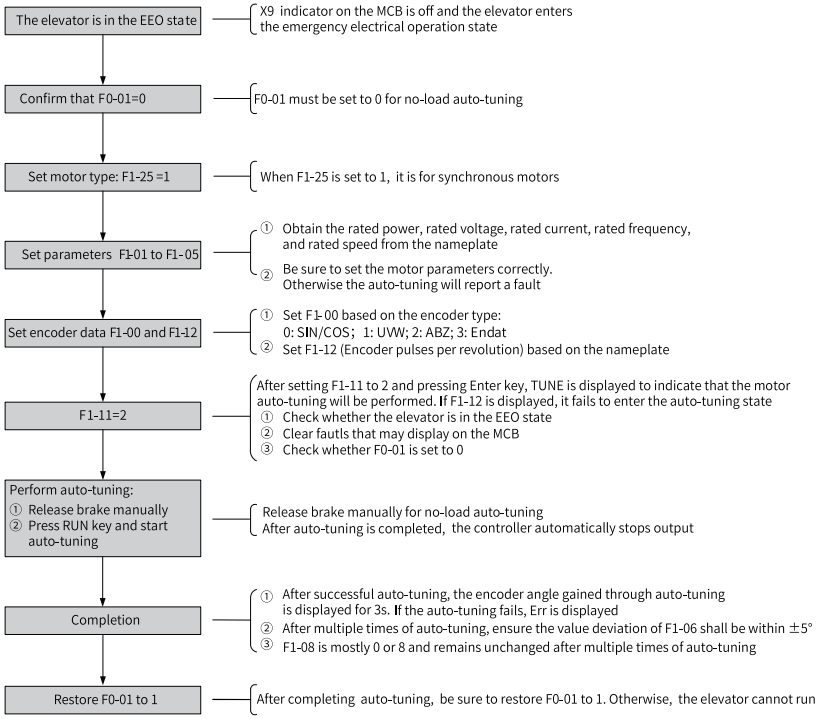


Figure 4-5 Synchronous Motor No-load Auto-tuning

CAUTION

Synchronous motor auto-tuning:

- Synchronous motor auto-tuning obtains motor initial pole angle, encoder initial angle, motor wiring mode, and inductances in d-q axis.
- Perform three or more times of auto-tuning. Compare the obtained values of F1-06 (Encoder initial angle), and ensure a difference of within ±5°.
- Each time the encoder, encoder cable connection or motor wiring sequence as well as rated motor current, frequency and speed is changed, perform motor auto-tuning again.
- You can modify F1-06 manually. The modification takes effect immediately. After replacing the MCB, therefore, you can directly run the controller by manually setting F1-06 to the previous value, without performing motor auto-tuning.

4.1.2 Asynchronous Motor Auto-tuning

1. Asynchronous motor with-load auto-tuning (motor driving the car supported)

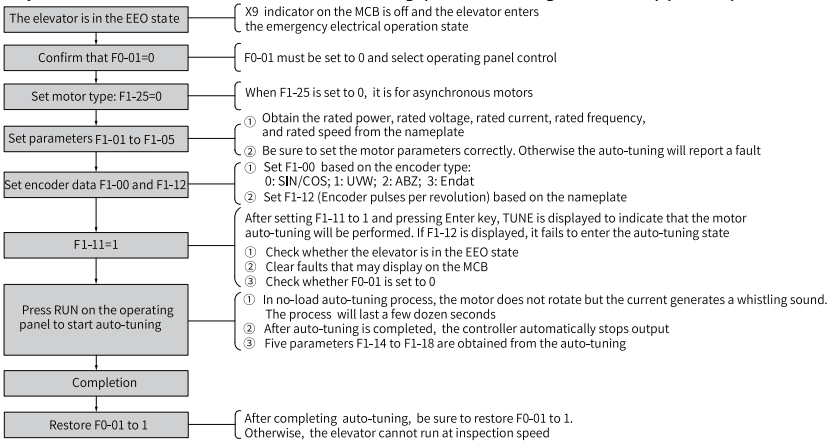


Figure 4-6 Asynchronous motor with-load auto-tuning

2. Asynchronous motor no-load auto-tuning (motor disconnected from the car)

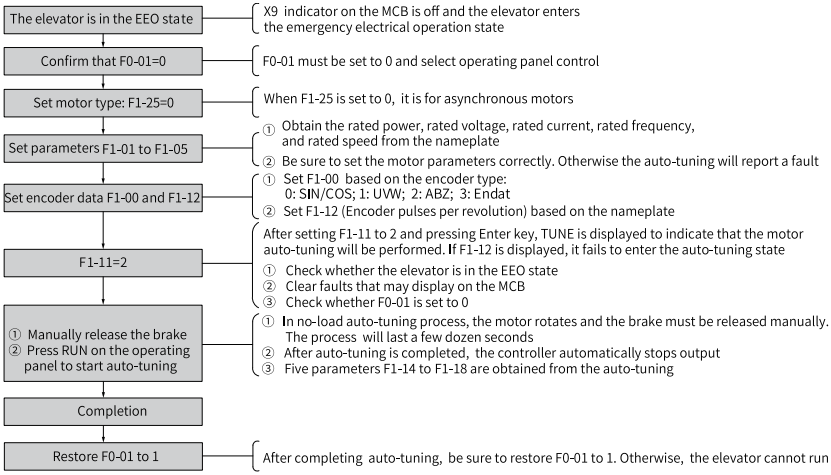


Figure 4-7 Asynchronous motor no-load auto-tuning

4.2 Vector Control Parameter Setting

4.2.1 Speed loop setting

Table 4–1 Speed loop setting

Param.	Name	Range	Default	Unit	Property
F2-00	Speed loop proportional gain Kp1	0 to 100	40	-	★
F2-01	Speed loop integral time Ti1	0.01 to 10.00	0.60	s	★
F2-02	Switchover frequency 1	0.00 to F2-05	2.00	Hz	★
F2-03	Speed loop proportional gain Kp2	0 to 100	35	-	★
F2-04	Speed loop integral time Ti2	0.01 to 10.00	0.80	s	★
F2-05	Switchover frequency 2	F2-02 to F0-06	5.00	Hz	★

F2-00 and F2-01 are PI regulation parameters when the running frequency is smaller than the value of F2-02.

F2-03 and F2-04 are PI regulation parameters when the running frequency is larger than the value of F2-05.

If the running frequency is between switchover frequency 1 (F2-02) and switchover frequency 2 (F2-05), the speed loop PI parameters are the weighted average value of the two groups of PI parameters (F2-00 and F2-01, F2-03 and F2-04), The following figure shows details.

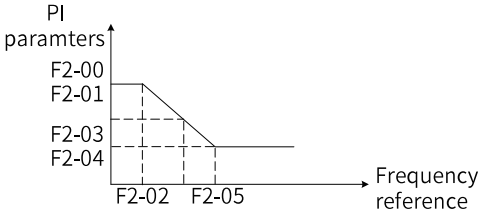


Figure 4-8 Relationship between running frequencies and PI parameters

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.

The recommended adjustment method is as follows:

- If the default setting cannot meet the requirements, do some fine-tuning: 1. Decrease the proportional gain to make sure that the system does not oscillate; 2. Reduce the integral time to make sure that the system has a quick response while maintaining a small overshoot.
- If both F2-02 (Switchover frequency 1) and F2-05 (Switchover frequency 2) are 0, only F2-03 and F2-04 are valid.

4.2.2 Current Loop PI Setting

Table 4–2 Current Loop PI Setting

Param.	Name	Range	Default	Unit	Property
F2-06	Current loop proportional gain Kp	10 to 500	60	-	★
F2-07	Current loop integral gain Ki	10 to 500	30	-	★

Current loop proportional gain Kp1 and current loop integral gain Ki1 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, you need not modify these parameters.

4.2.3 Position Lock PI Setting

Table 4–3 Position Lock PI Setting

Param.	Name	Range	Default	Unit	Property
F2-11	Position lock current coefficient	2.0 to 50.0	15.0	%	★
F2-12	Position lock speed loop Kp	0.00 to 2.00	0.50	-	★
F2-13	Position lock speed loop Ti	0.00 to 2.00	0.60	-	★

It is used for no-load-cell startup pre-torque self-adaption. You can enable the no-load-cell startup function by setting F8-01 to 2.

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

4.3 Running Control Parameter Setting

4.3.1 Running Speed Curve Setting

Table 4–4 Running speed curve setting

Param.	Name	Range	Default	Unit	Property
F3-00	Startup speed	0.000 to 0.050	0.000	m/s	★
F3-01	Startup speed holding time	0.000 to 5.000	0.000	s	★
F3-02	Acceleration rate	0.200 to 1.500	0.700	m/s^2	★
F3-03	Acceleration end jerk time 1	0.300 to 4.000	1.500	s	★
F3-04	Acceleration end jerk time 2	0.300 to 4.000	1.500	s	★
F3-05	Deceleration rate	0.200 to 1.500	0.700	m/s^2	★
F3-06	Deceleration start jerk time 1	0.300 to 4.000	1.500	s	★
F3-07	Deceleration start jerk time 2	0.300 to 4.000	1.500	s	★
F3-09	Pre-deceleration distance	0.0 to 90.0	0.0	mm	★

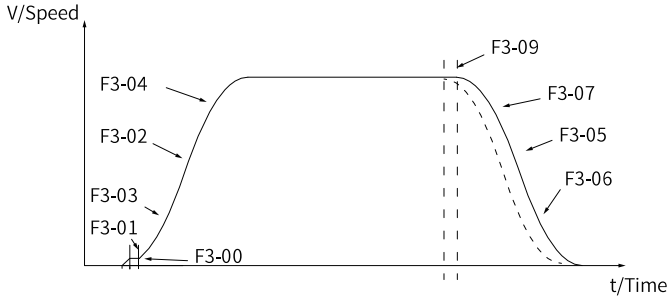


Figure 4-9 Speed curve

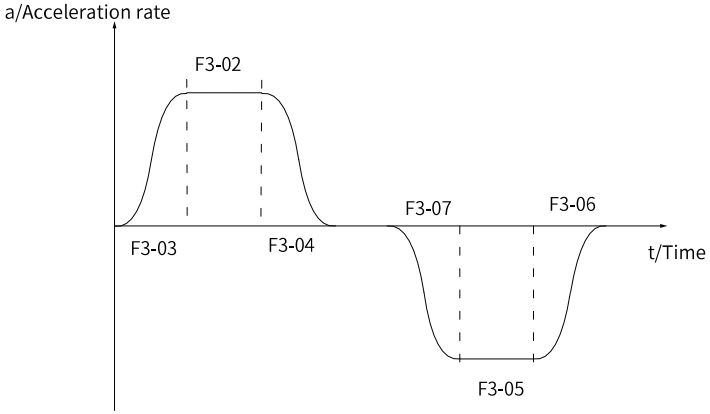


Figure 4-10 Acceleration/deceleration speed curve

- F3-00 and F3-01 are used to set the acceleration time and holding time of the startup speed. Proper setting of these parameters can reduce the startup jerks caused by static friction between guide rails and guide shoes.
- F3-02, F3-03, and F3-04 are used to set the running curve during acceleration of the elevator:
  - F3-02 is the acceleration of the elevator speed curve (uniform acceleration).
  - F3-03 sets the time for the acceleration rate to change from 0 to the value set in F3-02 in the speed curve (increasing acceleration). The larger the value is, the smoother the speed curve is.
  - F3-04 is the time for the acceleration rate to change from the value set in F3-02 to 0 in the speed curve (increasing deceleration). The larger the value is, the smoother the speed curve is.
- F3-05, F3-06, and F3-07 are used to set the running curve during deceleration of the elevator:
  - F3-05 is the acceleration of the elevator speed curve (constant deceleration).

- F3-06 is the time for the acceleration rate to change from 0 to the value set in F3-05 in the speed curve (decreasing acceleration). The larger the value is, the smoother the speed curve is;
- F3-07 is the time for the acceleration rate to change from the value set in F3-05 to 0 in the speed curve (decreasing deceleration). The larger the value is, the smoother the speed curve is.

- F3-09 is used to set the pre-deceleration distance of the elevator. This function is to eliminate the effect of encoder signal loss or leveling signal delay.

4.3.2 Car Start/Stop Timing Parameter Setting

Table 4–5 Car start/stop timing parameter setting

Param.	Name	Range	Default	Unit	Property
F3-18	Zero-speed current output time	0.200 to 1.000	0.200	s	★
F3-19	Holding time of zero-speed torque current upon brake release	0.000 to 2.000	0.600	s	★
F3-20	Zero-speed control time at end	0.000 to 1.000	0.300	s	★
F8-11	Holding time of zero-speed torque current upon brake close	0.200 to 1.500	0.600	s	★

The zero-speed current output holding time and the braking action delay time are set.

- F3-18 specifies the time from output of the RUN contactor to output of the brake contactor. The controller performs excitation on the motor and outputs zero-speed current with large starting torque.
- F3-19 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.
- F8-11 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.
- F3-20 specifies the zero-speed output time when the running curve ends.

The following figure shows the running timing.

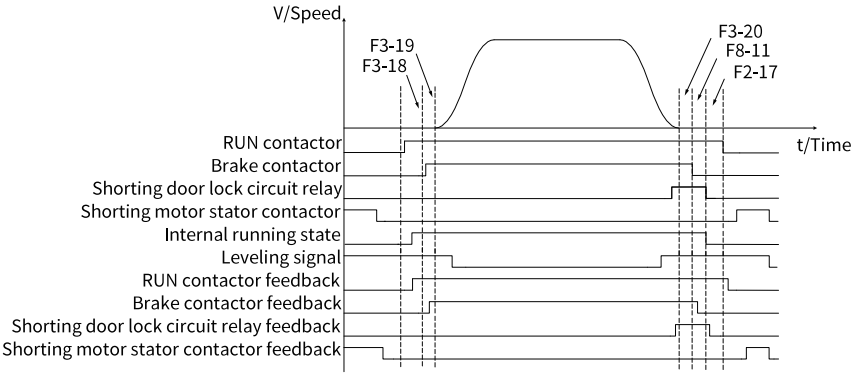


Figure 4-11 Running timing diagram

4.4 Communication State Parameter Display Description

4.4.1 MCB Communication State Display

Param.	Name	Range	Default	Unit	Property
F5-32	Communication state	Communication state monitoring of CANbus and Modbus	-	-	●

F5-32 is used to monitor the communication state of the car top CANbus and the hall call Modbus.

After users enter the F5-32 interface, the state of LEDs indicates the current communication state of hall calls. For the convenience of description, the LEDs are numbered 5, 4, 3, 2, and 1 respectively from left to right. The definition of each segment of the LEDs is as follows.

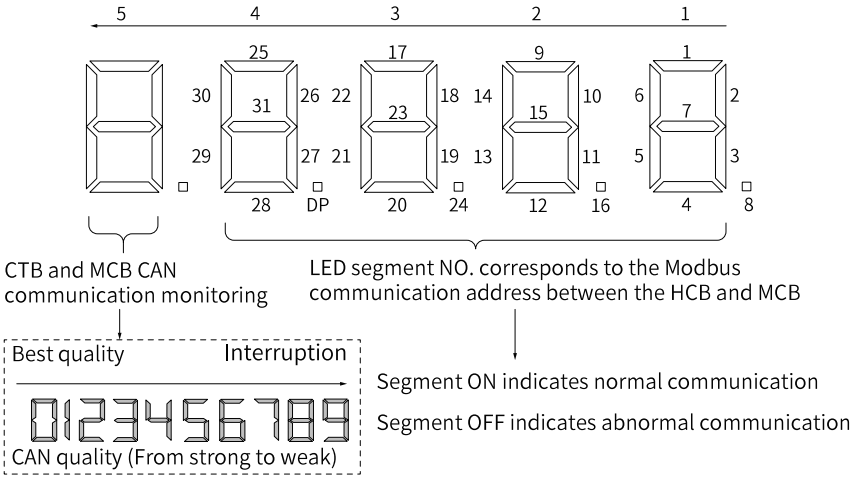


Figure 4-12 F5-32 Communication state monitoring

If the LEDs are as follows, it indicates that Modbus communication of addresses 1, 5, 6, 7, 12, 15, 16, 18, 19, 21, 22, 23, 25, 26, and 27 is abnormal, and that of other addresses is normal. CAN communication state displayed by the LEDs is 3, indicating a little interference.

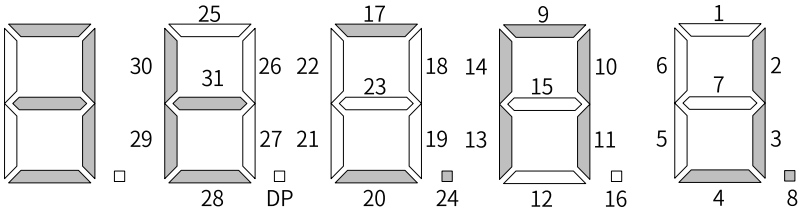


Figure 4-13 Example of LEDs display indicating the communication state

4.4.2 Hall Call Communication State Display

Param.	Name	Range	Default	Unit	Property
FA-46	HCB communication state 1	0 to 65535	0	-	●
FA-47	HCB communication state 2	0 to 65535	0	-	●
FA-48	HCB communication state 3	0 to 65535	0	-	●

Param.	Name	Range	Default	Unit	Property
FA-50	HCB and expansion board communication state 1	0 to 65535	0	-	●
FA-51	HCB and expansion board communication state 2	0 to 65535	0	-	●
FA-52	HCB and expansion board communication state 3	0 to 65535	0	-	●

These parameters display the communication state between HCBs of all floors and the MCB.

Parameters FA-46 to FA-48 display the communication state between the control board Modbus interface and the HCB.

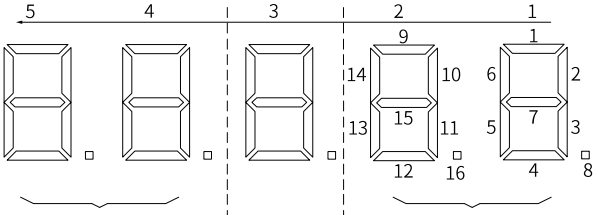
Parameters FA-50 to FA-52 display the communication state between the machine room expansion board and the HCB. The expansion board Modbus interface can be connected to the rear door HCB of the through-type door.

Five LEDs are numbered 1, 2, 3, 4, and 5 from right to left. There are two methods for checking the hall call communication state:

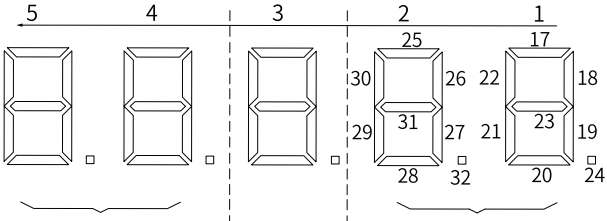
Method 1: Check through LEDs 5, 4 and 3. LEDs 5 and 4 indicate the floor address, and LED 3 indicates that the hall call communication of this address is normal (display 1) or disconnected (display 0);

Method 2: LEDs 2 and 1 indicate the communication state. The 16 segments indicate the communication state of 16 floor addresses. If an LED is ON, communication is normal. If this LED is OFF, communication is disconnected.

- FA-46/FA-50 corresponds to floors 1 to 16, as shown in the following figure.



- FA-47/FA-51 corresponds to floors 17 to 32, as shown in the following figure.

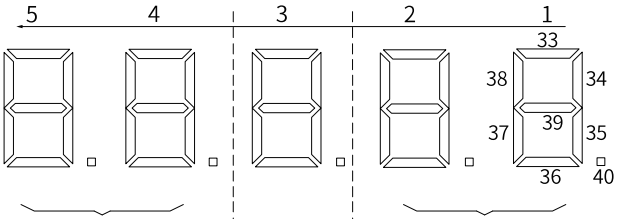


LEDs 4 and 5 show a certain address

Address state
0: Invalid
1: Valid

Each segment number corresponds to the hall call communication address
Segment ON indicates normal communication
Segment OFF indicates abnormal communication

- FA-48/FA-52 corresponds to floors 33 to 40, as shown in the following figure.



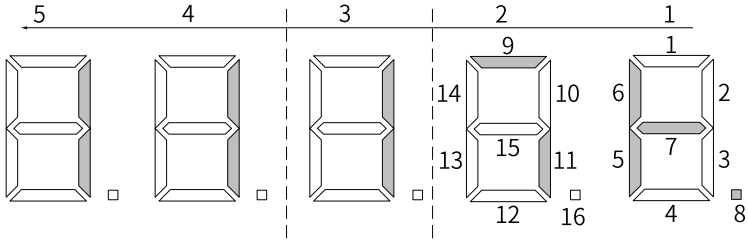
LEDs 4 and 5 show a certain address

Address state
0: Invalid
1: Valid

Each segment number corresponds to the hall call communication address
Segment ON indicates normal communication
Segment OFF indicates abnormal communication

Example:

As shown in the following figure, LEDs 3 to 5 indicate hall call communication at floor 11 is normal. You can view hall calls at other floors by shifting LEDs 4 and 5. It can be seen from LEDs 1 and 2 that hall call communication at floors 5, 6, 7, 8, 9, and 11 is normal.



Hall call floor

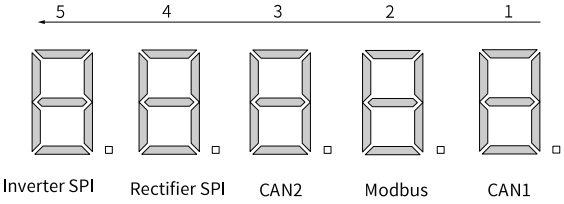
State valid

Each segment number shows a hall call floor

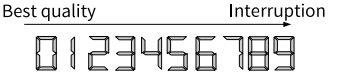
4.4.3 Communication Interference Display

Param.	Name	Range	Default	Unit	Property
FA-24	Communication interference	0 to 65535	0	-	●

The parameter displays the current quality of different system communication types, as described in the following figure.



Each LED segment shows a number, indicating the current communication quality:



Communication quality (From strong to weak)

4.5 Terminal State Display

4.5.1 MCB I/O State

Param.	Name	Range	Default	Unit	Property
FA-26	Input state 1	0 to 65535	0	-	●
FA-27	Input state 2	0 to 65535	0	-	●
FA-28	Input state 3	0 to 65535	0	-	●
FA-29	Input state 4	0 to 65535	0	-	●
FA-30	Input state 5	0 to 65535	0	-	●
FA-31	Output state 1	0 to 65535	0	-	●
FA-32	Output state 2	0 to 65535	0	-	●

Parameters FA-26 to FA-32 display the system input and output states.

Description of FA-26 input state 1 display.

As shown in *"Figure 4-14 " on page 203* , five LEDs are numbered 1, 2, 3, 4, and 5 from right to left.

- Numbers 4 and 5 indicate an input or output terminal function.
- Number 3 indicates that this function is enabled (1) or disabled (0).
- Numbers 1 and 2 display the overall state of 16 functions contained in this parameter using 16-segment LEDs.

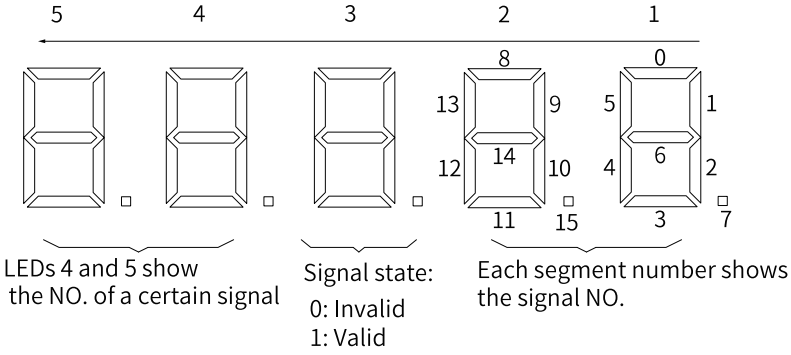


Figure 4-14 FA-26 input state 1 display

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

Input state display example:

According to the following figure, 5, 4 and 3 indicate that signal 10 (Inspection down) is 1 (Active); Also, 1 and 2 indicate that besides signal 10, signals 4 (Safety circuit feedback), 5 (Door lock circuit feedback), 6 (RUN contactor feedback), 7 (Brake contactor feedback), and 8 (Inspection signal) are active.

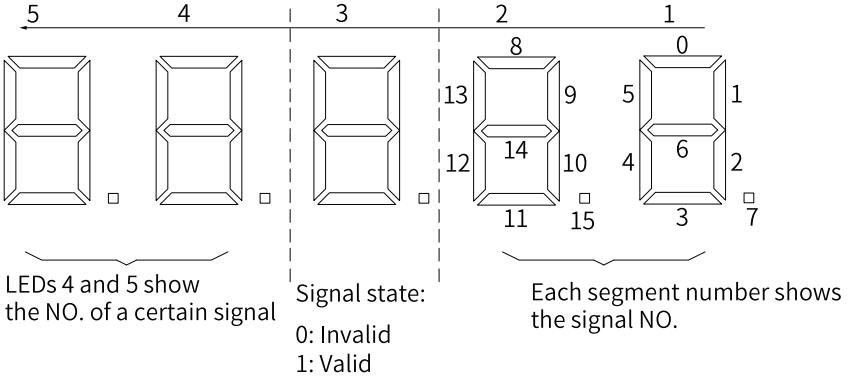


Figure 4-15 Example of FA-26 input state

Description of FA-27 input state 2 display.

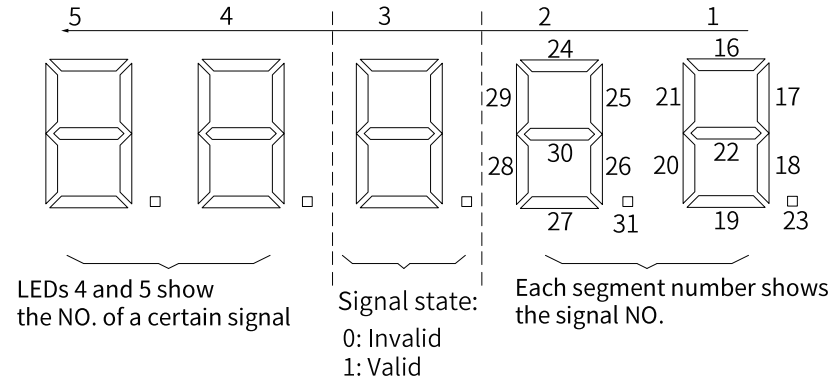


Figure 4-16 FA-27 input state 2 display

No.	Definition	No.	Definition
16	Up slow-down 1 signal	24	Door operator 1 light curtain
17	Down slow-down 1 signal	25	Door operator 2 light curtain
18	Up slow-down 2 signal	26	Brake travel switch 1 feedback
19	Down slow-down 2 signal	27	UPS input
20	Up slow-down 3 signal	28	Elevator lock input
21	Down slow-down 3 signal	29	Safety circuit 2 feedback
22	Shorting door lock circuit relay output feedback	30	Shorting motor stator contactor feedback input
23	Firefighter operation signal	31	Door lock circuit 2 feedback

Description of FA-28 input state 3 display.

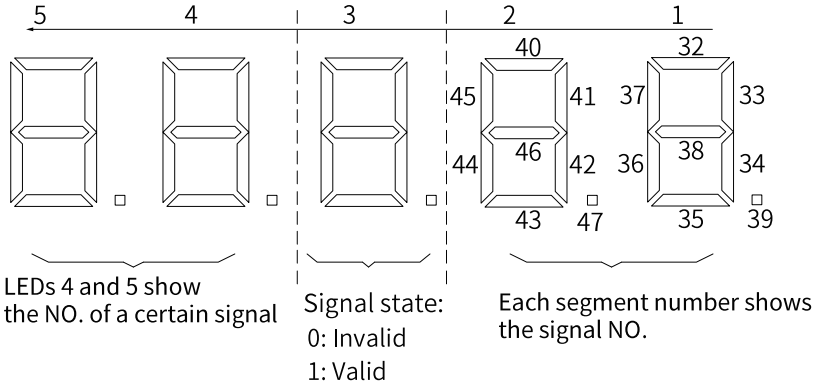


Figure 4-17 FA-28 input state 3 display

No.	Definition	No.	Definition
32	Reserved	40	Fire emergency floor switchover
33	Door 1 safety edge input	41	Dummy floor input
34	Door 2 safety edge input	42	Reserved
35	Motor overheat input	43	Reserved
36	Earthquake signal input	44	Door 1 open signal
37	Rear door forbidden signal	45	Door 2 open signal
38	Light-load	46	Brake travel switch 2 feedback
39	Half-load	47	External fault input

Description of FA-29 input state 4 display.

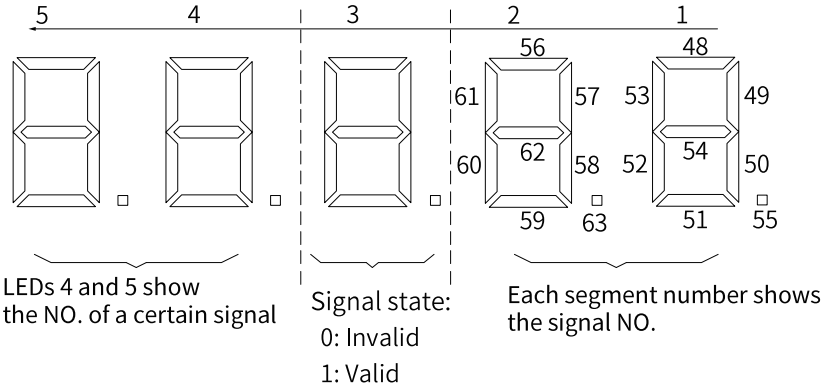


Figure 4-18 FA-29 input state 4 display

No.	Definition	No.	Definition
48	Terminal floor signal	56	Reserved
49	Door lock shorting signal	57	Reserved
50	Reserved	58	Reserved
51	Reserved	59	Reserved
52	Reserved	60	Reserved
53	Reserved	61	Reserved
54	Reserved	62	Reserved
55	Reserved	63	Reserved

Description of FA-30 input state 5 display.

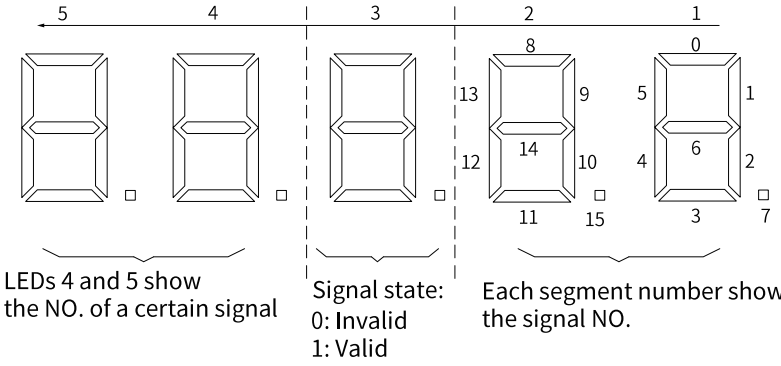


Figure 4-19 FA-30 input state 5 display

No.	Definition	No.	Definition
0	Reserved	8	Reserved
1	Reserved	9	Reserved

No.	Definition	No.	Definition
2	Reserved	10	Reserved
3	Reserved	11	Reserved
4	High-voltage safety circuit	12	Reserved
5	High-voltage door lock 1 signal	13	Reserved
6	High-voltage door lock 2 signal	14	Reserved
7	High-voltage door lock shorting	15	Reserved

Description of FA-31 output state 1 display.

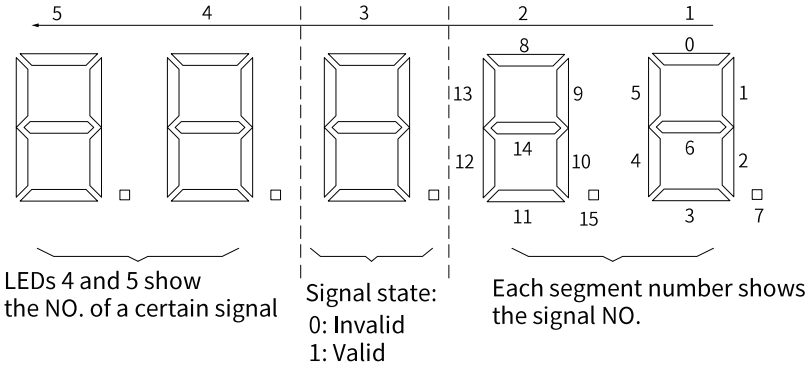


Figure 4-20 FA-31 output state 1 display

No.	Definition	No.	Definition
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 above level 3
3	Shorting door lock circuit relay output	11	Running state
4	Fire emergency floor arrival signal feedback	12	Shorting motor stator contactor output
5	Door open by door operator 1	13	Emergency evacuation output at power failure
6	Door close by door operator 1	14	Controller normal output
7	Door open by door operator 2	15	Emergency buzzer output

Description of FA-32 output state 2 display.

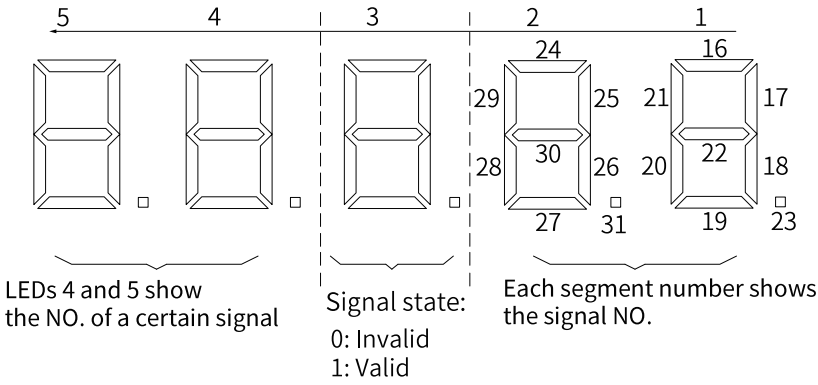


Figure 4-21 FA-32 output state 2 display

No.	Definition	No.	Definition
16	High-voltage startup of brake	24	Reserved
17	UP running signal	25	Rope gripper reset
18	Lighting/fan output	26	Braking transistor short circuit output
19	Medical sterilization output	27	Alarm filtered output
20	Non-door zone stop	28	Reserved
21	Electromagnetic lock output	29	Reserved
22	Non-service state	30	Reserved
23	Emergency evacuation completed	31	Reserved

4.5.2 Car Input/Output State

Param.	Name	Range	Default	Unit	Property
FA-33	Car input state	0 to 65535	0	-	●
FA-34	Car output state	0 to 65535	0	-	●

FA-33 and FA-34 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.

Description of FA-33 car input display

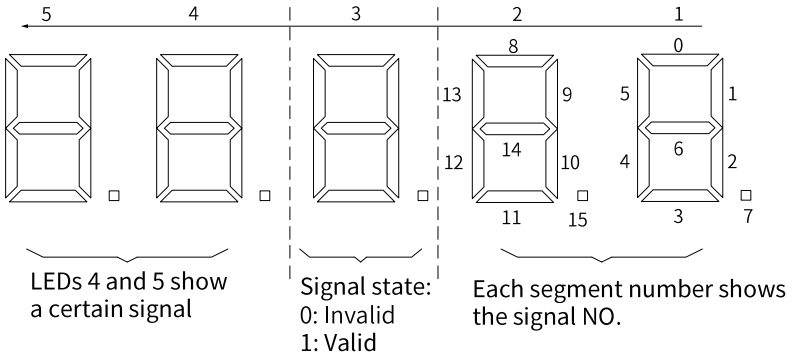


Figure 4-22 FA-33: Car input state display

No.	Definition	No.	Definition
0	Reserved	8	Overload input
1	Door 1 light curtain	9	Light-load input
2	Door 2 light curtain	10	Up leveling communication signal
3	Door 1 open limit	11	Down leveling communication signal
4	Door 2 open limit	12	Reserved
5	Door 1 close limit	13	Inspection signal
6	Door 2 close limit	14	Up signal input
7	Full-load input	15	Down signal input

Description of FA-34 car output display

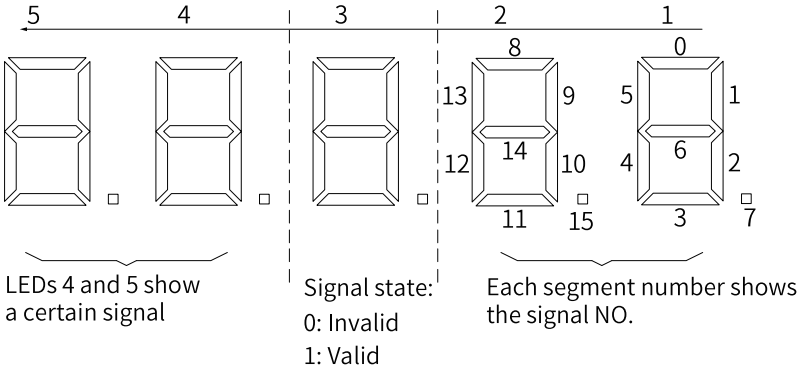


Figure 4-23 FA-34 Car output state display

No.	Definition	No.	Definition
0	Reserved	8	Down arrival gong
1	Door 1 open	9	Reserved
2	Door 1 close	10	Reserved
3	Forced door close 1	11	Sound and light alarm output
4	Door 2 open	12	Reserved
5	Door 2 close	13	Reserved
6	Forced door close 2	14	Reserved
7	Up arrival gong	15	Reserved

4.5.3 Hall state

Description of FA-35 hall state display

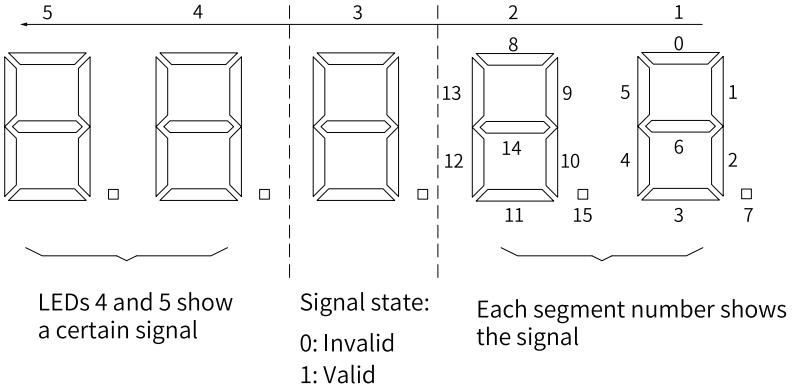


Figure 4-24 FA-35 hall state display

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	Security signal	13	Reserved
6	Door close button input	14	Reserved
7	Reserved	15	Reserved

4.5.4 System State

Description of FA-36 system state 1 display

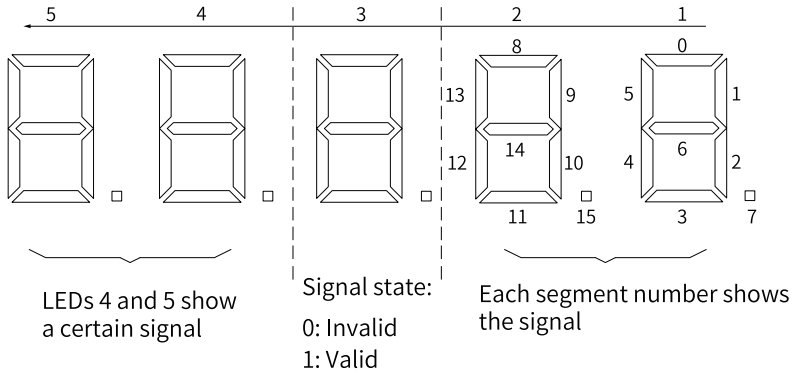


Figure 4-25 FA-36 system state 1 display

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

Description of FA-37 system state 2 display

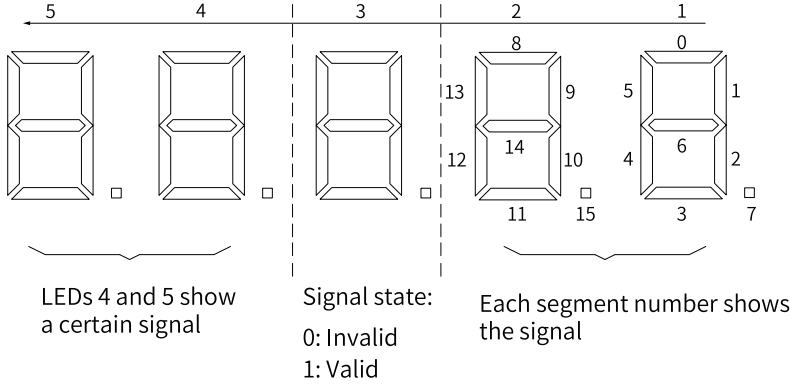


Figure 4-26 FA-37 system state 2 display

No.	Definition	No.	Definition
0	Up direction display	8	Reserved
1	Down direction display	9	Reserved
2	Running 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

4.6 Terminal State Monitoring

Param.	Name	Range	Default	Unit	Property
F5-34	Terminal state display	Monitoring of I/O terminals on the MCB	-	-	●
F5-35	Terminal state display	Monitoring of I/O terminals on the CTB, CCB, and HCB	-	-	●

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 F5-34 and F5-35 are respectively numbered as 5, 4, 3, 2, and 1 from left to right. The segments are defined as follows.

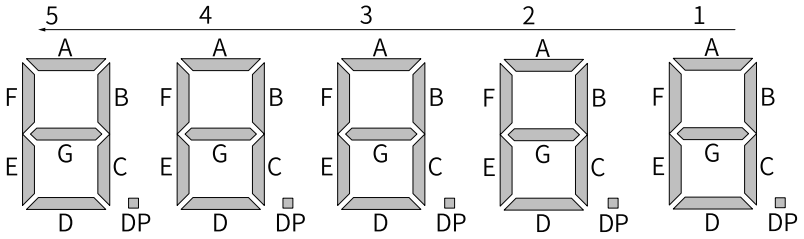


Figure 4-27 Terminal State Monitoring

F5-34 Terminal state display					
Segment	1	2	3	4	5
A	-	Inspection signal	Up slow-down 1 signal	Door operator 1 light curtain	Reserved
B	Up leveling signal	Inspection up signal	Down slow-down 1 signal	Door operator 2 light curtain	RUN contactor output

F5-34 Terminal state display					
Segment	1	2	3	4	5
C	Down leveling signal	Inspection down signal	Up slow-down 2 signal	Brake output feedback 2	Brake contactor output
D	Door zone signal	Fire emergency signal	Down slow-down 2 signal	UPS input	Shorting door lock circuit relay output
E	Safety circuit feedback 1	Up limit signal	Up slow-down 3 signal	Elevator lock input	Fire emergency floor arrival signal
F	Door lock circuit feedback 1	Down limit signal	Down slow-down 3 signal	Safety circuit feedback 2	-
G	RUN contactor output feedback	Overload signal	Shorting door lock circuit relay output feedback	Synchronous motor self-locking feedback	-
DP	Brake output feedback 1	Full-load signal	Firefighter operation signal	Door lock circuit feedback 2	-

F5-35 Terminal state display					
Segment	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

F5-35 Terminal state display					
Segment	1	2	3	4	5
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	-
DP	Overload signal	Firefighter operation signal	Down arrival gong	Energy-saving sign	-

4.7 Service Floor Parameter Setting

Param.	Name	Range	Default	Unit	Property
F6-05	Service floor 1	0 to 65535 (floors 1 to 16)	65535	-	★
F6-06	Service floor 2	0 to 65535 (floors 17 to 32)	65535	-	★
F6-35	Service floor 3	0 to 65535 (floors 33 to 40)	65535	-	★

These parameters are used to set the service floors among floors 1 to 48.

F6-05 corresponds to floors 1 to 16, F6-06 floors 17 to 32 and F6-35 floors 33 to 40.

The following part takes F6-05 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.

Set the value of these bits one by one. Convert the binary values to decimal values and then set the sum for display on the operating panel, as shown in the following figure.

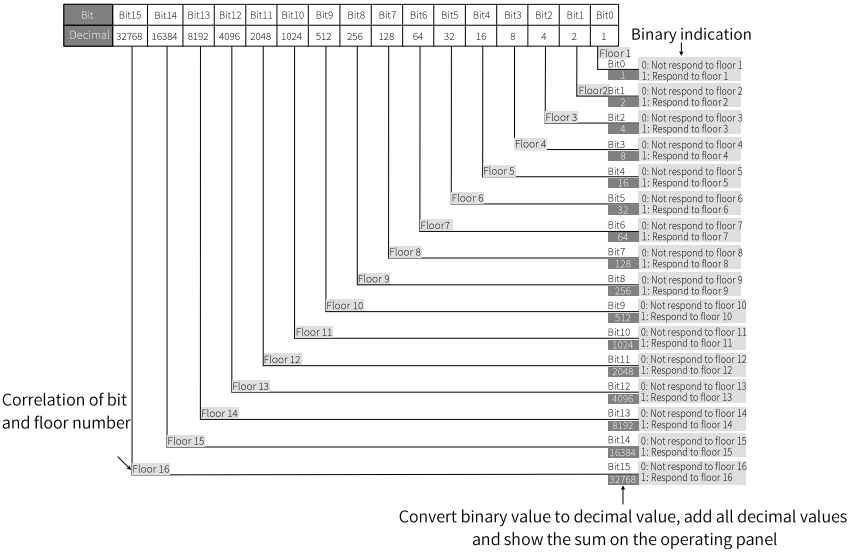
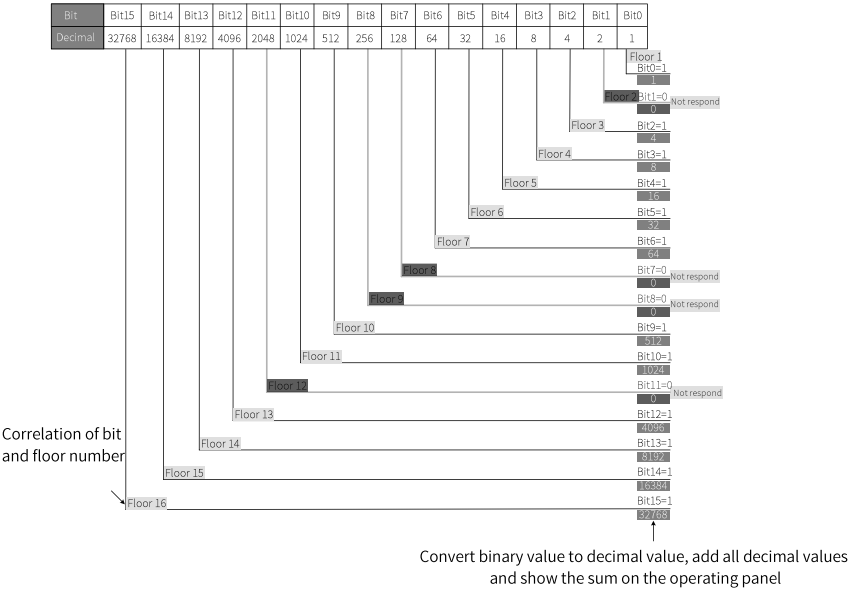


Figure 4-28 Converting binary value of F6-05 to decimal value

Example:

For a 16-floor elevator, if it does not respond to the calls at floors 2, 8, 9, and 12, set bit1, bit7, bit8, and bit11 to 0 and other bits to 1, as shown in the following figure.



Add all decimal values to get a sum:

1 + 4 + 8 + 16 + 32 + 64 + 512 + 1024 + 4096 + 8192 + 16384 + 32768 = 63101

Then, enter 63101 on the operation panel.

The setting method for F6-06 and F6-35 is the same as that for F6-05.

4.8 Program Control Selection Parameter Setting

Param.	Name	Range	Default	Unit	Property
F6-40	Program control selection 1	0 to 65535	0	-	★
F6-41	Program control selection 2	0 to 65535	0	-	★
F6-42	Program control selection 3	0 to 65535	0	-	★

These parameters are used for program control selection. Each bit defines a function. If a bit is set to 1, the function indicated by this bit is enabled; if this bit is set to 0, the function is disabled.

The functions defined by the binary bits of these parameters are described in the following table.

F6-40 Program control selection 1			
bit	Function	Definition	Default
bit0	Accessibility function selection	Enable the accessibility function	0
bit1	Soft limit function	When the up slow-down and down leveling are active and the up leveling is inactive, the system assumes that the up limit is performed. When the down slow-down and up leveling are active and the down leveling is inactive, the system assumes that the down limit is performed.	0
bit2	JP16 input used as rear door selection (button)	JP16 is used for the input of the rear door selection. This function is enabled if FC-04 is set to 2. When JP16 has button input, the elevator opens only the rear door with the button indicator ON. When the button indicator is OFF, the elevator opens only the front door	0
bit3	JP16 input used as the rear door open signal	JP16 is used for the input of the back door open signal	0

F6-40 Program control selection 1			
bit	Function	Definition	Default
bit4	Open only one door of the through-type door under manual control	This function is enabled only in the through-type door control modes 3 and 4. In this case, only one door opens each time while the other door must stay in the door close limit state Note: In group FD, the extended input includes "Single/Double door selection". If this input is active in the through-type door control mode 3, both doors open if there is a car call	0
bit5	Timed elevator lock	F6-38/F6-39 is valid only when this function is enabled	0
bit6	Manually operated door function	This function is for on-site elevator use	0
bit7	Reserved	-	-
bit8	Reserved	-	-
bit9	Disabling reverse floor number clear	The system clears all the current car calls by default every time the elevator changes the direction. When this function is enabled, clearing reverse floor numbers is disabled.	0
bit10	Display the next arriving floor number	The next floor the elevator is to arrive at is displayed during elevator running.	0
bit11	Responding to car calls first	The system responds to hall calls only after executing all car calls.	0
bit12	Car call auxiliary command terminal used for accessibility function	You can set the auxiliary command terminal (CN8) on the CTB for input of the disability calls: 0: Consistent with CN7 for the single-door configuration, and rear door for double-door configuration 1: CN8 calls are the disability calls	0
bit13	Duplicated commands used as accessibility function and rear door function	It is valid only when the function of bit14 is enabled: 0: Rear door function 1: Accessibility function	0

F6-40 Program control selection 1			
bit	Function	Definition	Default
bit14	Car call command duplication	Car call command duplication: A. Function disabled: CN7 is used for front door calls or ordinary calls, and CN8 is used for rear door calls or disability calls B. Function enabled: For CN7 and CN8, inputs 1 to 16 are for front door calls or ordinary calls, and inputs 17 to 32 for rear door calls or disability calls	0
bit15	JP20 input used for switchover to rear door (switch)	JP20 is used for input of switchover between the front door and the rear door	0

F6-41 Program control selection 2			
bit	Function	Definition	Default
bit0	Reserved	-	-
bit1	Reserved	-	-
bit2	Decelerate to stop in the inspection state	During inspection, the system decelerates to stop if the terminal floor slow-down 1 acts	0
bit3	Car top inspection communication	Forcibly enable the car top inspection communication and operation is allowed for active car top inspection signal	-
bit4	Buzzer tweeting during door open delay	The buzzer will tweet when the door open delay time set in FB-14 is reached	0
bit5	Reserved	-	-
bit6	Door open delay cancellation	Door open delay is canceled when the door open delay button is pressed again	0
bit7	Reserved	-	-
bit8	Elevator lock at door open	In the elevator lock state, the elevator keeps the door open at the elevator lock floor	0
bit9	Display available at elevator lock	In the elevator lock state, hall calls are displayed normally	0
bit10	Elevator lock in the attendant state	The elevator can be locked properly in the attendant state	0
bit11	Flashing at arrival	The car display blinks when the elevator arrives at the floor. The blinking advance time is set through F6-47	0

F6-41 Program control selection 2			
bit	Function	Definition	Default
bit12	Door re-open during door open delay	The door re-opens if the door open delay input is active during door close	0
bit13	Door re-open upon valid car call of current floor	The door re-opens if the car call of the current floor is valid during door close	0

F6-42 Program control selection 3			
bit	Function	Definition	Default
bit0	Reserved	-	-
bit1	Canceling door open/ close command at delay after door open/close limit	The door open/close command is canceled at the delay of 1s after door open/close limit	0
bit2	Door lock state not judged at door close output	In normal conditions, the system determines that the door is completely closed only when the door close limit signal is active and the door lock is applied. If this function is enabled, the system does not judge the door lock state	0
bit3	Door close output during running	There is continuous door close output as the elevator runs	0
bit4	Returning to terminal floor for verification at first-time power-on	The elevator runs to the bottom floor for verification at power-on for the first time	0
bit5	Clearing calls immediately at elevator lock	0: After the elevator lock signal becomes active, the elevator clears hall calls and responds to the current car call, and then enters elevator lock state 1: After the elevator lock signal becomes active, the elevator clears all calls and enters elevator lock state	0
bit6	Electromagnetic lock NC output	After the NC output is selected, the lock signal is not output during door open and is output during door close	0
bit7	Canceling fault E50 detection	When bit7 is set to 1, fault E50 is not detected	0
bit8	Door open/close limit detection cancellation	When this function is enabled, the fault detection of the door open/close limit signal is canceled	0
bit9	Canceling fault subcode scrolling display	When this function is enabled, the keypad will not have a scrolling display of the fault	0

F6-42 Program control selection 3			
bit	Function	Definition	Default
bit10	Door open energy saving	In the case of waiting with the door open, the system closes the lighting and fan as specified by the time set in F9-01 in door open limit state	0
bit11	Independent switch exiting from parallel control	When this function is enabled, individual elevators will be independent and separated from parallel control and be in normal running mode. When this function is disabled, the elevator will be independent and separated from parallel control and enter the VIP running mode	1

4.9 Load Cell Auto-tuning Parameter Setting

Param.	Name	Range	Default	Unit	Property
F8-00	Car load ratio during load cell auto-tuning	0 to 100	0	%	★
F8-01	Pre-torque selection	0 to 3	2	-	★
F8-02	Pre-torque offset	0.0 to 100.0	50	%	★
F8-05	Current car load	0 to 255	0	-	●
F8-06	No-load measured by load cell	0 to 255	0	-	★
F8-07	Full-load measured by load cell	0 to 255	100	-	★

To perform load cell auto-tuning, do as follows:

1. Ensure that F8-01 is set to 0 and F5-36 (Load cell input selection) is set to 2 (CTB 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 F8-00 to 0 and press ENTER.
3. Put N% load in the car. Then set F8-00 to N and press ENTER. For example, if you put 500 kg load in the elevator with rated load of 1000 kg, set F8-00 to 50.

After the load-cell auto-tuning is completed, the corresponding no-load and full-load data will be recorded in F8-06 and F8-07. You can also manually input the data as needed.

F8-01 is used to set the pre-torque compensation mode at the startup of the elevator. The possible values to be set:

0: Pre-torque disabled and load cell auto-tuning is allowed.

1: Load cell pre-torque compensation. With a load cell, the system implements the pre-torque compensation.

2: Automatic pre-torque compensation. The system automatically adjusts the pre-torque compensation at startup without a load cell.

3: Both load cell pre-torque compensation and automatic pre-torque compensation valid. When automatically adjusting the pre-torque compensation, the system makes a correction together with the load cell to achieve better startup results.

When pre-torque compensation is used with the load cell, the system outputs the torque matching the load in advance to ensure the riding comfort at startup. The output torque is limited by the torque upper limit (F2-08). When the load torque exceeds the set torque upper limit, the system outputs the torque upper limit.

F8-02 is used to set the pre-torque offset.

It is actually the balancing factor of the elevator, indicating the percentage of the car load out of the rated load when the counterweight and the car weight are balanced.

F8-05 is a read-only parameter and reflects the load condition in the car. The value is sampled by the NICE3000^{new} by using a load cell to judge overload or full-load, or calculate the torque current for load cell pre-torque compensation.

F8-06 and F8-07 respectively records the car no-load and full-load conditions in the car. They are AD sampling values.

4.10 Riding Comfort Adjustment During Running

The riding comfort is an important factor indicating the elevator's overall performance. Improper installation and model selection of elevator parts may cause discomfort. You can improve the riding comfort by adjusting the controller output and elevator's mechanical structure.

4.10.1 Riding Comfort Adjustment at Startup/Stop

Adjustment to Abnormal Motor Startup

Param.	Name	Range	Default
F2-00	Speed loop proportional gain Kp1	0 to 100	40
F2-01	Speed loop integral time Ti1	0.01 to 10.00	0.60s

Param.	Name	Range	Default
F2-03	Speed loop proportional gain Kp2	0 to 100	35
F2-04	Speed loop integral time Ti2	0.01 to 10.00	0.80s

F2-00/01/03/04 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. However, too large proportional gain or too small integral time may lead to motor jitter due to 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 large integral time may cause motor speed tracking abnormality, resulting in fault E33 or unstable leveling at stop.

The default factory settings are proper for most motors, and you need not modify these parameters. These parameters need to be adjusted only for small-power motors (such as P ≤ 5.5 kW) because they may have oscillation.

To eliminate oscillation, do as follows:

- Decrease the proportional gain first (between 10 and 40) to ensure that the system does not oscillate,
- and then reduce the integral time (between 0.1 and 0.8) to ensure that the system has quick response but small overshoot.

Adjustment to Elevator Startup for Riding Comfort

1. Adjustment for no-load-cell startup

Param.	Name	Range	Default	Notes
F8-01	Pre-torque selection	0: Pre-torque disabled 1: Load cell pre-torque compensation 2: Automatic pre-torque compensation 3: Load cell pre-torque and automatic compensation both in effect	2	Set this parameter to 2 (Automatic pre-torque compensation) when the no-load-cell startup function is enabled.
F2-11	Position lock current coefficient	2.0% to 50.0%	15.0%	Position lock adjustment parameters (F2-11, F2-12 and F2-13 are valid only when F8-01 is set to 2 or 3.)
F2-12	Position lock speed loop Kp	0.00 to 2.00	0.50	
F2-13	Position lock speed loop Ti	0.00 to 2.00	0.60	

Notes:

When no-load-cell pre-torque compensation is enabled, no analog load cell is required. The controller quickly compensates the torque based on the slight movement of the encoder at startup.

The factory settings of F2-11, F2-12 and F2-13 are proper for most motors, and you need not modify these parameters. For the small-power motor (P ≤ 5.5 kW), the motor may have oscillation or noise at with-load startup, and passengers in the car may have a strong feeling of car lurch.

To eliminate oscillation, do as follows:

- Decrease the value of F2-11 (between 5 and 15) to eliminate motor oscillation;
- Decrease the values of F2-12 and F2-13 (between 0.1 and 0.8) to reduce the motor noise and improve riding comfort at startup.

2. Adjustment for load cell startup

Param.	Name	Range	Default	Notes
F8-01	Pre-torque selection	0: Pre-torque disabled 1: Load cell pre-torque compensation 2: Automatic pre-torque compensation 3: Load cell pre-torque and automatic compensation both in effect	2	When a load cell is used, set F8-01 to 1. Load cell pre-torque compensation
F8-02	Pre-torque offset	0.0% to 100.0%	50.0%	Load cell pre-torque compensation regulation parameters
F8-03	Drive gain	0.00 to 2.00	0.60	
F8-04	Brake gain	0.00 to 2.00	0.60	

Notes:

When an analog load cell is used, the controller identifies the motor state (braking or driving) according to the load cell signal and then automatically computes the required torque compensation. In this case, F8-03 and F8-04 are used to adjust the elevator startup.

The methods of adjustment are as follows:

- In the driving state, increase F8-03 properly if there is rollback at elevator startup, and decrease F8-03 if there is car lurch.
- In the braking state, increase F8-04 properly if there is jerk in command direction at elevator startup, and decrease F8-04 if there is car lurch.

Additional information:

F8-02 (Pre-torque offset) is actually the elevator balancing factor, namely, the percentage of the car load out of the rated load when the car and counterweight are balanced. This parameter must be set correctly. F8-03 (Drive gain) and F8-04 (Brake gain) indicate the current pre-torque coefficient when the motor runs at the driving and braking sides respectively. A higher gain requires a larger startup pro-torque compensation.

The motor's driving state and braking state are defined as follows:

Motor driving state: full-load up, no-load down

Motor braking state: full-load down, no-load up

3. Riding comfort adjustment at startup when the load cell and automatic pre-torque compensations are both enabled

Param.	Name	Range	Default	Notes
F8-01	Pre-torque selection	0: Pre-torque disabled 1: Load cell pre-torque compensation 2: Automatic pre-torque compensation 3: Load cell pre-torque and automatic compensation both in effect	2	Set this parameter to 3 when a load cell is used and the inconsistency of startup effects at different loads is caused by improper load cell linearity
F8-02	Pre-torque offset	0.0% to 100.0%	50.0%	Load cell pre-torque compensation regulation parameters
F8-03	Drive gain	0.00 to 2.00	0.60	
F8-04	Brake gain	0.00 to 2.00	0.60	
F2-11	Position lock current coefficient	2.0% to 50.0%	15.0%	Automatic pre-torque compensation regulation parameters
F2-12	Position lock speed loop Kp	0.00 to 2.00	0.50	
F2-13	Position lock speed loop Ti	0.00 to 2.00	0.60	

Notes:

When the load cell and automatic pre-torque compensations 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".

Handling of Rollback at Elevator Startup and Stop

Param.	Name	Range	Default
F3-19	Holding time of zero-speed torque current upon brake release	0.000 to 2.000	0.600s
F8-11	Holding time of zero-speed torque current upon brake close	0.200 to 1.500	0.600s

F3-19 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 this parameter properly.

F8-11 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 stop, increase this parameter properly.

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 F2-16 or F2-17 properly.

Param.	Name	Range	Default
F2-16	Torque acceleration time	1 to 500	1
F2-17	Torque deceleration time	1 to 3000	350

Adjustment of Large Mechanical Static Friction

Param.	Name	Range	Default
F3-00	Startup speed	0.000 to 0.050	0.000 m/s
F3-01	Holding time	0.000 to 5.000	0.000s

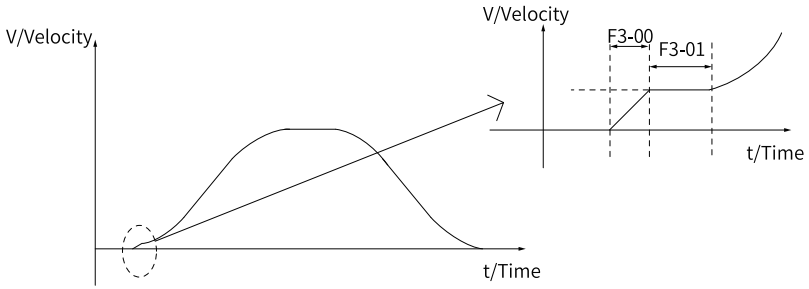


Figure 4-29 Startup timing diagram for countering static friction

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 the parameters to counter static friction for riding comfort.

4.10.2Running Curve Adjustment for Riding Comfort

Param.	Name	Range	Default
F3-02	Acceleration rate	0.200 to 1.500	0.700
F3-03	Acceleration end jerk time 1	0.300 to 4.000	1.500
F3-04	Acceleration end jerk time 2	0.300 to 4.000	1.500
F3-05	Deceleration rate	0.200 to 1.500	0.700
F3-06	Deceleration start jerk time 1	0.300 to 4.000	1.500
F3-07	Deceleration start jerk time 2	0.300 to 4.000	1.500

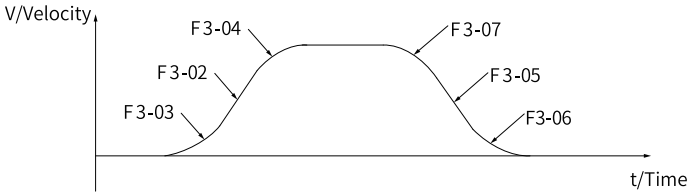


Figure 4-30 Running curve

F3-02, F3-03, and F3-04 are used to set the running curve during which the elevator accelerates from zero at startup to the maximum speed. If the acceleration is abrupt, decrease the value of F3-02 and increase the values of F3-03 and F3-04 to make the acceleration curve smoother. If the acceleration is found too slow, increase F3-02 and decrease F3-03 and F3-04.

Similarly, adjust F3-05, F3-06 and F3-07 properly to make the deceleration process more acceptable.

4.10.3Mechanical 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.

No.	Mechanical factor	Description
1	Guide rail	The installation of guide rails mainly involves the verticality and surface flatness of guide rails, smoothness of guide rail connections, and parallelism between two guide rails (including guide rails on the counterweight side).
2	Guide shoe	The tightness of guide shoes (including those on the counterweight side) will influence the riding comfort. The guide shoes must not be too loose or tight.

No.	Mechanical factor	Description
3	Steel rope	The motor drives the car totally through the steel rope. Large flexibility of the steel rope and irregular resistance during elevator running may result in curly 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 worsened 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	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).

4.11 Leveling Accuracy Adjustment

4.11.1Description of Leveling Components

- 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.
- 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 2/3 of its own length.
- The NO-type photoelectric switches are recommended to improve signal sensing stability.

4.11.2Leveling Accuracy Adjustment Description

- All-floor adjustment

Param.	Name	Range	Default
F4-00	Leveling adjustment	0 to 60	30

F4-00 is used to adjust the leveling position at all floors. The landing position at all floors will change after F4-00 is modified.

Increase F4-00 if under-leveling occurs on every floor, and decrease F4-00 if over-leveling occurs on every floor.

- Single-floor adjustment
  Adjust the car landing position at each floor separately by setting group Fr parameters.

  Leveling adjustment parameters in group Fr:

Param.	Name	Range	Default	Unit
Fr-00	Leveling adjustment mode	0 to 1	0	-
Fr-01	Leveling adjustment record 1	00000 to 60060	30030	mm
Fr-02	Leveling adjustment record 2		30030	mm
-	-		-	-
Fr-28	Leveling adjustment record 28		30030	mm

- Leveling adjustment method

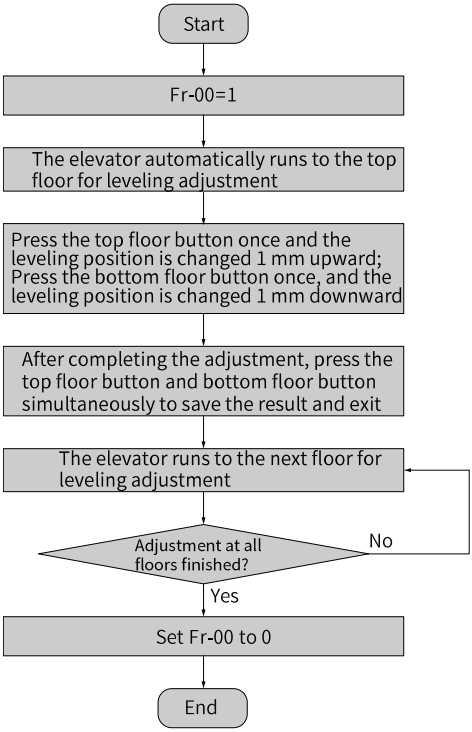


Figure 4-31 Single-floor leveling accuracy adjustment

- Ensure that shaft auto-tuning has been completed successfully, and the elevator runs properly at normal speed.
- After Fr-00 (Leveling adjustment function) is set to 1, the elevator does not respond to hall calls any more. It automatically runs to the 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 you save the adjustment result, the CCB displays the present floor.

Note

Note that if the leveling accuracy at a certain floor needs no adjustment, you also need to save the data once. Otherwise, the car calls cannot be registered.

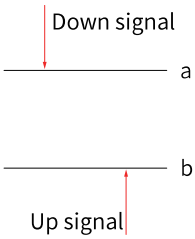
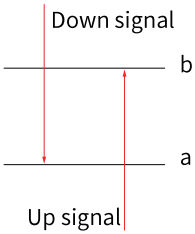
4.11.3Leveling Adjustment Guidelines

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 sill, make adjustment for related floors by setting group Fr parameters.

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 F4-00 and group Fr parameters.

The specific adjustment methods are as follows:

1. Adjust the overall leveling error of all floors by setting F4-00 (Leveling adjustment). 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	(F4-00) + H
Over-leveling		H = (b - a)/2	(F4-00) - H

2. Adjust the stop positions of related floors by setting group Fr parameters.
3. Additional information:

- Prevent over-adjustment in group Fr 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 sill is B (see *"Figure 4-32 " on page 232*). If B ≥ A for a certain floor, you need to adjust the leveling plate position of this floor first to ensure that B ≤ 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 Fr.

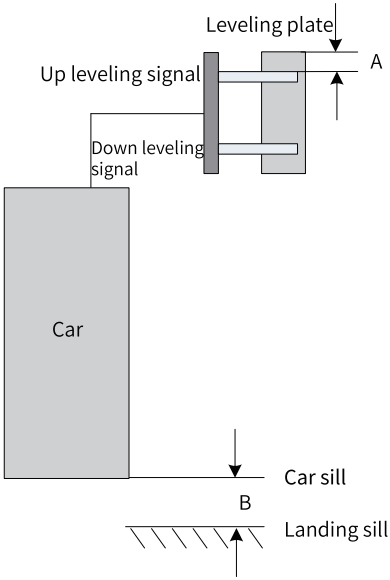


Figure 4-32 Leveling distance

- 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, increase the speed loop proportional gain or reduce the speed loop integral time properly.

5 Typical Functions and Schemes

5.1 Attendant Function

Function

- The elevator responds to hall calls.
- The elevator does not close the door automatically. You need to hold down the door close button to close the door. If you release the door close button during door close, the elevator doors will open again automatically.
- Direct travel ride and direction change can be implemented by respectively using JP20 and JP22 on the CCB. When the direct travel ride signal is active, the elevator does not respond to hall calls. After the direction change signal becomes active once, the elevator responds to calls in the reverse direction.
- If the elevator that enters the attendant state is under parallel/group control, the hall calls of this elevator is responded to by other elevators in the system.

Note

The system offers the function by default. Certain actions can be modified by parameter setting.

Wiring

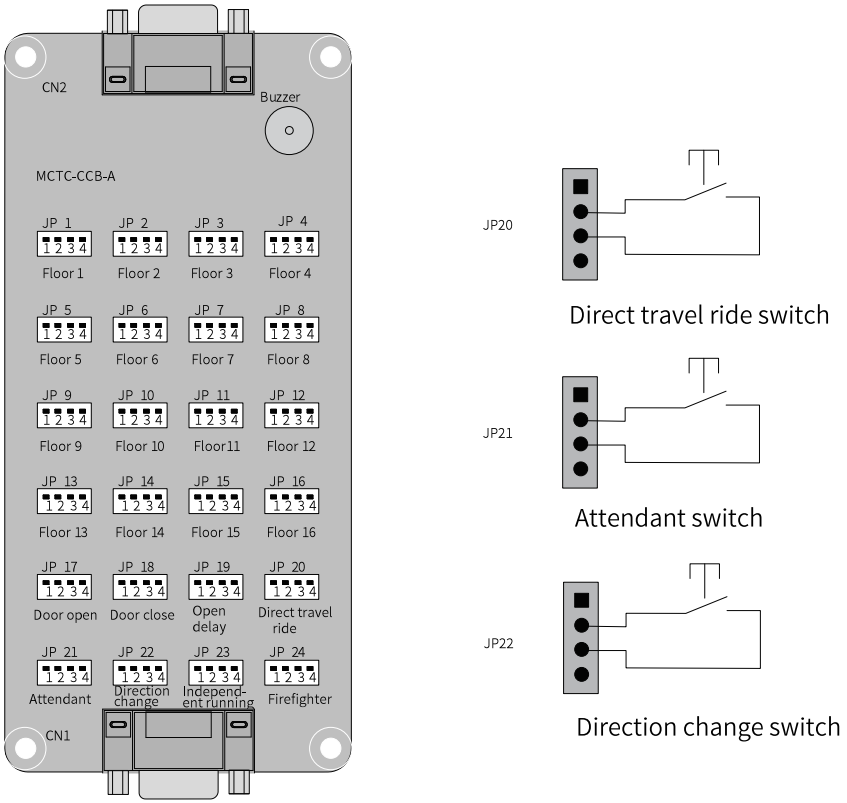


Figure 5-1 Wiring for attendant mode

- After pins 2 and 3 of JP21 of the CCB are ON, the elevator enters the attendant state.
- After pins 2 and 3 of JP20 of the CCB are ON, the elevator enters the direct travel ride state.
- When pins 2 and 3 of JP22 on the CCB operate, the elevator in the attendant state changes its running direction once.

Parameters

Param.	Name	Range	Default
F5-00	Attendant/normal state switchover time	3 to 200	3
F6-41	Program control selection 2	bit10: Elevator lock in the attendant state	0
F6-43	Attendant function selection	bit0: Calls canceled after entering the attendant state bit1: No response to hall calls bit2: Attendant/normal state switchover bit3: Door close at jog bit4: Automatic door close bit5: Buzzer tweeting at intervals in the attendant state bit6: Continuous buzzer tweeting in the attendant state bit7: Car call button blinking to prompt	128

Attendant/Automatic state switchover: If there is a hall call from another floor in attendant state, the system automatically switches over to the automatic (normal) state after the time set in F5-00. After this running is completed, the system automatically restores to the attendant state (enable through F6-43 bit2). When F5-00 is smaller than 5, the attendant/automatic switchover function is disabled.

5.2 Fire Emergency Function

Function

Returning to fire emergency floor:

- The elevator clears car calls and hall calls automatically.
- The elevator stops at the nearest floor without opening the door, and then directly runs to the fire emergency floor.
- The elevator keeps the door open after arriving at the fire emergency floor.
- If the elevator is under parallel/group control, it will exit automatically after entering the fire emergency running state.

Firefighter operation:

- The elevator responds only to car halls, and only one call can be registered.
- The elevator does not open/close the door automatically. You need to press (jog) the button for door open/close control.
- The light curtain signal input is inactive, and safety edge signal input is active.

Note

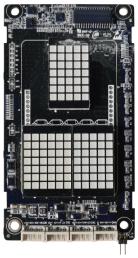
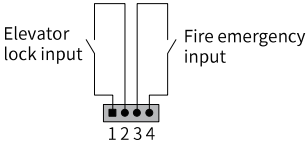
The system offers the function by default. Certain actions can be modified by parameter setting.

Wiring

State of returning to fire emergency floor

1. Fire emergency input on the HCB

Table 5–1 Fire emergency signal input on the HCB

HCB	Terminal name	Description	Layout
MCTC-HCB-R600  MCTC-HCB-D630 	XF/ST	Interface for the fire emergency and elevator lock switches: Pins 1 and 2 are for elevator lock input; Pins 3 and 4 are for fire emergency input.	

2. Fire emergency input on the MCB

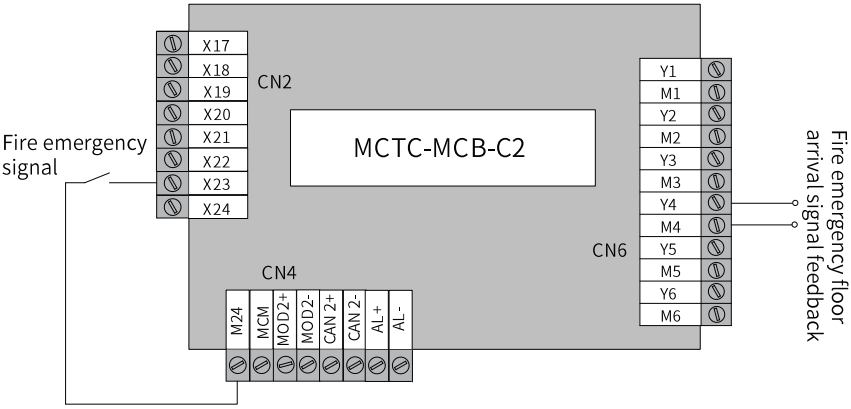


Figure 5-2 Wiring of fire emergency input signal on the MCB

Param.	Name	Range
F5-23	X23 input function selection	11: Fire emergency signal NO 43: Fire emergency signal NC
F5-29	Y4 output function setting	Fire emergency floor arrival signal feedback

Firefighter operation state

1. Enter firefighter operation on the CCB

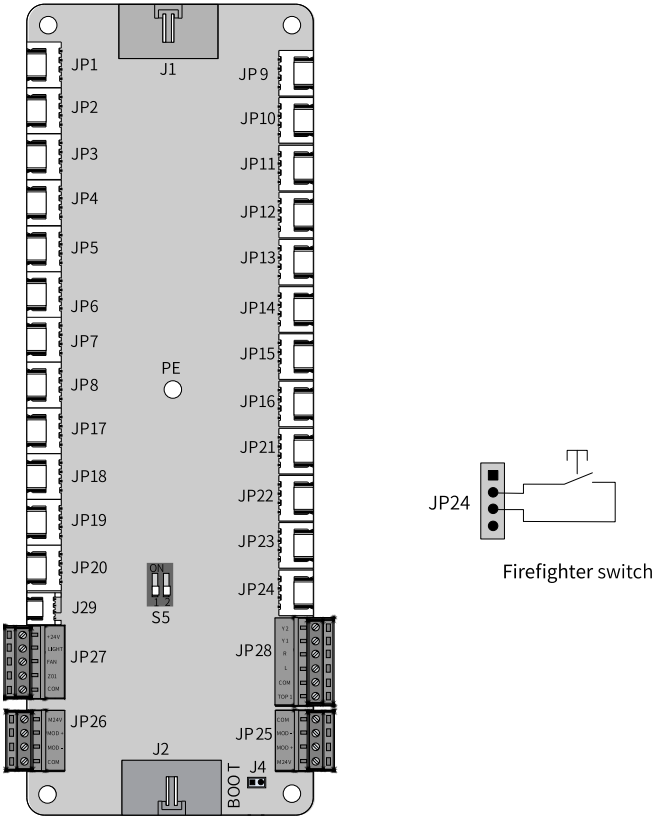


Figure 5-3 Wiring of firefighter operation signal on the CCB

2. Enter firefighter operation state on the MCB

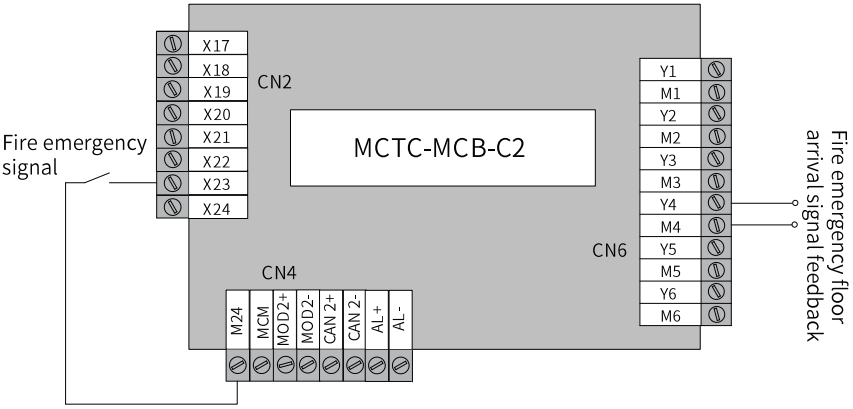


Figure 5-4 Wiring of firefighter operation signal on the MCB

Param.	Name	Range
F5-24	X24 input function selection	23: Firefighter operation signal NO 55: Firefighter operation signal NC
		87 (NO signal) or 119 (NC signal): Switchover from fire emergency floor arrival to firefighter operation state

Parameters

Param.	Name	Range	Default
F6-44	Fire emergency function selection	bit3: Arrival gong output in inspection or fire emergency state bit4: Multiple car calls registered in fire emergency state bit5: Retentive at power failure in the fire emergency state bit6: Door close by holding down the door close button bit7: Reserved bit8: Door close at car call registration bit9: Display floor number upon hall call in the fire emergency state bit10: Forced running in the firefighter state bit11: Exiting the firefighter state upon arrival at fire emergency floor bit12: Not clearing car calls at reverse door open in the firefighter state bit14: Door open by holding down the door open button bit15: Automatic door open at fire emergency floor	16456
F5-a	Xa input	11/43: Fire emergency signal NO/NC	0
F5-b	Xb input	23/55: Firefighter operation signal NO/NC	0
F5-c	Xc input	40/72: Fire emergency floor switchover signal NO/NC	0
F5-29	Y4 output	4: Fire emergency floor arrival signal feedback	0
F6-03	Fire emergency floor	F6-01 to F6-00	0
F8-12	Fire emergency floor 2	0 to F6-00	0

Input setting

The fire emergency signal is input via the fire emergency switch on the HCB at any floor, and the firefighter signal is input via JP24 on the CCB. If you input the signal through the MCB, set the parameters according to the preceding table (input through Xa and Xb).

The elevator controller supports switchover between two fire emergency floors and the switchover signal is input via the MCB (Let Xc be the input terminal).

Output setting

The fire emergency floor arrival signal is output through output terminal Y on the MCB (Let Y4 be the output terminal).

5.3 Elevator Lock Function

Elevator Lock Steps

1. After responding to all registered car calls, the elevator returns to the elevator lock floor.
2. After arriving at the elevator lock floor, the elevator door opens and then closes to stop.
3. After stopping, the elevator cancels all hall call displays and turns off the lighting and fan in the car.

Note

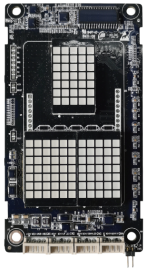
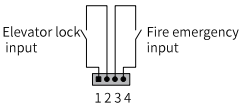
The system offers the function by default. Certain actions can be modified by parameter setting.

Wiring

The elevator lock signal input and corresponding parameter settings

1. Elevator lock input on the HCB

Table 5–2 Elevator lock signal input on the HCB

HCB	Terminal name	Description	Layout
MCTC-HCB-R600 	XF/ST	Interface for the fire emergency and elevator lock switches: Pins 1 and 2 are for elevator lock input, Pins 3 and 4 are for fire emergency input.	
MCTC-HCB-D630 			

2. Elevator lock input on the MCB

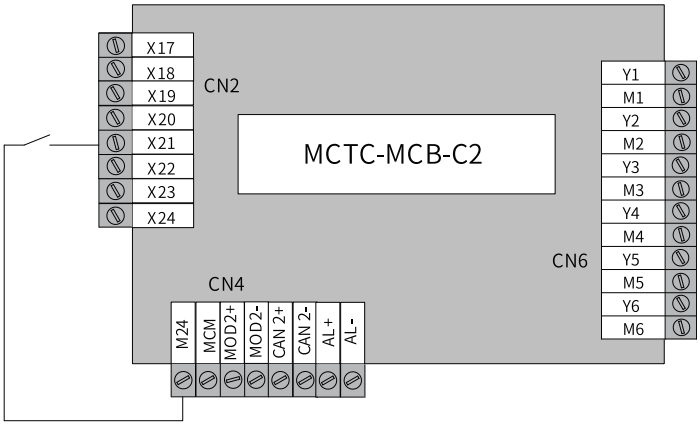


Figure 5-5 Wiring of elevator lock signal input from MCB

Param.	Name	Range
F5-21	X21 input function selection	28: Elevator lock signal NO 60: Elevator lock signal NC

Parameters

Generally, the elevator lock signal is input through the elevator lock switch on the HCB of any floor. If this signal needs to be input on the MCB, perform parameter setting (takes input terminal Xd as an example) according to the following table.

Param.	Name	Range	Default
F6-04	Elevator lock floor	F6-01 to F6-00	1
F6-38	Elevator lock start time	00.00 to 23.59	0
F6-39	Elevator lock end time	00.00 to 23.59	0
F6-40	Program control selection 1	bit5: Timed elevator lock	0
F6-41	Program control selection 2	bit8: Elevator lock at door open bit9: Display available at elevator lock bit10: Elevator lock in the attendant state	0
F6-42	Program control selection 3	bit5: Clearing calls immediately at elevator lock	0

5.4 Full-load/Overload Function

Function

Overload:

- The buzzer tweets.
- The door cannot close, even if you press the door close button.
- The car display board displays overload state with OL or OVERLOAD.
- The full-load indication or FL is displayed at the hall.

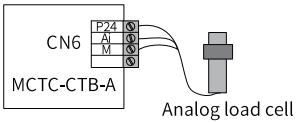
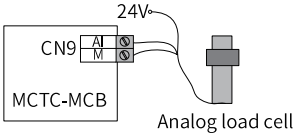
Full-load:

- The full-load indication or FL is displayed at the hall.
- Elevator car calls operate normally.
- The elevator registers hall calls but not respond to them.

The elevator overload and full-load switches are classified into analog and digital types. The following part describes their parameter settings.

Wiring

Wiring and parameter setting of analog overload/full-load switch.

Type	Wiring	Parameter Settings
Analog signal connected to the CTB	Terminals P24 and M are connected to the positive and negative poles of the load cell power cable respectively, and terminal AI is connected to the load cell signal cable. 	F5-36 = 2
Analog signal connected to the MCB	Terminal 24 V of the system is connected to the positive of the analog load cell power cable. Pins M and AI of terminal CN9 on the MCB are connected to the negative of the power cable and signal cable of the analog load cell respectively. 	F5-36 =3

When the analog load cell is used, load cell auto-tuning must be performed; otherwise, the analog load cell cannot be used. Perform overload/full-load auto-tuning process in the following flowchart.

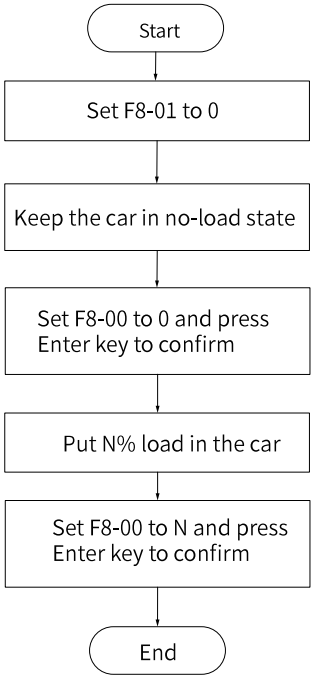


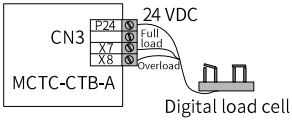
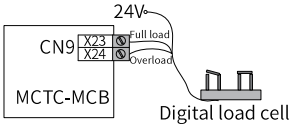
Figure 5-6 Analog full-load/overload auto-tuning flowchart

F8-06 and F8-07 record the obtained no-load and full-load data respectively after the auto-tuning has been completed. You can monitor the current car load by viewing F8-05 (Current car load). When the current load exceeds 110% of the rated load, the system reports overload warning.

Note

F8-05, F8-06 and F8-07 record the binary data indicating the car load condition rather than the actual car load or the ratio of the actual car load to the rated load.

Wiring and parameter setting of digital full-load/overload switch.

Type	Wiring	Parameter Settings
Digital signals connected to the CTB	The full-load signal and overload signal must be connected to X7 and X8 respectively 	F5-36 =1
Digital signal connected to the MCB	In this figure, pins X23 and X24 on the MCB are used for overload and full-load signal inputs respectively. 	F5-36 =0

Parameters

The parameters involved in the full-load/overload auto-tuning of the analog load cell are described in the following table.

Param.	Name	Range	Description
F8-00	Car load ratio during load cell auto-tuning	0 to 100	Set the load ratio of the car properly during analog load cell auto-tuning.
F8-01	Pre-torque selection	0: Disabled 1: Load cell pre-torque compensation enabled 2: Automatic pre-torque compensation enabled 3: Both load cell pre-torque compensation and automatic pre-torque compensation in effect	Set this parameter to 0 before starting analog load cell auto-tuning
F8-05	Current car load	0 to 255	It displays the current load condition in the car.
F8-06	No-load measured by load cell	0 to 255	It records the obtained no-load condition.
F8-07	Full-load measured by load cell	0 to 255	It records the obtained full-load condition.

Parameter settings for digital overload/full-load switch.

Type	Param.	Name	Range	Value
Setting of input type	F5-36	Load cell input selection	0: Main control board digital input 1: Car top board digital input	0
MCB input	F5-e	Xe function selection	0 to 309	14/46: Overload signal NO/NC
	F5-f	Xf function selection	0 to 309	15/47: Overload signal NO/NC
	F5-g	Xg function selection	0 to 309	38/60: Light-load signal NO/NC
CTB input	F5-25 bit6	Full-load signal NO/NC	0 to 65535	bit6 = 1 (Default: NO)
	F5-25 bit7	Overload signal NO/NC	0 to 65535	bit7 = 0 (Default: NC)

Monitoring of overload/full-load signal.

You can view F5-35 to check whether the overload/full-load signal of the system is active. Segment G indicates the full-load signal state, and DP indicates the overload signal state.

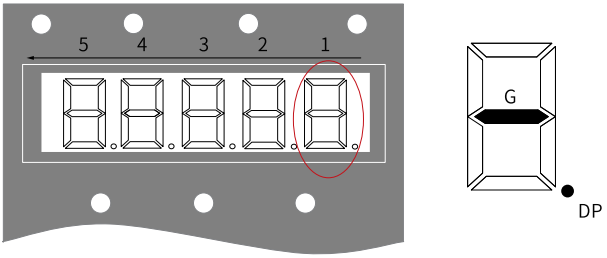


Figure 5-7 Monitoring of full-load/overload signal in F5-35

5.5 Time-based Floor Service

Function

The elevator only responds to car/hall calls of specified service floors during certain periods.

Parameters

To enable the time-based floor service, set bit0 of FE-32 to 0 (default value) and bit8 to 1.

F6-18 to F6-25 set the time range and service floors of two groups of time-based floor services.

During non-time-based floor service periods, the elevator responds to the service floors defined in F6-05, F6-06, and F6-35. Where,

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.

For example, in the period of time-based floor service 1 (set by F6-18 and F6-19), the elevator responds only to the service floors set by F6-20, F6-21, and F6-36.

The setting of time-based service floors is the same as that of service floors in F6-05.

Param.	Name	Range	Default
FE-32	Elevator function selection 1	bit8 = 1, bit0 = 0	For FE-32 description, see *"3.2.16 Group FE: Display Setting Parameters" on page 179*
F6-18	Start time of time-based floor service 1	00.00 to 23.59	00.00
F6-19	End time of time-based floor service 1	00.00 to 23.59	00.00
F6-20	Service floor 1 of time-based floor service 1	0 to 65535	65535
F6-21	Service floor 2 of time-based floor service 1	0 to 65535	65535
F6-36	Service floor 3 of time-based floor service 1	0 to 65535	65535
F6-22	Start time of time-based floor service 2	00.00 to 23.59	00.00
F6-23	End time of time-based floor service 2	00.00 to 23.59	00.00
F6-24	Service floor 1 of time-based floor service 2	0 to 65535	65535
F6-25	Service floor 2 of time-based floor service 2	0 to 65535	65535
F6-37	Service floor 3 of time-based floor service 2	0 to 65535	65535

5.6 Time-based Door Service

To enable the time-based door service, set bit0 of FE-32 to 1 and bit8 to 0 (default value).

The service floors of time-based door service 1 (set by F6-20, F6-21, and F6-36) are set for front door, and those of time-based service 2 for rear door (set by F6-24, F6-25, and F6-37).

Param.	Name	Range	Default
FE-32	Elevator function selection 1	bit0 = 1, bit8 = 0	For FE-32 description, see *"3.2.16 Group FE: Display Setting Parameters" on page 179*
F6-18	Start time of time-based floor service 1	00.00 to 23.59	00.00
F6-19	End time of time-based floor service 1	00.00 to 23.59	00.00
F6-20	Service door 1 of time-based floor service 1	0 to 65535	65535
F6-21	Service door 2 of time-based floor service 1	0 to 65535	65535
F6-36	Service door 3 of time-based floor service 1	0 to 65535	65535
F6-22	Start time of time-based floor service 2	00.00 to 23.59	00.00
F6-23	End time of time-based floor service 2	00.00 to 23.59	00.00
F6-24	Service door 1 of time-based floor service 2	0 to 65535	65535
F6-25	Service door 2 of time-based floor service 2	0 to 65535	65535
F6-37	Service door 3 of time-based floor service 2	0 to 65535	65535

5.7 Test Function

Function

The running test parameters are set to facilitate elevator commissioning and maintenance, involving:

- Car/Hall call test
- Random running test
- Running test with certain functions disabled (hall call, door open, overload, and limit)

Before the running test at normal speed, ensure that the shaft is unobstructed and the safety circuits, door lock circuits, and shaft switches are all normal.

Parameters

The following group F7 running test parameters are set on the MCB.

Param.	Name	Range	Default
F7-00	Car call floor registered	0 to F6-00	0
F7-01	Up call floor registered	0 to F6-00	0
F7-02	Down call floor registered	0 to F6-00	0
F7-03	Random running times	0 to 60000	0
F7-04	Hall call	0: Hall call enabled 1: Hall call disabled	0
F7-05	Door open	0: Door open enabled 1: Door open disabled	0
F7-06	Overload function	0: Overload disabled 1: Overload enabled	0
F7-07	Limit function	0: Limit function enabled 1: Limit function disabled	0

Description of parameter setting:

- F7-00 = 6: The car call registered is floor 6.
- F7-01= 3: The up hall call registered is floor 3.
- F7-02= 5: The down hall call registered is floor 5.

After the parameters are set, the settings remain effective until the they are changed to 0 or a power failure occurs.

Set F-8 on the keypad, and E88 is displayed.

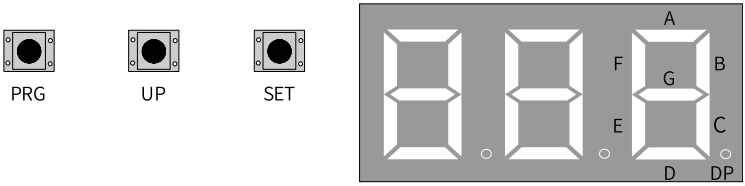


Figure 5-8 Layout of the keypad

F-1: Command input of the running floor

After you enter the F-1 menu by pressing the **PRG**, **UP** or **SET** key, the LEDs display the bottom floor of the elevator (F6-01). Use the **UP** key to set your destination floor in the range from Bottom floor to Top floor and press the **SET** key to save the setting. Then, the elevator runs to the destination floor, and the display automatically switches to the F-0 menu.

F-8: Test function

After you enter the F-8 menu, the LEDs display 0. The setting of F-8 is described as follows:

LED display	Function
1	Maintenance
2	Door open forbidden

LED display	Function
3	Overload forbidden
4	Limit switches disabled
6	Slip test
7	Manual UCMP test
8	Manual braking force test
11	Balancing factor auto-tuning
20	Dynamic braking force test (MRL)
24	Ascending car overspeed protection (ACOP) test
25	Time limiter test
26	Shorting motor stator braking test

After the setting from 0 to 30 is completed, press the **SET** key. The LEDs flash "E88", indicating the elevator is under test. When you press the **PRG** key to exit, F-8 restores to 0 automatically.

Maintenance operation mode description: The system is in normal and parking states.

- Set F-8 to 1 to enter the maintenance operation mode.
  - Display E88, clear hall call registration, and respond to all car calls.
  - The door closes and door open/close is prohibited after reaching the door close limit.
  - Prohibit hall calls and the remote call commands.
  - Long press **UP** on the keypad to register the top car call and **SET** to register the bottom car call (rising edge 2s).
  - As the elevator runs to the top floor, the current floor and T01 are displayed in the car. As the elevator runs to the bottom floor, the current floor and T02 are displayed alternately. At stop, E88 is flashed.
- When the elevator normal state switches to the EEO state or inspection mode, it exits the maintenance operation mode.

5.8 Anti-nuisance Function

Function

The system automatically judges the number of passengers in the car and compares it with the number of registered car calls. If there are excessive car calls, the system determines that it is nuisance and cancels all car calls. In this case, passengers need to register correct car calls again.

There are three judging methods:

- Nuisance judged by load cell. The system determines that nuisance exists when the number of car calls exceeds the number of passengers in the car plus 3 (assuming the average weight of each passenger is 70 kg).

- Nuisance judged by light curtain. The system determines that nuisance exists when the light curtain signal is not received after the elevator stops in normal running for three consecutive times.
- 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 3.

Parameters

Param.	Name	Range	Default
F0-05	Rated load	300 to 9999	1000
F8-08	Anti-nuisance function	0: Disabled 1: Nuisance judged by load cell 2: Nuisance judged by light curtain 4: Nuisance judged by light-load signal	0

F0-05 sets the rated elevator load to be used in the anti-nuisance function.

When F8-08 = 4, the light-load signal is used for judging nuisance. Below 30% of the rated load is considered as light load.

5.9 Accessibility Function

Function

This function, which allows wheelchair passengers to use the elevator conveniently, is implemented using the operation box and the hall call box for the disabled.

- If there is a call at this floor from the disability operation box, the door open holding time is prolonged.
- If there is a door open command from the operation box for the disabled, the door open holding time is prolonged.
- If there is a call registered using the hall call box for the disabled, the door open holding time is prolonged.

Wiring

Disability operation box inside the car:

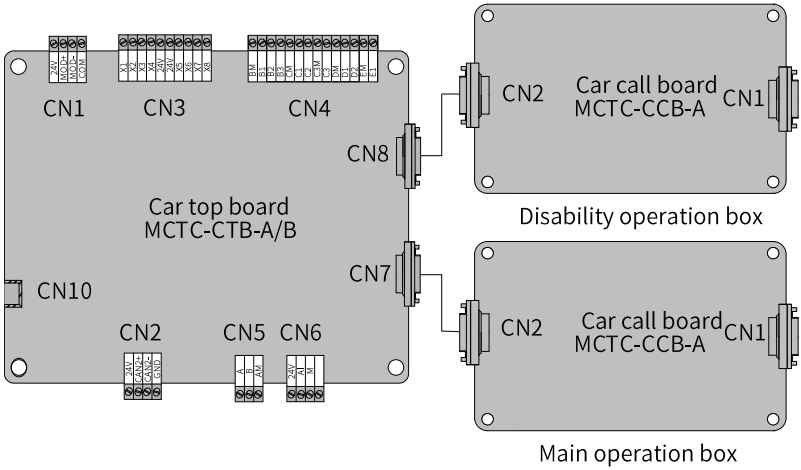


Figure 5-9 Wiring of disability operation box 1

CN8 as the interface for the disability operation box (enable through F6-40 bit12)

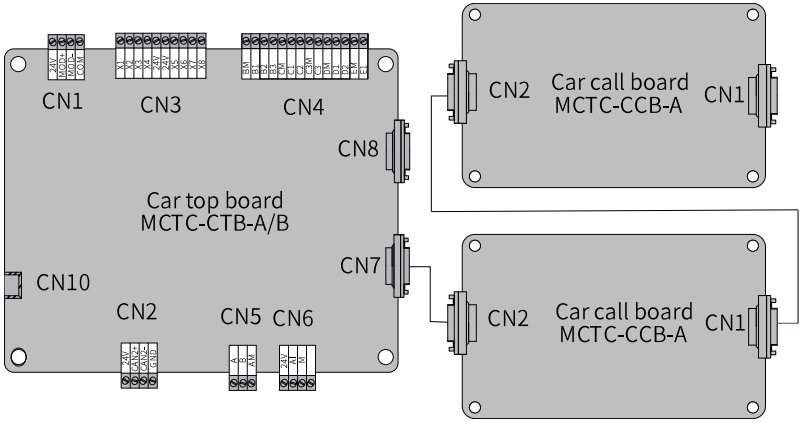


Figure 5-10 Wiring of disability operation box 2

The second CCB in cascade connection as the interface for the disability operation box (enable through F6-40 bit13 and bit14)

Disability function enabled by HCB-B:

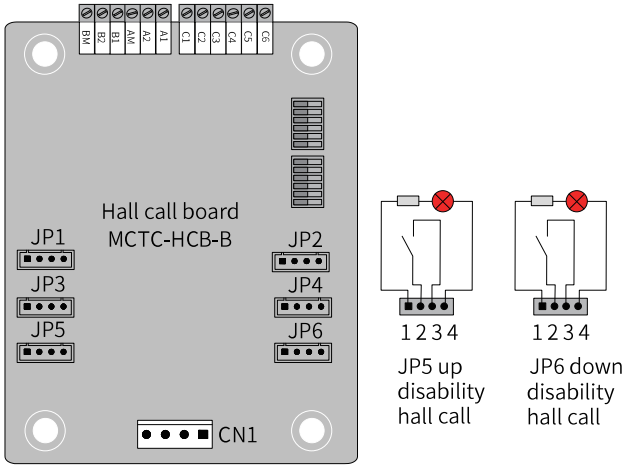


Figure 5-11 Wiring of accessibility function enabled by MCTC-HCB-B

Parameters

Param.	Name	Range	Default
F6-40	Program control selection 1	bit0: Accessibility function selection bit12: Car call auxiliary command terminal used for accessibility function bit13: Duplicated command used as accessibility and rear door functions (0: rear door function; 1: accessibility function) bit14: Car call command duplication	0
FB-19	special door open holding time	10 to 1000	30

FB-15 is used to set the door open holding time when there is a disability call.

The following table describes the setting of F6-40.

bit	Function definition	Description
bit0	Accessibility function selection	Enable the accessibility function
bit12	Car call auxiliary command terminal used for accessibility function	Used to set the CTB auxiliary command terminal (CN8) as input of calls from the disabled (command duplication is not required).

bit	Function definition	Description
bit13	Duplicated commands used as accessibility function and rear door function	It is valid only when the function of bit14 is enabled: 1: Accessibility function 0: Rear door function
bit14	car call command duplication	Car call command duplication: A. Function disabled: CN7 is used for front door calls or ordinary calls, and CN8 is used for rear door calls or disability calls B. Function enabled: For CN7 and CN8, floors 1 to 16 are for front door calls or ordinary calls, and floors 17 to 32 for rear door calls or disability calls

5.10 VIP Running Function

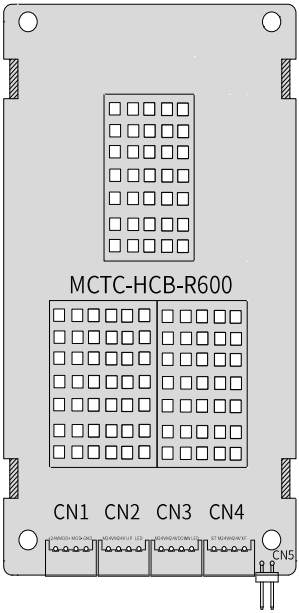
Function

After the VIP function of the NICE3000^{new} system is enabled, the elevator directly runs to the VIP floor as a priority service.

- The elevator responds only to car calls. Registered hall calls are cleared automatically.
- The elevator does not close the door automatically. You need to hold down the door close button to close the door. If you release the door close button during door close, the elevator doors will open again automatically.
- The VIP running times is set in F6-46 bit8.
- When this parameter is enabled, the elevator responds to only one car call at a time, with the most recent call taking precedence. The system automatically exits VIP mode after completing a single trip. If this parameter is disabled, there is no limit on the number of car calls; a timer starts after each stop, and the elevator proceeds to the next car call after a 30-second delay (provided there is no manual door operation). Once all registered car calls are serviced, the system automatically exits VIP mode. Additionally, if the system enters VIP mode but no car call is registered, it will automatically exit the VIP service after 30s.

Wiring

VIP enabled by HCB terminal:



Input of JP1 and JP2 on the HCB

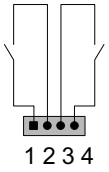


Figure 5-12 Wiring of VIP enabled by HCB

Parameters

Param.	Name	Range	Default
F6-12	VIP floor	0 to F6-00	8
F6-59	Program function selection 5	bit9: VIP function	bit9 =1
F6-46	VIP function selection	bit0: VIP enabled by hall call (at VIP floor) bit1: VIP enabled by terminal bit8: Number of VIP car calls limited	0

Example: Using VIP service and setting VIP floor

1. Parameter setting (for example, set floor 8 as the VIP floor out of elevator floors from 1 to 20)

Param.	Name	Range	Value	Note
F6-00	Top floor	F6-01 to 47	20	Set the top floor and bottom floor of the elevator, determined by the number of actually installed leveling plates
F6-01	Bottom floor	1 to F6-00	1	
F6-12	VIP floor	0 to F6-00	8	Set floor 8 as the VIP floor
FE-32	Elevator function selection 1	bit9: VIP function	bit9 =1	Enables the VIP function.
F6-46	VIP function selection	bit8: Number of VIP car calls limited	-	If this function is enabled, only one car call can be selected simultaneously in the VIP state. When the parameter is set invalid, the number of car calls is not limited in the VIP state.

2. Methods of enabling VIP

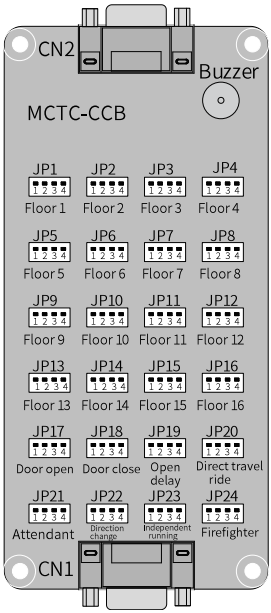
- VIP enabled by hall call at VIP floor: The elevator enters the VIP state only when there is a hall call (input by the up/down hall call button) at the VIP floor. The parameters to be set are as follows.

Param.	Name	Range	Value	Note
F6-46	VIP function selection	bit0: VIP enabled by hall call at VIP floor	bit0 = 1	The elevator enters the VIP state when there is an active hall call at the VIP floor.

- VIP enabled by terminal: Make the elevator enter the VIP state through the terminal for VIP hall call at any floor. After the VIP becomes active in this mode , the elevator directly runs to the VIP floor and automatically opens the doors for passengers. The parameters to be set are as follows.

Param.	Name	Range	Value	Note
FD-07	HCB: JP1 input selection	Elevator lock signal NO 2: Fire emergency signal NO 3: Present floor NO forbidden 4: VIP signal NO 5: Security signal NO 6: Door close button input NO	FD-07 = 4	The parameters are used to set the input functions of JP1 and JP2 on the HCB. The settings are effective for all HCBs. You can use either of JP1 and JP2 for VIP input.
FD-08	HCB: JP2 input selection		FD-08 = 4	
F6-46	VIP function selection	bit1: VIP enabled by hall calls at VIP floor	bit1 = 1	After any terminal for VIP hall call becomes active, the elevator enters the VIP state.

- Enter VIP state in the car (independent operation function).



The CCB JP23 operates independently.

Param.	Name	Range	Value	Note
F6-42	Program control selection 3	bit11: Independent switch exiting from parallel control	0, 1	• When it is set to 1, switching a single elevator to independent mode will exit from parallel control and the elevator will operate in normal mode • When it is set to 0, switching a single elevator to independent mode will exit from parallel control and the elevator will operate in VIP mode

5.11 UCMP Function

Function (Default) Description

When the landing door is unlocked and the car door is not closed, accidents may be caused by unintended car movement at the landing level if any component guaranteeing safe running fails. The UCMP device will stop the elevator to ensure the passengers' safety.

Table 5–3 Selection of the detection component

Item	Synchronous motor		Asynchronous motor
Model	MCTC-SCB-A4 (single door)	MCTC-SCB-D4 (through-type door)	MCTC-SCB-D4

Note

Use MCTC-SCB-D and MCTC-SCB-D4 for the synchronous motor and through-type door.

Installation of Leveling and Door Zone Switches

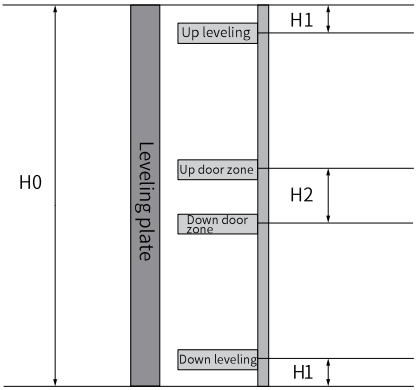


Figure 5-13 Recommended installation of UCMP switches

Requirements for UCMP switch installation:

- H1 ≤ 20 mm, H2 = 60 mm
- The leveling plate length H0 cannot exceed 300 mm. The recommended length is 300 mm.
- Two door zone switches are required. The length of leveling plates is determined by the actual door open area (door vane length) of the elevator.
- Door zone switches of NO type must be used.

Parameters

Param.	Name	Range
F-8	Test Function	7: Enter the UCMP test using the keypad
F3-24	Program function selection	0: Reserved 1: Slip experiment enabled 2: Manual test of UCMP

Param.	Name	Parameter Settings
F5-01	X1 function selection	01: Up leveling signal NO
F5-03	X3 function selection	02: Down leveling signal NO

Test method:

1. Stop the car in the door zone, with the car door closed and emergency electrical operation (EEO) mode enabled.
2. Set parameters on the keypad or operating panel to enable the UCMP test function by setting F-8 to 7 or F3-24 to 2. The MCB displays E88 when the elevator enters the UCMP test state.

3. Unplug the UCMP terminal (on interface board for machine room type and monitoring board for machine-room-less type).
4. Operate the EEO device for the elevator to run in the up direction.
5. In case of the elevator car move away from the door zone unexpectedly, it automatically triggers the UCMP module to stop the elevator. Also, the E65 fault is reported for possible movement prevention.
6. Use the triangle key to open the landing door that concerns, and measure whether the car moving distance meets the requirements of a type test.
7. Reset: E65 cannot be reset through power-off. It must be reset manually:
   - For elevators without an auxiliary brake, press the STOP key on the operator to reset E65. The elevator restores automatic running for re-leveling.
   - For elevators with an auxiliary brake, reset the auxiliary brake first and press the STOP key on the operator to reset E65. The elevator restores automatic running for re-leveling.

Note

- When the elevator is not in the inspection state or the door zone, the setting of F-8 to 7 or F3-24 to 2 is invalid.
- After F-8 is set to 7 or F3-24 is set to 2, clearing is automatically performed after one running and after power failure.
- In the UCMP test mode, the elevator linearly accelerates to the inspection speed at the acceleration rate set by F3-08 after startup.

5.12 Braking Force Detection

Function

To prevent motor brake failure for safe running, check whether the braking force meets the requirements periodically. The control system will monitor the braking force regularly.

Note

The system offers the function by default. Certain actions can be modified by parameter setting.

Parameters

Param.	Function	Range	Default	Note
F2-32	Torque output duration	1s to 10s	5	When it is set to 0, the torque output lasts for 5s by default.
F2-33	Torque amplitude	1% to 150% of rated motor torque	110	When it is set to 0, 80% of the rated motor torque is used by default
F2-34	Number of pulses for abnormality detection	1 to 100 encoder feedback pulses	0	When it is set to 0, 30 encoder feedback pulses are used by default
F2-35	Threshold of excessive slip distance	1° to 20° (mechanical motor rotation angle)	0	When it is set to 0, the system uses 5° for synchronous motors and 10° for asynchronous motors by default
F-8	Test function	8: Manual test on braking force	0	Use the keypad to start the braking force test
F7-09	Braking force detection result	0 to 2	0	-
F7-10	Countdown time for braking force detection	0 to 1440	1440	The countdown time is automatically restored to 1440 after the test finishes

Manual Test

1. The system is in inspection state and the inspection switch is active.
2. The elevator stops in the door zone with the door lock closed.
3. Set F-8 (Test function) to 8 using the keypad.
4. When the system enters the test state, the MCB displays E88.
5. The shorting motor stator and RUN contactors have output, and the brake contactor has no output.
6. The system starts testing according to the output torque related to the braking force.
7. E88 disappears on the MCB and the test is completed. F7-09 indicates the test result. If F7-09 is 2, E66 is reported immediately for test failure, then the elevator stops running, and the fault cannot be reset.

Automatic Test

After the test condition 1 is met for braking force detection, the system automatically enters the test state. The steps are the same as steps 4, 5, 6, and 7 of the manual test.

Fault E66 cannot be reset through power-off and can be automatically reset only when a new braking force test is performed with qualified results.

Countdown function: After 12 hours pass, the system starts to judge whether the following condition 1 is met. If the braking force test has been performed, the countdown parameter (F7-10) restores to 24 hours. If not, the system proceeds to condition 2 (forced test).

During the automatic braking force test, no fault is reported for hall calls. The keypad displays E88 to indicate the test state. Hall calls can be registered, but the elevator does not respond to them. After the test is completed, the system returns to normal state and responds to registered hall calls, but the car calls are canceled. The elevator doors cannot be opened or closed.

Test Conditions:

Condition 1: Under the condition of no car and hall calls, the braking force test is performed after the elevator energy-saving time is reached or after 3 minutes.

Condition 2: The system makes a judgment 10 minutes ahead. When the time set in F7-10 is 10 minutes or below, the buzzer tweets for 30s. You can disable the buzzer by setting F8-19 bit13. In this case, the registered hall calls are kept, but the car calls are canceled. The elevator doors can be opened or closed. The system starts the forced braking force test after door close.

Single-arm Test

- Use relays Y2 and Y2A for left and right brake arm control.

Param.	Function	Range	Default	Note
F6-54 bit9	Single-arm braking force detection	0 to 1	0	Set to 1 to enable the detection
F5-27	MCB Y2 output function setting	33	2	Left brake output
F5-45	MCB Y2A output function setting	34	0	Right brake output
F5-07	X7 input function setting	74 for NO and 106 NC	106	Left brake contactor feedback
F5-05	X5 input function setting	75 for NO and 107 NC	107	Right brake contactor feedback
F2-32	Torque output duration	1s to 10s	5	When it is set to 0, the torque output lasts for 5s by default.
F7-17	Single-arm torque amplitude	1% to 150% of the rated motor torque	30	When it is set to 0, 30% of the rated motor torque is used by default

Param.	Function	Range	Default	Note
F2-34	Number of pulses for abnormality detection	1 to 100 encoder feedback pulses	0	When it is set to 0, 30 encoder feedback pulses are used by default
F2-35	Threshold of excessive slip distance	1° to 20° (mechanical motor rotation angle)	0	When it is set to 0, the system uses 5° for synchronous motors and 10° for asynchronous motors by default
F-8	Test function	8: Manual test on braking force	0	Use the keypad to start the braking force test
F7-09	Braking force detection result	0 to 2	0	-
F7-10	Countdown time for braking force detection	0 to 1440	1440	The countdown time is automatically restored to 1440 after the test finishes

Manual Test

1. The system is in inspection state and the inspection switch is active.
2. The elevator stops in the door zone with the door lock closed.
3. Set F-8 (Test function) to 8 using the keypad.
4. When the system enters the test state, the MCB displays E88.
5. The shorting motor stator and RUN contactors have output, and the brake contactor has the left brake control output first.
6. The system starts testing according to the output torque related to the braking force.
7. After the left brake test, it has right brake control output.
8. E88 disappears on the MCB and the test is completed. F7-09 indicates the test result. If F7-09 is 2, E66 is reported immediately for test failure, then the elevator stops running, and the fault cannot be reset.

Automatic Test

After the test condition 1 is met for braking force detection, the system automatically enters the test state. The steps are the same with the manual test.

Fault E66 cannot be reset through power-off and can be automatically reset only when a new braking force test is performed with qualified results.

Countdown function: After 12 hours pass, the system starts to judge whether the following condition 1 is met. If the braking force test has been performed, the countdown parameter (F7-10) restores to 24 hours. If not, the system proceeds to condition 2 (forced test).

During the automatic braking force test, no fault is reported for hall calls. The keypad displays E88 to indicate the test state. Hall calls can be registered, but the elevator does not respond to them. After the test is completed, the system returns to normal

state and responds to registered hall calls, but the car calls are canceled. The elevator doors cannot be opened or closed.

Test conditions:

Condition 1: Under the condition of no car and hall calls, the braking force test is performed after the elevator energy-saving time is reached or after 3 minutes.

Condition 2: The system makes a judgment 10 minutes ahead. When the time set in F7-10 is 10 minutes or below, the buzzer tweets for 30s. You can disable the buzzer by setting F8-19 bit13. In this case, the registered hall calls are kept, but the car calls are canceled. The elevator doors can be opened or closed. The system starts the forced braking force test after door close.

- Use PCB-D1 brake power supply board in communication mode
  Control the left and right brake output independently through the power supply board.

Param.	Function	Range	Default	Note
F6-54 bit11	Communication-type brake power supply board	0 to 1	bit9 =0	Enable the brake power supply board in communication mode function
F6-54 bit9	Single-arm braking force detection	0 to 1	0	Set to 1 to enable the detection
F5-27	Y2 output setting	2	2	Only set one brake output
F5-07	X7 input function setting	74 for NO and 106 NC	106	Left brake contactor feedback
F5-05	X5 input function setting	75 for NO and 107 NC	107	Right brake contactor feedback
F2-32	Torque output duration	1s to 10s	5	When it is set to 0, the torque output lasts for 5s by default.
F7-17	Single-arm torque amplitude	1% to 150% of the rated motor torque	30	When it is set to 0, 30% of the rated motor torque is used by default
F2-34	Number of pulses for abnormality detection	1 to 100 encoder feedback pulses	0	When it is set to 0, 30 encoder feedback pulses are used by default
F2-35	Threshold of excessive slip distance	1° to 20° (mechanical motor rotation angle)	0	When it is set to 0, the system uses 5° for synchronous motors and 10° for asynchronous motors by default
F-8	Test function	8: Manual test on braking force	0	Use the keypad to start the braking force test

Param.	Function	Range	Default	Note
F7-09	Braking force detection result	0 to 2	0	1: Pass 2: Fail
F7-10	Countdown time for braking force detection	0 to 1440	1440	The countdown time is automatically restored to 1440 after the test finishes

5.13 Shorting PMSM Stator Scheme

Background

Shorting PMSM stator means shorting phases U, V and W of the PMSM and creates a star connection, which produces resistance to restrict movement of the elevator car. This prevents car slip during brake failure and ensures safety.

Overview

An independent contactor for shorting PMSM stator is installed. The NO contact of the contactor is connected in series with the coil circuit of the RUN contactor, to ensure that output short circuit does not occur when the parameter setting is incorrect.

- Scheme 1: for AC shorting option
- Scheme 2: for DC shorting option

Scheme 1

Wiring

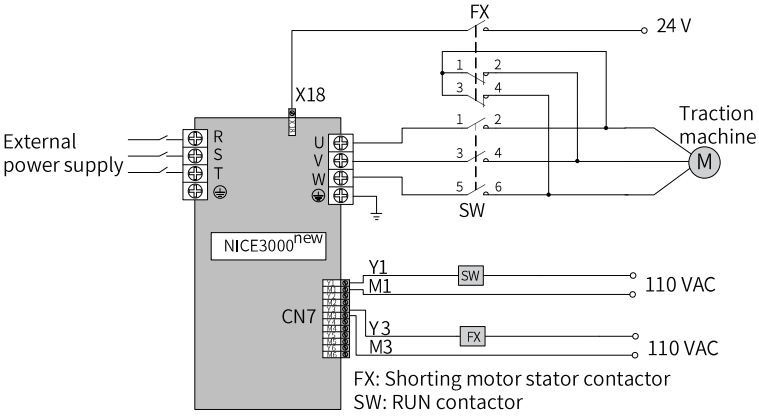


Figure 5-14 Wiring of the independent shorting motor stator contactor

Parameters

The parameter setting is described in the following table.

Param.	Name	Value	Description
F5-18	X18 function selection	30	Allocate X18 with output of shorting PMSM stator feedback signal
F5-28	Y3 function selection	12	Allocate Y3 with output of shorting PMSM stator contactor control
FE-33	Elevator function selection	-	bit8 = 0: NC output contactor bit8 = 1: NO output contactor

Scheme 2

Wiring

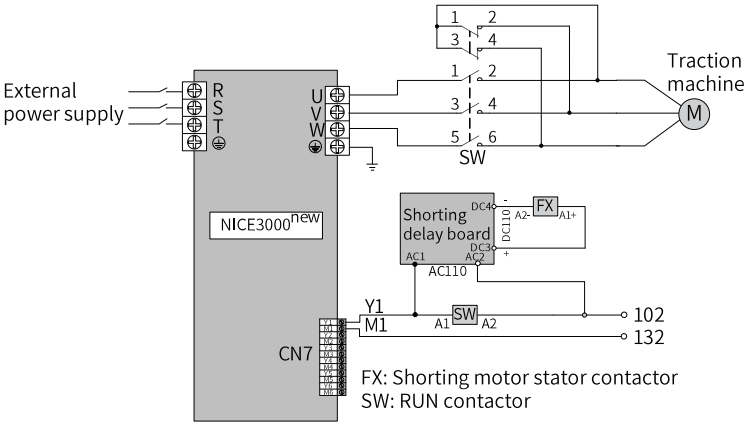


Figure 5-15 Wiring of shorting stator delay board

Parameters

No parameter configuration is required, as delay control is managed by a shorting stator delay board. Upon a running output, the board 110 VAC input is energized, providing power to the 100 VDC control coil; the FX (shorting stator) contactor and SW (RUN) contactor then pick up, and the elevator begins operation. When the elevator stops, the SW contactor releases. After a 1s to 2s delay provided by the board, the FX contactor releases, achieving the delayed shorting stator function.

5.14 Automatic Emergency Evacuation at Power Failure

Background

Passengers may be trapped in the car if the power fails during the use of an elevator. Therefore, an emergency evacuation device that can automatically release passengers at power failure is required.

Overview

Working principle:

After the failure of mains power supply, the standby power supply is activated to power up the control system. The controller drives the motor to move the car to the leveling zone where passengers can go out.

There are mainly two backup power supply systems in the industry:

Backup power supply	Description
Emergency evacuation by Uninterruptible Power Supply (UPS)	The UPS serves as a backup power supply device. The UPS RUN contactor and UPS control circuit are added in the control cabinet.
Automatic Rescue Device (ARD)	The ARD is used for emergency evacuation with its backup battery. It does not require any additional costs. However, you must reserve the input terminal within the control cabinet specifically for the emergency evacuation signal feedback. The ARD control system is designed to constantly monitor the mains power supply status. If it detects a failure, it immediately switches to the backup battery and executes the emergency evacuation routine.

UPS (220 V)

Parameters

Parameter setting:

Param.	Value	Description	Note
F8-10	1: UPS	Emergency evacuation mode selection	-
F5-20 (X20)	59	Emergency evacuation signal	Assume that X20 is used as the NC input of emergency evacuation signal
F5-31 (Y6)	13	Emergency evacuation output at power failure	Only Y6 can be used for emergency evacuation output.

The UPS capacity recommended for the controller power rating is listed in the following table.

UPS capacity (kW)	Controller power (kW)
1 kVA (0.7 to 0.8)	P ≤ 5.5
2 kVA (1.4 to 1.6)	5.5 < P ≤ 11
3 kVA (2.1 to 2.4)	15 ≤ P ≤ 22

5.15 Elevator Emergency Automatic Rescue Device (ARD)

Wiring

The following figure shows the wiring of the ARD.

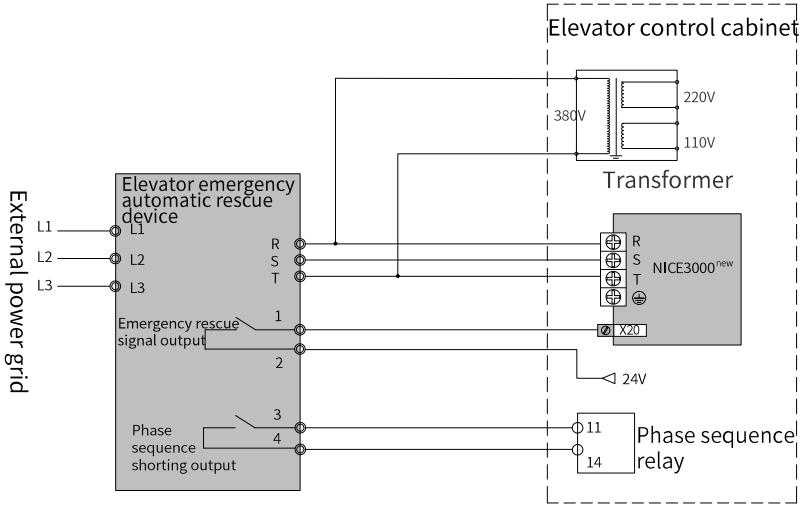


Figure 5-16 Wiring of three-phase (380 V) elevator ARD

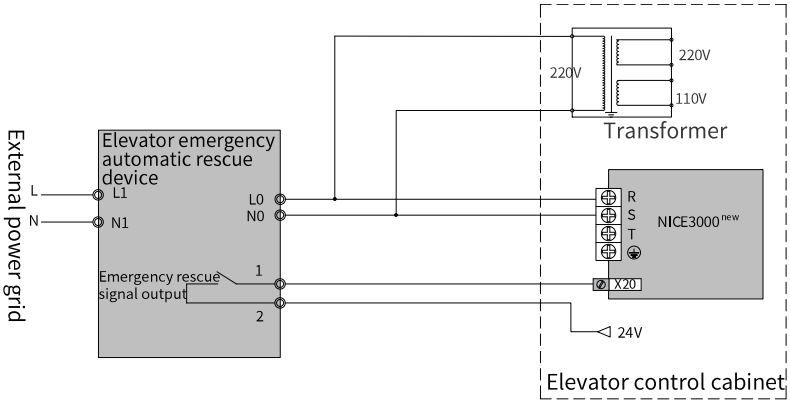


Figure 5-17 Wiring of single-phase (220 V) elevator ARD

Parameters

Parameter setting:

Param.	Value	Description	Note
F8-10	1: UPS	Emergency evacuation mode selection	-
F5-20 (X20)	27	Emergency evacuation signal (NO)	Assume that X20 is used as the NO input of emergency evacuation signal.

Note

- Select an ARD with nominal output power equal to or higher than the rated motor power.
- For the 380 V ARD, only two phases are used for emergency evacuation output. Therefore, ensure the correct wiring on the controller side. The output is single-phase 380 V power supply. Ensure that the input side of the transformer match this power.

Other parameters related to emergency evacuation:

Param.	Range	Description
F3-22	0.300 m/s^2 to 1.300 m/s^2	Acceleration rate at emergency rescue
F6-48	0.010 m/s to 0.630 m/s	Emergency evacuation switching speed
F6-49	0 to F6-00	Emergency evacuation parking floor
F8-09	0.020 m/s to 0.300 m/s	Emergency evacuation speed at power failure

5.16 Parallel Connection and Group Control

Background

The integrated controller provides parallel and group control of elevators (from 2 up to 6 elevators), thereby improving running efficiency and saving energy.

Overview

The NICE3000^{new} provides the function of elevator parallel and group control:

- Parallel control of two elevators implemented by directly using the CAN2 communication ports
- Group control of elevators together with the group control board MCTC-GCB-B2

5.16.1Parallel Control

The parallel control is for controlling two elevators, and group control board is needed for controlling three or more elevators.

Up to 48 floors are supported on the standard parallel control software. Also, it supports parallel and independent control of through-type door elevators.

Parallel control (CAN2 port connection of CN4)

Wiring (Twisted pair is recommended for CAN2 communication and proper MCM connection must be ensured)

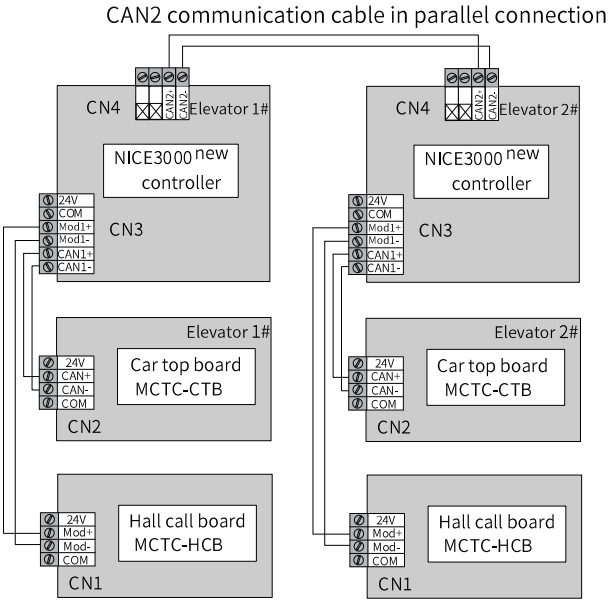


Figure 5-18 Wiring diagram of parallel control (CN4)

Before using the elevators in parallel control, set the floor offset (F6-50 ≠ 0).

User floor: the actual floor of the building

Physical floors: the floors which any elevator stops at and provides service for, or the floors installed with a leveling plate.

For the same physical floor, the leveling plate must be installed for both elevators. Even if one elevator does not need to stop at a certain floor, one leveling plate must be installed for this floor. You can set the service floors of this elevator so that it does not stop at this floor.

Set the HCB addresses for each elevator according to its physical floors. The physical floors of different elevators may vary.

Set the top floor (F6-00) and bottom floor (F6-01) of each elevator based on actual physical floors.

Parameters

Param.	Description	Range	Setting in parallel connection	Note
F6-07	Number of elevators in group control	1 to 8	2	-
F6-08	Elevator No.	1 to 8	Master elevator: 1 Slave elevator: 2	-
F6-09	Program selection	-	bit3 = 1: Parallel/Group control implemented at CAN2	Set bit3 to 1 when the CAN2 communication port of terminal CN4 is used for parallel control

Two elevators in parallel connection:

Elevator 1 has one basement user floor and four above-ground user floors, but it stops only at floors B1, 1, 2, and 3.

Elevator 2# has four above-ground user floors, but stops only at floor 1, floor 3, and floor 4.

The following figure shows the floor layout of the two elevators in parallel control.

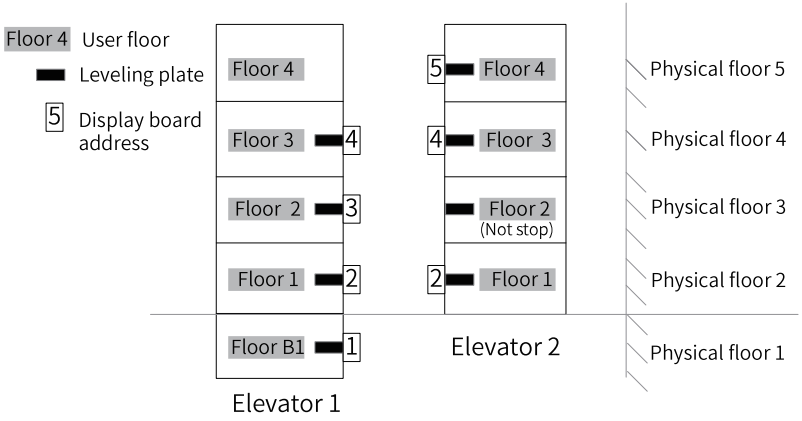


Figure 5-19 Floor layout of two elevators in parallel control

Corresponding parameter settings are as follows.

Table 5–4 Floor address setting for elevators in parallel control

Elevator		Elevator 1		Elevator 2#	
Number of elevators in group control (F6-07)		2		2	
Elevator No. (F6-08)		1		2	
User floor	Physical Floors	HCB address	HCB display	HCB address	HCB display
B1	1	1	FE-01 = 1101	1	FE-01 =1901
1	2	2	FE-02 =1901	Non-stop floor, no hall call, but leveling plate required	-
2	3	3	FE-03 =1902	3	FE-03 =1903
3	4	4	FE-04 =1903	4	FE-04 =1904
4	5	No hall call	No hall call	-	-
Bottom floor of the elevator (F6-01)		1		1	
Top floor of the elevator (F6-00)		4		4	
Service floors (F6-05)		65535		65533 (does not stop at physical floor 2)	
Floor offset (F6-50)		0		1	

After commissioning is completed, the floor offset function can be set with F6-50 (the value being the lowest floor difference of elevators) on the elevator with the much larger lowest floor value.

After the setting, there is no need to reset the hall calls or car calls.

5.16.2Group Control

A group control board (MCTC-GCB-B2) is additionally required to implement group control of more than two elevators.

- One GCB supports group control of up to six elevators.
- If group control of more than 6 elevators is required, two GCBs need to be installed. This scheme is customized. For details, consult the manufacturer.

Wiring

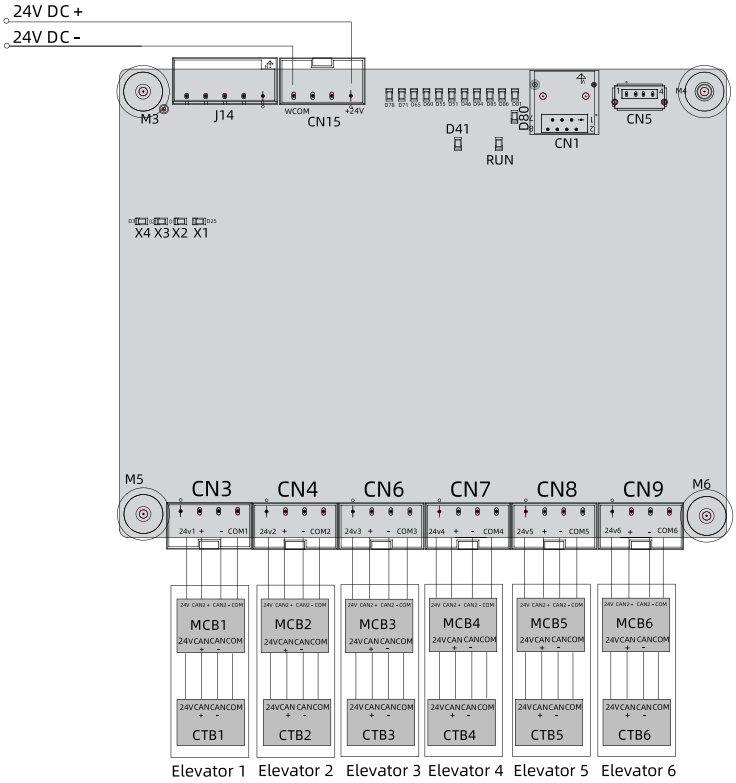


Figure 5-20 Wiring of group control

Parameters

Param.	Description	Range	Setting in group control	Note
F6-07	Number of elevators in group control	1 to 8	1 to 8	Actual number of elevators in group control
F6-08	Elevator No.	1 to 8	1 to 8	1: Elevator 1 2: Elevator 2 3: Elevator 3 4: Elevator 4

GCB Group Control Mode Setting:

Function	Param.	Description
Destination floor group control/ Hybrid group control	F5-00 bit3 = 1	-
Conventional group control	F5-00 bit3 = 0	Default value:0

Individual Elevator Group Control Function Setting:

To coordinate with the group control board mode, individual elevator settings are adjusted as follows:

Function	Param.
Destination floor group control/ Hybrid group control	F6-07 = 8, F6-08 = 1/2/3/4/5/6/7/8 F6-09 bit3= 1, bit15= 1
Conventional group control	F6-07 = 2, F6-08 = 2 F6-09 bit3= 1, bit15= 0

5.17 Through-type Door

Background

The through-type door solution is applied when separate control on two doors of an elevator is required.

Overview

The NICE3000^{new} system supports four control modes: mode 1, mode 2, mode 3, and mode 4, as described in the following table.

Table 5–5 Through-type door control modes

Type	Door control mode	Function
Method 1	Simultaneous control of the front and rear doors	The front and rear doors open simultaneously upon arrival for any calls
Method 2	Door open on one side for hall calls, and door open on both sides for car calls	Hall call: The front door opens upon arrival for hall calls from the front door, and the rear door opens upon arrival for hall calls from the rear door Car call: The front and rear doors open simultaneously upon arrival for car calls

Type	Door control mode	Function
Mode 3	Door open on one side for hall calls, and manual door open control for car calls	Hall call: The front door opens upon arrival for hall calls from the front door, and the rear door opens upon arrival for hall calls from the rear door Car call: The door open mode for car calls is controlled by the switch in the car Two open modes are available: only the front door opens and only the rear door opens
Mode 4	Door open on one side for both hall calls and car calls	Hall call: The front door opens upon arrival for hall calls from the front door, and the rear door opens upon arrival for hall calls from the rear door Car call: The front door opens upon arrival for car calls from the front door, and the rear door opens upon arrival for car calls from the rear door

These through-type door control modes can be implemented by using two methods:

- 1: Application suitable for NICE3000^{new} only.
- 2: Application suitable for NICE3000^{new} and NICE3000.

Through-type Door Control Scheme (Recommended)

These door control modes in the preceding table can be implemented through the following schemes. Take 20 -floor through-type door as an example.

Wiring

COB wiring:

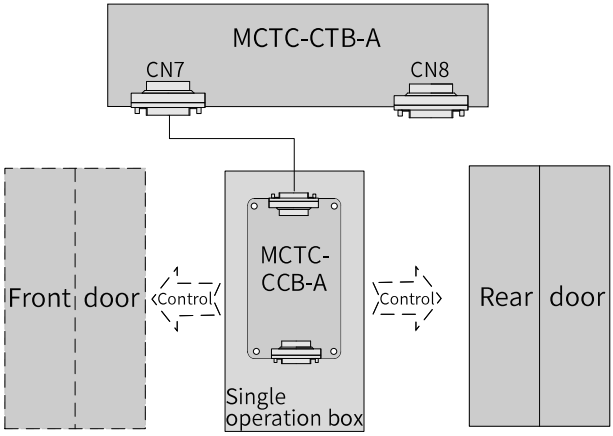


Figure 5-21 Wiring of the car CCB for single operation box

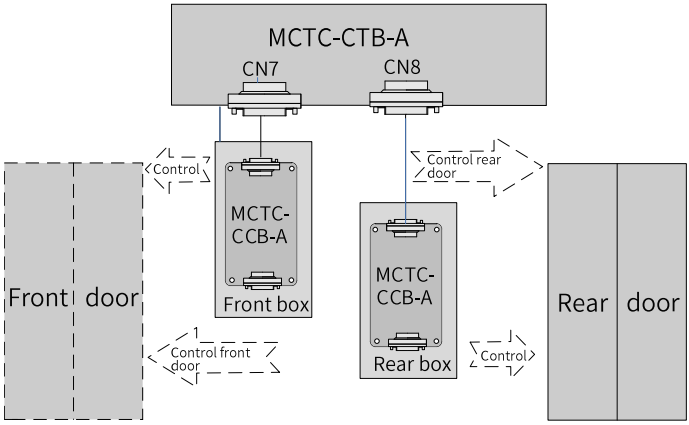


Figure 5-22 Wiring of the car CCB for dual operation boxes

Hall call setting:

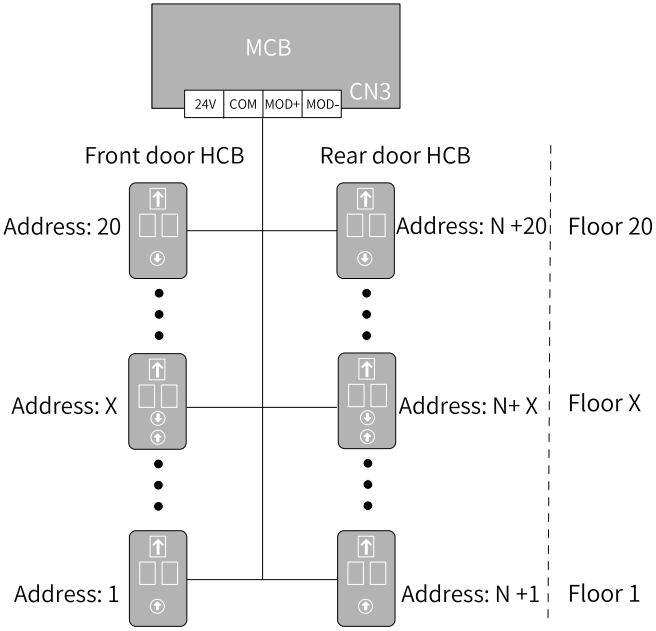


Figure 5-23 Hall call setting 1

HCB addresses of the front door: 1 to 20; HCB addresses of the rear door: N + 1 to N + 20; F8-16 = N (N ≥ F6-00).

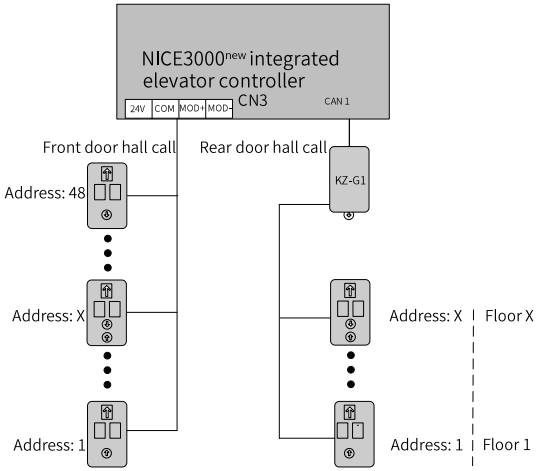
Parameters

Type	Door control mode	Parameter settings		service floor	Wiring of operation box COB	Hall call address settings
		Mode selection	Other parameters			
Mode 1	Simultaneous control of the front and rear doors	FC-04 =0	FB-00 =2 F8-16 = N (N≥ F6-00)	20	The CCB of front door is connected to CN7 on the CTB The CCB of the rear door is connected to CN8 on the CTB	Front door: (1 to 20) Rear door: (N+1 to N+20)
Mode 2	Door open on one side for hall calls, and door open on both sides for car calls	FC-04 =1	Same as mode 1	20		
Mode 3	Door open on one side for hall calls, and manual door open control for car calls	FC-04 =2 F6-40 bit4 = 1	Same as mode 1	20		
Mode 4	Door open on one side for both hall calls and car calls	FC-04 =3	Same as mode 1	20		

Note: In mode 3, the car front/rear door open/close is controlled as follows.
Control by button:
Connect the button to JP16 on the CCB, and set F6-40 bit2 to 1. When this button is steady ON, only the front door opens. When this button is steady OFF, only the rear door opens.
Control by switch:
Connect the switch to JP20 on the CCB, and set F6-40 bit15 to 1. When JP20 is ON, only the front door opens. When JP20 is OFF, only the rear door opens.

This scheme can support doors with 48 addresses.

When there are more than 48 doors for through-type use, an MCTC-KZ-G1 expansion board must be equipped. And rear door hall calls need a separate Modbus line connected to the Modbus terminal of the KZ-G1 expansion board and its HCB addresses need to be set starting from 1.



5.18 Application Scheme of Emergency Operation and Dynamic Test Device of MRL Elevator

Background

The emergency and dynamic test operating panel should provide the following functions:

- A control device for dynamic test that can be accessible and operated safely and conveniently from outside the shaft under any conditions;
- A display device or a window for direct observation of the drive motor to obtain car running direction, car arrival at the unlocking zone and car speed.

That is, you can, directly or through the display device, observe car movement direction, speed and whether the car is located in the unlocking zone. The device has permanent lighting fittings and stop mechanism or main switch.

Overview

Software implementation scheme

The MCB LEDs are used to monitor car direction, speed and door zone position.

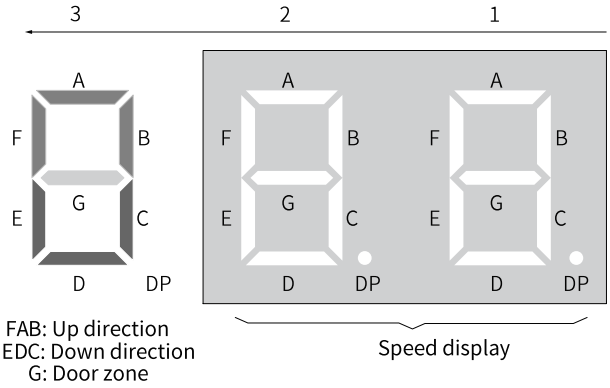
- Emergency and test operating panel triggered
  by operating the keypad to enter the F-D interface;

  by emergency state;

  by pulse change in stop state;

  or by the 12 V input in case of 24 V system power failure (MCB hardware F01 or later version).

- Description of emergency and test operating panel



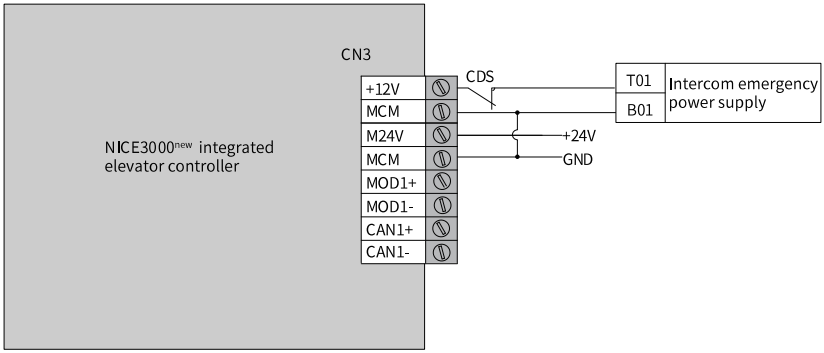
Note

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. The decimal places are different.

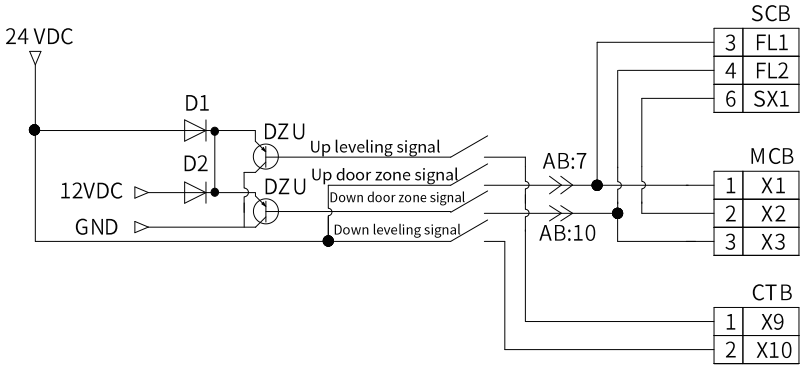
Electrical implementation

In case of power failure, this function can be enabled by using the 12 V power supply of the intercom system or electric brake release device to power the MCB.

- As 12 V input in case of power failure, 12V and MCM terminals are added on the MCB to supply power to PG card and other parts. This helps provide direction and speed feedback during emergency evacuation by shorting stator braking;
- CDS (MRL control cabinet door switch) is added. When the cabinet door is open, the switch contact is ON and 12 V power is supplied to terminal CN3;
- The switch above helps prevent insufficient voltage of emergency power supply due to long-term 12 V input to the system in case of power failure.
- 12 V and 24 V require common ground connection.



- 12 V input is added to the up and down leveling optoelectronic signals and power supply side. The 12 V power supply comes from the intercom emergency lighting. The action of the optoelectronic switch is driven by the emergency lighting upon power failure.
- The leveling optoelectronic switch must have a wide voltage range of 10 V to 30 V (Weton SGD31 optoelectronic switches can be a choice).
- A 1N4007 diode with 1 A rated current, 1000 V reverse breakdown voltage must be used for mutual separation on the optoelectronic power supply side.



5.19 Multiple Operation Boxes

Dual Operation Boxes

Function

There are several dual operation box uses: single-door main and auxiliary operation boxes; main operation box and operation box for the disabled and front and rear door operation boxes.

In these cases, the operation box is usually connected to CN7, and the auxiliary control box (for the disabled or rear door) is connected to CN8.

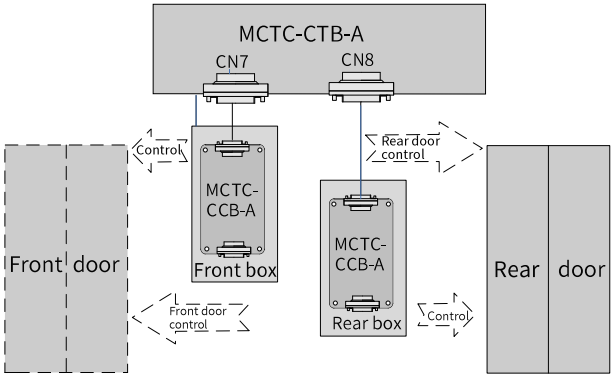


Figure 5-24 Dual operation boxes

Note

For the cases mentioned above, the standard software can support 48 landing doors.

Parameters

If the auxiliary operation box is for the single-door use or rear door car call, no additional parameters need to be set.

If it is for the disabled, F6-40 needs to be set and bit12 is set to 1 for commands from the disabled:

Param.	Name	Description
bit12	Car call auxiliary command terminal used for accessibility function	You can set the auxiliary command terminal (CN8) on the CTB for input of the disability calls: 0: Consistent with CN7 for the single-door configuration, and rear door for double-door configuration 1: CN8 is for the single-door disability calls

Three/Four Operation Boxes

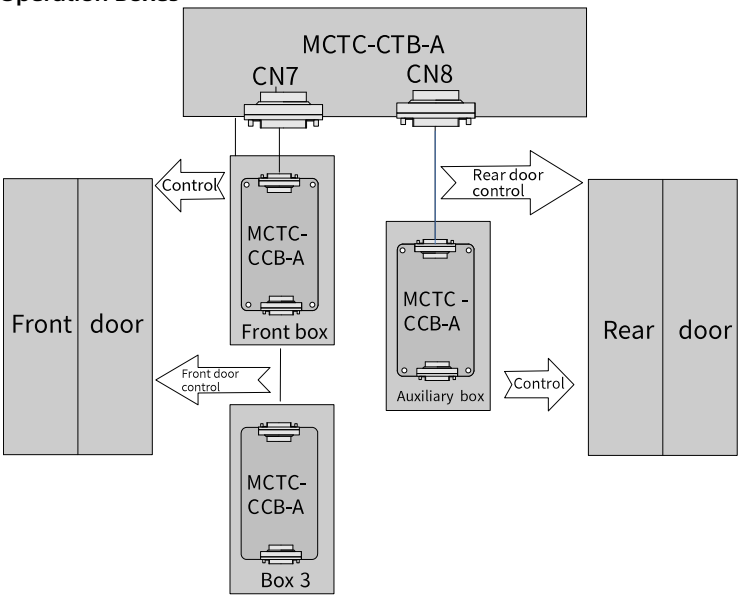


Figure 5-25 Three/Four operation boxes

Parameters

Set F6-40, bit14 to 1. Use the command board of the front or rear door to enter the floor of the disability call. The maximum number of floors supported is 16.

If it is over 16, please consult the manufacturer.

Param.	Name	Description
bit14	Car call command duplication	Car call command duplication: • Function disabled: CN7 is used for front door calls or ordinary calls, and CN8 is used for rear door calls or disability calls; • Function enabled: For CN7 and CN8, floors 1 to 16 are for front door calls or ordinary calls, and floors 17 to 32 for rear door calls or disability calls.

5.20 Balancing Factor Auto-tuning

Conditions:

The system is in the normal, locking or parking mode and there is no fault above level 3.

Parameter Setting

Set F-8 to 11 or F3-24 to 6 using the keypad. Ensure that the rated load F0-05 is set correctly.

Running Process

Hall calls are not registered. The elevator executes all car calls and ensures that the door close limit is reached. After the door lock is applied and remains active for 3s, the elevator enters the test mode and the HCB displays "θ".

Display

- If the result falls within the normal range, balancing factor F7-13 and brake torque upper limit F7-14 are saved and the keypad has a scrolling display of Pxx.xx Txxx for 8s.
- If the result is not within the normal range, the result is not saved.
- Display the calculation result Pxx.xx Txxx (P represents the balancing factor, T represents the recommended value of braking force test).

6 Service and Support

Should you encounter a safety accident during the use or operation of the product, or face challenges in operating and maintaining the equipment, which remain unresolved after the relevant documentation is consulted, we provide multiple channels to ensure prompt resolution:

- Channel #1: Contact service@inovance.com.
- Channel #2: Visit https://www.inovance.com/global to access document downloads, after-sales support, spare parts ordering, repair applications, and authenticity verification services.
- Channel #3: Download My Inovance app (https://zshc-eu.inovance.com/download-pc/) where you can access products info and documentation, and query product parameters.

We are committed to providing you with quick and professional technical support, and we look forward to your satisfaction and trust.

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