7 Troubleshooting

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7.1 Elevator Fault Display

When the controller detects faults, it alerts and records related information:

The keypad displays the current fault code and subcode, such as E22-101.



Figure 7-1 Fault code and subcode display on the keypad

When an operation panel is connected, it displays the current fault code, such as Err22.

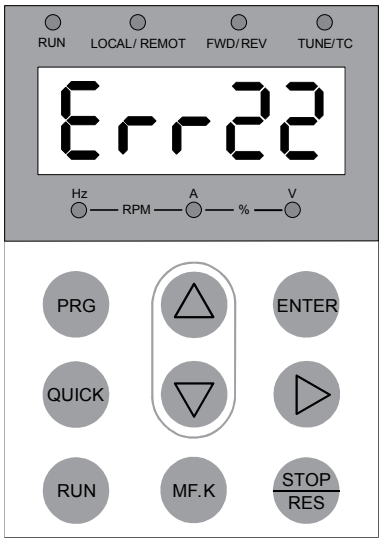


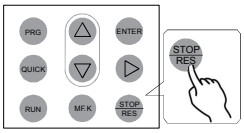
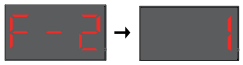
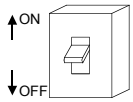
Figure 7-2 Fault code display on the operation panel

When F-2 is set to 2 with the keypad, it displays the information about the last 10 faults, including fault code, subcode, and time.

The integrated elevator controller records detailed information about the last 10 faults and simple information about 50 groups of faults. For details, refer to the parameter description of groups E0 to E9 and FC-11 to FC-210.

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7.2 Restart after Fault

Stage	Measures	Remarks
When the fault occurs	When F-2 is set to 2 with the keypad, it displays the information about the last 10 faults, including fault code, subcode, and time.	For details, refer to the parameter description of groups E0 to E9 and FC-11 to FC-210.
Before the fault is reset	Identify and eliminate any fault cause according to a fault code displayed on the operation panel.	Perform troubleshooting by referring to "7.4 Fault Information and Troubleshooting".
Fault reset method	Automatic reset of faults In case of some faults, if automatic reset conditions are satisfied after troubleshooting, the controller automatically resets faults.	
	Manual reset of faults Some faults have to be manually reset by pressing STOP RES on the operation panel or setting F-2 to 1 with the keypad.	Press the red Stop/Reset key on the operation panel.  Set F-2 to 1 
	Fault reset upon power-off Some faults have to be reset by cutting off the power of the controller and turning it on again after troubleshooting.	

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7.3 Description of Fault Levels

The NICE3000^{new} has almost 70 pieces of alarm information and protective functions. It monitors various input signals, running conditions and feedback signals. If a fault occurs, the system implements the relevant protective function and displays the fault code.

The controller is a complicated electronic control system and the displayed fault information is graded into five levels according to the severity. The faults of different levels are handled according to the following table.

Table 7-1 Fault Levels

Fault Level	Fault State	Solution
Level 1	◆ Display the fault code. ◆ Output the fault relay action command.	◆ 1A – The elevator running is not affected on any condition.
Level 2	◆ Display the fault code. ◆ Output the fault relay action command. ◆ Continue normal running of the elevator.	◆ 2A – The parallel/group control l function is disabled.
		◆ 2B – The door pre-open/re-leveling function is disabled.
Level 3	◆ Display the fault code. ◆ Output the fault relay action command. ◆ Stop output and apply the brake immediately after stop.	◆ 3A – In low-speed running, the elevator stops at special deceleration rate, and cannot restart.
		◆ 3B – In low-speed running, the elevator does not stop. In normal-speed running, the elevator stops, and then can start running at low speed after a delay of 3s.
Level 4	◆ Display the fault code. ◆ Output the fault relay action command. ◆ In distance control, the elevator decelerates to stop and cannot run again.	◆ 4A – In low-speed running, the elevator stops at special deceleration rate, and cannot restart.
		◆ 4B – In low-speed running, the elevator does not stop. In normal-speed running, the elevator stops, and then can start running at low speed after a delay of 3s.
		◆ 4C – In low-speed running, the elevator does not stop. In normal-speed running, the elevator stops, and then can start running at low speed after a delay of 3s.
Level 5	◆ Display the fault code. ◆ Output the fault relay action command. ◆ The elevator stops immediately.	◆ 5A – In low-speed running, the elevator stops immediately and cannot restart.
		◆ 5B – In low-speed running, the elevator does not stop. In normal-speed running, the elevator stops, and then can start running at low speed after a delay of 3s.

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7.4 Fault Information and Troubleshooting

If a fault is reported, the system performs corresponding processing based on the fault level. Handle the fault according to the possible causes described in the following table.

Fault Code	Name	Possible Causes	Solution	Level
Err02	Overcurrent during acceleration	The main circuit output is grounded or short circuited.	◆ Check whether the motor and grounding cables are connected correctly. ◆ Check whether the shorting PMSM stator contactor causes short circuit at the controller output side. ◆ Check whether the motor cables have damaged jacket	5A
		Motor auto-tuning is performed improperly.	◆ Check whether motor parameters comply with the nameplate. Perform motor auto-tuning again.	
		The encoder signal is incorrect.	◆ Check whether encoder pulses per revolution (PPR) is set correctly. ◆ Check whether the encoder signal is interfered with, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ◆ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably by observing whether the encoder is stable during normal-speed running. ◆ Check whether the encoder wirings are correct. For the asynchronous motor, perform SVC and compare the current to judge whether the encoder works properly.	
		The phase sequence of the motor is incorrect.	◆ Exchange the motor UVW phase sequence.	
		The acceleration time is too short.	◆ Reduce the acceleration rate.	

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Fault Code	Name	Possible Causes	Solution	Level
Err03	Overcurrent during deceleration	The main circuit output is grounded or short circuited.	◆ Check whether the motor and grounding cables are connected correctly. ◆ Check whether the shorting PMSM stator contactor causes short circuit at the controller output side. ◆ Check whether the motor cables have damaged jacket.	5A
		Motor auto-tuning is performed improperly.	◆ Check whether motor parameters comply with the nameplate. Perform motor auto-tuning again.	
		The encoder signal is incorrect.	◆ Check whether encoder pulses per revolution (PPR) is set correctly. ◆ Check whether the encoder signal is interfered with, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ◆ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably by observing whether the encoder is stable during normal-speed running. ◆ Check whether the encoder wirings are correct. For the asynchronous motor, perform SVC and compare the current to judge whether the encoder works properly.	
		The deceleration rate is too short.	◆ Reduce the deceleration rate.	
Err04	Overcurrent at constant speed	The main circuit output is grounded or short circuited.	◆ Check whether the motor and grounding cables are connected correctly. ◆ Check whether the shorting PMSM stator contactor causes short circuit at the controller output side. ◆ Check whether the motor cables have damaged jacket.	5A
		Motor auto-tuning is performed improperly.	◆ Check whether motor parameters comply with the nameplate. Perform motor auto-tuning again.	
		The encoder signal is incorrect.	◆ Check whether encoder pulses per revolution (PPR) is set correctly. ◆ Check whether the encoder signal is interfered with, whether the encoder cable runs through the duct independently, whether the cable is too long, and whether the shield is grounded at one end. ◆ Check whether the encoder is installed reliably, whether the rotating shaft is connected to the motor shaft reliably by observing whether the encoder is stable during normal-speed running. ◆ Check whether the encoder wirings are correct. For the asynchronous motor, perform SVC and compare the current to judge whether the encoder works properly.	

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Fault Code	Name	Possible Causes	Solution	Level
Err05	Overvoltage during acceleration	The input voltage is too high.	◆ Check whether the input voltage is too high. Observe whether the bus voltage is too high (normal: 540–580 V for 380 voltage input).	5A
		The regen. resistance is too large, or the braking unit fails.	◆ Check for the balance coefficient. ◆ Check whether the bus voltage rises too quickly during running. If yes, the braking resistor does not work or its model is improper: ◆ Check whether the cable connecting the braking resistor is damaged, whether the cooper wire touches the ground, and whether the connection is reliable. ◆ Check whether the resistance is proper based on the recommendation in chapter 4 and select a proper braking resistor. ◆ If a braking unit is used, check whether the braking unit works properly and whether the model is proper. If the resistance of the braking resistor is proper and overvoltage occurs each time when the elevator reaches the target speed, decrease the values of F2-01 or F2-04 to reduce the curve following error and prevent overvoltage due to system overshoot.	
		The acceleration rate is too short.	◆ Reduce the acceleration rate.	
Err06	Overvoltage during deceleration	The input voltage is too high.	◆ Check whether the input voltage is too high. Observe whether the bus voltage is too high (normal: 540–580 V for 380 voltage input).	5A
		The regen resistance is too large, or the braking unit fails.	◆ Check for the balance coefficient. ◆ Check whether the bus voltage rises too quickly during running. If yes, the braking resistor does not work or its model is improper: ◆ Check whether the cable connecting the braking resistor is damaged, whether the cooper wire touches the ground, and whether the connection is reliable. ◆ Check whether the resistance is proper based on the recommendation in chapter 4 andselect a proper braking resistor. ◆ If a braking unit is used, check whether the braking unit works properly and whether the model is proper. If the resistance of the braking resistor is proper and overvoltage occurs each time when the elevator reaches the target speed, decrease the values of F2-01 or F2-04 to reduce the curve following error and prevent overvoltage due to system overshoot.	
		The deceleration rate is too short.	◆ Reduce the deceleration rate.	

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Fault Code	Name	Possible Causes	Solution	Level
Err07	Overvoltage at constant speed	The input voltage is too high.	◆ Check whether the input voltage is too high. Observe whether the bus voltage is too high (normal: 540–580 V for 380 voltage input).	5A
		The regen. resistance is too large, or the braking unit fails.	◆ Check for the balance coefficient. ◆ Check whether the bus voltage rises too quickly during running. If yes, the braking resistor does not work or its model is improper: ◆ Check whether the cable connecting the braking resistor is damaged, whether the cooper wire touches the ground, and whether the connection is reliable. ◆ Check whether the resistance is proper based on the recommendation in chapter 4 andselect a proper braking resistor. ◆ If a braking unit is used, check whether the braking unit works properly and whether the model is proper. If the resistance of the braking resistor is proper and overvoltage occurs each time when the elevator reaches the target speed, decrease the values of F2-01 or F2-04 to reduce the curve following error and prevent overvoltage due to system overshoot.	
Err08	Maintenance notification period reached	The elevator is not maintained within the notification period.	◆ Power-off and maintain the elevator. ◆ Disable the maintenance notification function by setting F9-13 to 0. ◆ Contact the agent or the manufacturer.	5A
Err09	Undervoltage	Instantaneous power failure occurs on the input power supply.	◆ Check whether the power fails during running. ◆ Check whether the wiring of all power input cables is secure.	5A
		The input voltage is too low.	◆ Check whether the external power voltage is too low.	
		The drive control board fails.	◆ Contact the agent or the manufacturer.	

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Fault Code	Name	Possible Causes	Solution	Level
Err10	Controller overload	The mechanical resistance is too large.	◆ Check whether the brake is released, and whether the brake power supply is normal. ◆ Check whether the guide shoes are too tight.	5A
		The balance coefficient is improper	◆ Check whether the balance coefficient is correct.	
		The encoder feedback signal is abnormal.	◆ Check whether the encoder feedback signal and parameter setting are correct, and whether the initial angle of the encoder for the PMSM is correct.	
		Motor auto-tuning is not performed properly (the elevator running current is higher than the normal in this case).	◆ Check the motor parameter setting and perform motor auto-tuning again. ◆ If this fault is reported when the slip experiment is carried on, perform the slip experiment by using the function set in F3-24.	
		The phase sequence of the motor is incorrect.	◆ Check whether the UVW phase sequence of the motor is right.	
		The AC drive model is of too low power class.	◆ Check whether the current has exceeded the rated current of the AC drive during stable-speed running of the elevator with empty car.	
Err11	Motor overload	The mechanical resistance is too large.	◆ Check whether the brake is released, and whether the brake power supply is normal. ◆ Check whether the guide shoes are too tight.	5A
		The balance coefficient is improper	◆ Check whether the balance coefficient is correct.	
		Motor auto-tuning is not performed properly (the elevator running current is higher than the normal in this case).	◆ Check the motor parameter setting and perform motor auto-tuning again. ◆ If this fault is reported when the slip experiment is carried on, perform the slip experiment by using the function set in F3-24.	
		The phase sequence of the motor is incorrect.	◆ Check whether the UVW phase sequence of the motor is right.	
		The motor model is of too low power class.	◆ Check whether the current has exceeded the rated current of the motor during stable-speed running of the elevator with empty car.	
Err12	Power supply phase loss	The power input phases are not symmetric.	◆ Check whether the three phases of power supply are lost. ◆ Check whether the three phases of power supply are balanced. ◆ Check whether the power voltage is normal. If not, adjust the power supply.	5A
		The drive control board fails.	◆ Contact the agent or the manufacturer.	
Err13	Power output phase loss	The output wiring of the main circuit is loose.	◆ Check whether the motor wiring is secure. ◆ Check whether the RUN contactor on the output side is normal.	5A
		The motor is damaged.	◆ Check whether the motor is internally abnormal.	

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Fault Code	Name	Possible Causes	Solution	Level
Err14	Module overheat	The ambient temperature is too high.	◆ Lower the ambient temperature.	5A
		The fan is damaged.	◆ Replace the fan.	
		The air filter is blocked.	◆ Clear the air filter. ◆ Check whether the installation clearance of the controller satisfies the requirement.	
Err15	Output abnormal	Subcode 1: The regen. resistor is short circuited.	◆ Check wiring of the regen. resistor and braking unit is correct, without short-circuit. ◆ Check whether the main contactor works properly and whether there is arch or stuck problem.	5A
		Subcode 2: The braking IGBT is short circuited.	◆ Contact the agent or Inovance.	
Err16	Current control fault	Subcode 1: The excitation current deviation is too large.	◆ Check whether the input voltage is low (often in temporary power supply) ◆ Check whether cable connection between the controller and the motor is secure. ◆ Check whether the RUN contactor works properly.	5A
		Subcode 2: The torque current deviation is too large.		
		Subcode 3: The speed deviation is too large.	◆ Check the circuit of the encoder. ◆ Check whether encoder pulses per revolution (PPR) is set correctly. ◆ Check whether the encoder signal is interfered with. ◆ Check whether the encoder cable runs through the duct independently, the cable is too long, or the shield is grounded at one end. ◆ Check whether the encoder is installed reliably, the rotating shaft is connected to the motor shaft reliably, or the encoder is stable during normal-speed running. ◆ Check whether the motor parameters are correct, and perform motor auto-tuning again. ◆ Increase the torque upper limit in F2-08.	
Err17	Encoder interference during motor auto-tuning	Subcode 1: Reserved.	◆ Reserved	5A
		Subcode 2: The SIN/COS encoder signal is abnormal.	◆ Serious interference exists in the C, D, and Z signals of the SIN/COS encoder. Check whether the encoder cable is laid separately from the power cables, and whether system grounding is reliable. ◆ Check whether the PG card is wired correctly.	
		Subcode 3: The UVW encoder signal is abnormal.	◆ Serious interference exists in the U, V, and W signals of the UVW encoder. Check whether the encoder cable is laid separately from the power cables, and whether system grounding is reliable. ◆ Check whether the PG card is wired correctly.	

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Fault Code	Name	Possible Causes	Solution	Level
Err18	Current detection fault	The drive control board fails.	◆ Contact the agent or the manufacturer.	5A
Err19	Motor auto-tuning fault	Subcode 1: Stator resistance auto-tuning fails.	◆ Check the motor wiring.	5A
		Subcode 5: Magnetic pole position auto-tuning fails.		
		Subcode 8: Synchronous motor static auto-tuning is selected, but the encoder type is not SIN/COS encoder.	◆ Select other auto-tuning modes or change the encoder type to SIN/COS encoder.	
		Subcode 9: CD signal fluctuation is too large in synchronous motor static auto-tuning.	◆ Hardware interference exists in the CD signals of the SIN/COS encoder. Check whether grounding is normal.	
		Subcode 12: The encoder initial angle is not learned during angle-free auto-tuning of synchronous motor so that an alarm is given.	◆ For semi-automatic angle-free auto-tuning, the elevator can run at normal speed only after the encoder initial angle is obtained in inspection mode.	

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Fault Code	Name	Possible Causes	Solution	Level
Err20	Speed feedback incorrect	Subcode 1: The encoder signal is not detected during synchronous motor no-load auto-tuning.	◆ Check whether the encoder signal circuit is normal. ◆ Check whether the PG card is normal. ◆ Check whether the brake has been released.	5A
		Subcode 4: The Z signal cannot be detected during synchronous motor autotuning.	◆ Check whether the encoder signal circuit is normal. ◆ Check whether the PG card is normal.	
		Subcode 5: The cables of the SIN/COS encoder break.		
		Subcode 7: The cables of the UVW encoder break.		
		Subcode 14: The Z signal is lost during normal running		
		Subcode 2, 8: Reserved.	◆ Reserved	
		Subcode 3, 15: The motor cable sequence is incorrect, the motor brake is not started, or the encoder signal quality is poor.	◆ Exchange the cable sequence of any two of U, V, and W phases of the motor. ◆ Check whether the brake is started during synchronous motor with-load auto-tuning. ◆ Check the encoder signal circuit.	
		Subcodes 3, 15: The phase sequence of the motor is incorrect.	◆ Exchange any two phases of the motor UVW cables. ◆ Check whether the brake is released during with-load auto-tuning of the synchronous motor.	
		Subcode 9: The speed deviation is too large.	◆ The angle of the synchronous motor is abnormal. Perform motor auto-tuning again. ◆ Reduce the position lock speed loop KP. ◆ The speed loop proportional gain is excessive or integral time is insufficient. Decrease the proportional gain or increase the integral time properly. ◆ Check the phase sequence of the motor.	
		Subcode 12: The encoder AB signals are lost at startup.	◆ Check whether the brake has been released. ◆ Check whether AB signal cables of the encoder break. ◆ If the motor cannot be started at the slip experiment, perform the slip experiment by using the function set in F3-24.	
		Subcode 13: The encoder AB signals are lost during running.	◆ AB signals of the encoder become loss suddenly. Check whether encoder wiring is correct, whether strong interference exists, or the motor is stuck due to sudden power failure of the brake during running.	
		Subcode 19: The signals of the SIN/COS encoder are seriously interfered with during running.	◆ The encoder analog signals are seriously interfered with during motor running, or encoder signals are in poor contact. You need to check the encoder circuit.	
		Subcode 55: The signals of the SIN/COS encoder are seriously interfered with or CD signals are incorrect during motor auto-tuning.	◆ The encoder analog signals are seriously interfered with during motor auto-tuning, or encoder CD signals are in wrong sequence.	

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Fault Code	Name	Possible Causes	Solution	Level
Err21	Parameters are incorrectly set.	Subcode 2: The set value of the maximum frequency is smaller than the rated motor frequency.	◆ Increase the value of F0-06 so that it is greater than the rated motor frequency.	5A
		Subcode 3: The encoder type is incorrectly set.	◆ The SIN/COS, absolute or ABZ encoder is incorrectly set to the UVW encoder. Test whether the set value of F1-00 is matched with the encoder.	
Err22	Leveling signal abnormal	Subcode 101: The leveling signal is stuck.	◆ Check whether the leveling and door zone switches work properly. ◆ Check the installation verticality and depth of the leveling plates. ◆ Check the leveling signal input points of the MCB.	1A
		Subcode 102: The leveling signal is lost.		
		Subcode 103: The leveling position deviation is too large in elevator auto-running state.	◆ Check whether the steel rope slips.	
Err23	Short circuit	Subcodes 1, 2, 3: Short circuit to ground exists.	◆ Check whether the three-phase output of the AC drive is short circuited to ground.	5A
		Subcode 4: Inter-phase short circuit exists.	◆ Check whether the three-phase output of the AC drive is short circuited between phases or to ground.	
Err24	RTC clock fault	Subcode 101: The RTC clock information of the MCB is abnormal.	◆ Replace the clock battery. ◆ Replace the MCB.	3B
Err25	Storage data abnormal	Subcodes 101, 102, 103: The storage data of the MCB is abnormal.	◆ Contact the agent or the manufacturer.	4A
Err26	Earthquake signal	Subcode 101: The earthquake signal is active and the duration exceeds 2s.	◆ Subcode 101: Check that the earthquake signal is consistent with the parameter setting (NC, NO) of the MCB.	3B
Err27	Fault of special controller	Reserved	◆ Contact the agent or Inovance.	-
Err28	Maintenance fault	Reserved	◆ Contact the agent or Inovance.	-
Err29	Shorting motor stator contactor feedback abnormal	Subcode 101: Feedback of the shorting motor stator contactor of the MCB is abnormal.	◆ Check that the signal feature (NO, NC) of the feedback contact on the contactor is correct. ◆ Check that the contactor and corresponding feedback contact act correctly. ◆ Check the coil circuit of the shorting motor stator contactor.	5A
		Subcode 102: Feedback of the shorting PMSM stator contactor of the IO expansion board is abnormal.		
Err30	Elevator position abnormal	Subcodes 101, 102: In the normal-speed running or re-leveling running mode, the running time is larger than the value of F9-02, but the leveling signal has no change.	◆ Check whether the leveling signal cables are connected reliably and whether the signal copper wires may touch the ground or be short circuited with other signal cables. ◆ Check whether the distance between two floors is too large or the re-leveling time set in F3-21 is too short, causing over long re-leveling running time.	4A
Err31	Reserved	Reserved	◆ Reserved	-

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Fault Code	Name	Possible Causes	Solution	Level
Err32	Reserved	Reserved	◆ Reserved	-
Err33	Elevator speed abnormal	Subcode 101: The detected running speed during normal-speed running exceeds the limit.	◆ Check whether the parameter setting and wiring of the encoder are correct. ◆ Check the setting of motor nameplate parameters. Perform motor auto-tuning again.	5A
		Subcode 102: The speed exceeds the limit during inspection or shaft autotuning.	◆ Attempt to decrease the inspection speed or perform motor auto-tuning again.	
		Subcode 103: The speed exceeds the limit in shorting stator braking mode	◆ Check whether the shorting motor stator function is enabled. ◆ Check whether the UVW phase sequence of the motor is right.	
		Subcodes 104, 105: The speed exceeds the limit during emergency running.	◆ Check whether the emergency power capacity meets the requirements. ◆ Check whether the emergency running speed is set properly.	
		Subcode 106: The MCB speed measuring deviation is too large.	◆ Check the wiring of the encoder. ◆ Check whether SPI communication quality between the MCB and the AC drive is excellent.	
Err34	Logic fault	Logic of the MCB is abnormal.	◆ Contact the agent or Inovance to replace the MCB.	5A

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Fault Code	Name	Possible Causes	Solution	Level
Err35	Shaft auto-tuning data abnormal	Subcode 101: When shaft auto-tuning is started, the elevator is not at the bottom floor or the down slow-down switch is invalid,	◆ Check that the down slow-down switch is valid, and that F4-01 (Current floor) is set to the bottom floor number.	4C
		Subcode 102: The system is not in the inspection state (inspection switch not turned on)	◆ when shaft auto-tuning is performed.	
		Subcode 103: It is judged upon power-on that shaft auto-tuning is not performed.	◆ Perform shaft auto-tuning again.	
		Subcodes 104, 113, 114: In distance control mode, it is judged at running startup that shaft auto-tuning is not performed.		
		Subcode 105: The elevator running direction and the pulse change are inconsistent.	◆ Check whether the elevator running direction is consistent with the pulse change in F4-03: F4-03 increases in up direction and decreases in down direction.	
		Subcodes 106, 107, 109: The plate pulse length sensed at up/down leveling is abnormal.	◆ Check that NO/NC state of the leveling switch is set correctly. ◆ Check whether the leveling plates are inserted properly and whether there is strong power interference if the leveling switch signal blinks.	
		Subcodes 108, 110: No leveling signal is received within 45s continuous running.	◆ Check whether wiring of the leveling switch is correct. ◆ Check whether the floor distance is too large, causing running time-out. Increase the speed set in F3-11 and perform shaft auto-tuning again to ensure that learning the floors can be completed within 45s.	
		Subcodes 111, 115: The stored floor height is smaller than 50 cm.	◆ Enable the super short floor function if the floor distance is less than 50 cm. If the floor distance is normal, check installation of the leveling plate for this floor and check the switch and its wiring.	
		Subcode 112: The floor when auto-tuning is completed is not the top floor.	◆ F6-00 (Top floor of the elevator) is incorrectly set or the leveling plate is missing.	
		Subcode 116: The up and down leveling signals are in wrong sequence.	◆ Check whether the up and down leveling wiring is correct. ◆ Check whether the up and down leveling gaps are proper.	

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Fault Code	Name	Possible Causes	Solution	Level
Err36	RUN contactor feedback abnormal	Subcode 101: The feedback of the RUN contactor is active, but the contactor has no output.	◆ Check whether the feedback contact of the contactor acts properly. ◆ Check the signal feature (NO, NC) of the feedback contact.	5A
		Subcode 102: The controller outputs the RUN signal but receives no RUN feedback.		
		Subcode 104: When both feedback signals of the RUN contactor are enabled, their states are inconsistent.		
		Subcode 105: The feedback of the RUN contactor is active before re-leveling is enabled.		
		Subcode 103: The current of the asynchronous motor from the acceleration segment to the constant speed segment is too small (⩽ 0.1 A).	◆ Check whether the output cables UVW of the controller are connected properly. Check whether the control circuit of the RUN contactor coil is normal.	

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Fault Code	Name	Possible Causes	Solution	Level
Err37	Brake contactor feedback abnormal	Subcode 101: The output of the brake contactor is inconsistent with the feedback.	◆ Check whether the brake contactor opens and closes properly. ◆ Check that the signal feature (NO, NC) of the feedback contact on the brake contactor is set correctly. ◆ Check whether the feedback circuit of the brake contactor is normal.	5A
		Subcode 102: When both feedback signals of the brake contactor are enabled, their states are inconsistent.	◆ Check the signal feature (NO, NC) of the feedback contact on the brake contactor is set correctly. ◆ b. Check whether the states of the multi-way feedback contacts are consistent.	
		Subcode 103: The output of the brake contactor is inconsistent with the brake travel switch 1 feedback.	◆ Check whether the signal feature (NO, NC) of the brake travel switch 1/2 feedback is set correctly. ◆ b. Check whether the circuit of the brake travel switch 1/2 feedback is normal.	
		Subcode 106: The output of the brake contactor is inconsistent with the brake travel switch 2 feedback.		
		Subcode 105: The brake contactor feedback is valid before the brake contactor opens.	◆ Check whether the feedback contact of the brake contactor mal-functions.	
		Subcode 104: When both feedback signal of brake travel switch 1 are enabled, their states are inconsistent.	◆ Check whether the signal feature (NO, NC) of the brake travel switch 1/2 feedback is set correctly. ◆ b. Check whether the states of the multi-way feedback contacts are consistent.	
		Subcode 107: When both feedback signal of brake travel switch 2 are enabled, their states are inconsistent.		
		Subcode 108: The brake contactor output is inconsistent with the feedback of brake travel switch 1 on the IO expansion board.	◆ Check whether the signal feature (NO, NC) of the brake travel switch 1/2 feedback on the IO expansion board is set correctly. ◆ b. Check whether the circuit of the brake travel switch 1/2 feedback is normal.	
		Subcode 109: The brake contactor output is inconsistent with the feedback of brake travel switch 2 on the IO expansion board.		

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Fault Code	Name	Possible Causes	Solution	Level
Err38	Encoder signal abnormal	Subcode 101: The pulses in F4-03 do not change within the time threshold in F1-13.	◆ Check whether the encoder is used correctly ◆ Check whether the brake works properly.	5A
		Subcode 102: F4-03 increases in down direction.	◆ Check whether the parameter setting and wiring of the encoder are correct. ◆ Check whether the system grounding and signal grounding is secure. ◆ Check the phase sequence of the motor.	
		Subcode 103: F4-03 decreases in up direction.		
		Subcode 104: The SVC is used in distance control mode.	◆ Set F0-00 (Control mode) to 1 (Closed-loop vector control) in distance control mode.	
		Subcode 105: The down limit switch acts in up direction while down slow-down switch 1 is active.	◆ Check whether the wiring of up and down limit switches is normal.	
		Subcode 106: The up limit switch acts in down direction while up slow-down switch 1 is active.		
Err39	Motor overheat	Subcode 101: The motor overheat relay input remains valid for a certain time.	◆ Check whether the parameter setting (NO, NC) is correct. ◆ Check whether the thermal protection relay socket is normal. ◆ Check whether the motor is used properly and whether it is damaged. ◆ Improve cooling conditions of the motor.	3A
Err40	Reserved	Reserved	◆ Contact the agent or Inovance.	4B
Err41	Safety circuit disconnected	Subcode 101: The safety circuit signal becomes OFF.	◆ Check the safety circuit switches and their states. ◆ Check whether the external power supply is normal. ◆ Check whether the safety circuit contactor acts properly. ◆ Confirm the signal feature (NO, NC) of the feedback contact of the safety circuit contactor.	5A
Err42	Door lock disconnected during running	Subcodes 101, 102: The door lock circuit feedback is invalid during the elevator running.	◆ Check whether the hall door lock and the car door lock are in good contact. ◆ Check whether the door lock contactor acts properly. ◆ Check the signal feature (NO, NC) of the feedback contact on the door lock contactor. ◆ Check whether the external power supply is normal.	5A

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Fault Code	Name	Possible Causes	Solution	Level
Err43	Up limit signal abnormal.	Subcode 101: The up limit switch acts when the elevator is running in the up direction.	◆ Check the signal feature (NO, NC) of the up limit switch. ◆ Check whether the up limit switch is in good contact. ◆ Check whether the limit switch is installed at a relatively low position and acts even when the elevator arrives at the terminal floor normally.	4A
Err44	Down limit signal abnormal.	Subcode 101: The down limit switch acts when the elevator is running in the down direction.	◆ Check the signal feature (NO, NC) of the down limit switch. ◆ Check whether the down limit switch is in good contact. ◆ Check whether the limit switch is installed at a relatively high position and thus acts even when the elevator arrives at the terminal floor normally.	4A
Err45	Slow-down switch abnormal	Subcode 101: The down slow-down distance is insufficient during shaft auto-tuning.	◆ Check whether the up slow-down and the down slow-down are in good contact. ◆ Check the signal feature (NO, NC) of the up slow-down switch and the down slow-down switch. ◆ Ensure that the obtained slow-down distance satisfies the slow-down requirement at the elevator speed.	4B
		Subcode 102: The up slow-down distance is insufficient during shaft auto-tuning.		
		Subcode 103: The slow-down switch is stuck or abnormal during normal running.		
		Subcode 106: The up and down slow-down switches 2 act improperly during shaft auto-tuning.	◆ Check whether the signal of the up and down slow-down switches 2 is in wrong sequence. ◆ Check the signal feature (NO, NC) of the up and down slow-down switches 2.	
		Subcode 107: The up and down slow-down switches 3 act improperly during shaft auto-tuning.	◆ Check whether the signal of the up and down slow-down switches 3 is in wrong sequence. ◆ Check the signal feature (NO, NC) of the up and down slow-down switches 3.	
Err46	Re-leveling abnormal	Subcode 101: The leveling signal is inactive during re-leveling.	◆ Check whether the leveling signal is normal.	2B
		Subcode 102: The re-leveling running speed exceeds 0.1 m/s.	◆ Check whether the encoder is used correctly	

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Fault Code	Name	Possible Causes	Solution	Level
Err47	Shorting door lock circuit contactor abnormal.	Subcode 101: The shorting door lock circuit contactor outputs for continuous 2s, but the feedback is invalid and the door lock is disconnected.	◆ Check the signal feature (NO, NC) of the feedback contact on the shorting door lock circuit contactor. ◆ Check whether the shorting door lock circuit contactor acts properly.	2B
		Subcode 102: The shorting door lock circuit contactor has no output, but the feedback is valid for continuous 2s.		
		Subcode 106: The door lock feedback is detected as valid before re-leveling.		
		Subcode 103: During re-leveling or pre-open running, the output time of the shorting door lock circuit contactor is larger than 15s.	◆ Check whether the leveling and re-leveling signals are normal. ◆ Check whether the re-leveling speed is set too low.	
Err48	Door open fault	Subcode 101: The consecutive times that the door does not open to the limit reaches the setting in Fb-09.	◆ Check whether the door machine system works properly. ◆ Check whether the CTB output is normal. ◆ Check whether the door open limit signal and door lock signal are normal.	5A
Err49	Door close fault	Subcode 101: The consecutive times that the door does not close to the limit reaches the setting in Fb-09.	◆ Check whether the door machine system works properly. ◆ Check whether the CTB output is normal. ◆ Check whether the door close limit signal and door lock signal are normal.	5A
Err50	Consecutive loss of leveling signal	Subcode 101: Leveling signal stuck is detected for three consecutive times.	◆ Check whether the leveling and door zone switches work properly. ◆ Check the installation verticality and depth of the leveling plates. ◆ Check the leveling signal input points of the MCB. ◆ Check whether the steel rope slips.	5A
		Subcode 102: Leveling signal loss is detected for three consecutive times.		
Err51	CAN communication fault	Subcode 101: Feedback data of CANbus communication with the CTB remains incorrect.	◆ . ◆ Check the power supply of the CTB. ◆ Check whether the 24 V power supply of the controller is normal. ◆ Check whether there is strong-power interference on communication.	1A
Err52	HCB communication abnormal	Subcode 101: Feedback data of Modbus communication with the HCB remains incorrect.	◆ Check the communication cable connection. ◆ Check whether the 24 V power supply of the controller is normal. ◆ Check whether the HCB addresses are repeated. ◆ Check whether there is strong-power interference on communication.	1A

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Fault Code	Name	Possible Causes	Solution	Level
Err53	Door lock fault	Subcode 101: The door lock feedback signal remains active 3s after door open output, with shorting door lock circuit disabled.	◆ Check whether the door lock circuit is short circuited. ◆ Check whether the feedback contact of the door lock contactor acts properly.	5A
		Subcode 102: The states of the door lock multi-way feedback contacts are inconsistent 3s after door open output.		
		Subcode 105: The door lock 1 shorting signal remains active 3s after door open output, with shorting door lock circuit enabled.		
		Subcode 106: The door lock 2 shorting signal remains active 3s after door open output, with shorting door lock circuit enabled.		
		Subcode 104: The higher-voltage and low-voltage door lock signals are inconsistent.	◆ Check whether the higher-voltage and low-voltage door lock signals are inconsistent. If the time when the MCB receives the two signals has a deviation of above 1.5s, this fault is reported. This subcode is reset at power-off and power-on again.	
		Subcode 107: The door lock short circuit input parameter is selected, but the feedback signal is continuously disconnected or is not connected.	◆ Check whether the door lock short circuit feedback signal cable is not connected or is broken.	
Err54	Overcurrent at inspection startup	Subcode 102: The current at startup for inspection exceeds 120% of the rated current.	◆ Reduce the load. ◆ Check the phase sequence of the motor. ◆ Change Bit1 of FC-00 to 1 to cancel the start-up current detection function.	5A
Err55	Stop at another landing floor	Subcode 101: During automatic running of the elevator, the door open limit is not received within the time threshold in Fb-06.	◆ Check the door open limit signal at the present floor.	1A

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Fault Code	Name	Possible Causes	Solution	Level
Err56	Door open/close signal fault	Subcode 101: The door open/close limit signal is active in running.	◆ Check the setting of door open/close limit signal NO/NC of F5-25. ◆ Check the wiring of door open/close signal.	5A
		Subcode 102: The door close limit signal is inactive in running.		
		Subcode 103: door open limit and close limit signals are both valid		
		Subcode 104: The door close limit signal is continuously connected 3s after the door is open. This fault subcode is detected after the door lock bypass is set.	◆ Check whether the door close limit signal is always active.	
Err57	Serial peripheral interface (SPI) communication abnormal	Subcodes 101, 102: The communication of the MCB with the DSP board of the drive unit is abnormal.	◆ Check the wiring between the control board and the drive board.	5A
		Subcode 103: The MCB does not match the AC drive.	◆ Contact the agent or Inovance.	
Err58	Shaft position switches abnormal	Subcode 101: The up slow-down switch and down slow-down switch are disconnected simultaneously.	◆ Check whether the signal feature (NO, NC) of the slow-down switches and limit switches are ◆ consistent with the parameter setting of the MCB. ◆ Check whether malfunction of the slow-down switches and limit switches exists.	4B
		Subcode 102: The up limit feedback and down limit feedback are disconnected simultaneously.		
Err59	Reserved	Reserved	◆ Reserved	-
Err60	Reserved	Reserved	◆ Reserved	-
Err61	Reserved	Reserved	◆ Reserved	-
Err62	Analog input cable broken	Subcode 101: The load cell analog input cable is broken.	◆ Check whether F5-36 is set correctly. ◆ Check whether the analog input cable of the CTB or MCB is connected incorrectly or broken. ◆ Adjust the load cell switch function.	3B
Err64	External fault	Subcode 101: The external fault signal is continuously active for 2s.	◆ Check the NO/NC setting of the external fault terminal. ◆ Check the input signal state of the external fault terminal.	5A
Err65	UCMP test abnormal	This fault is reported when the UCMP function test is enabled. This fault is reported when the car moves unintendedly.	◆ Check whether the brake is fully closed and whether the car does not move unintended-ly.	5A
Err66	Braking force test abnormal	This fault is reported when the braking force test is enabled and insufficient braking force is detected.	◆ Check the brake clearance.	5A

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Fault Code	Name	Possible Causes	Solution	Level
Err67	AFE fault	Subcode 01: Overcurrent	◆ Check whether the grounding or short circuit of the AFE or AC drive exists. ◆ Check whether the controller parameters are set unreasonably. ◆ Check whether the power grid is abnormal and whether output oscillation exists. ◆ Check any internal fault of the machine. ◆ Contact Inovance.	5A
		Subcode 02: AFE overheat Subcode 04: Bus undervoltage	◆ Check whether the ambient temperature is too high. ◆ Check whether the fan is faulty and whether the air filter is clogged. ◆ Check whether the module is damaged. ◆ Test the circuit fault. Contact Inovance. ◆ Reduce the load if the load is too heavy. ◆ Check whether the bus voltage test is abnormal. Contact Inovance.	
		Subcode 06: Bus overvoltage	◆ Install a regen. resistor on the AC drive. ◆ Check whether the power grid voltage and wiring are normal. ◆ Check model matching and conditions. ◆ Contact Inovance. Check whether the circuit and the voltage loop are set reasonably.	
		Subcode 07: AFE overload	◆ Check whether the matching of the machine power is reasonable.	
		Subcode 08: Power grid overvoltage Subcode 09: undervoltage of the mains Subcode 10: overfrequency of the mains Subcode 11: underfrequency of the mains	◆ Check whether the power grid voltage is normal. ◆ Contact Inovance. Check whether the circuit is normal.	

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Fault Code	Name	Possible Causes	Solution	Level
		Subcode 12: Power grid voltage asymmetric Subcode 13: Power grid voltage phase lock fault	◆ Check whether the three phases of power grid voltage are normal. ◆ Check whether input cable connection is normal. ◆ Contact Inovance. Check whether the circuit is normal.	
		Subcode 14: AFE current asymmetric Subcode 15: Pulse-by-pulse current limit fault Subcode 16: Zero sequence current fault Subcode 17: Current zero shift fault	◆ Check whether the three-phase input is normal. ◆ Check whether the load is too large. ◆ Check whether the system is short-circuited to ground. ◆ Contact Inovance. Check whether the circuit is normal.	
		Subcode 19: CAN communication abnormal Subcode 21: RS485 communication fault in parallel Subcode 201/202: CAN communication abnormal	◆ Check whether the MCB software supports AFE. ◆ Check whether F6-52 BIT2 in the MCB parameters is set reasonably. ◆ Check whether the communication cable is broken or in poor contact.	
		Subcode 23: Bus connection in wrong sequence	◆ Check bus connection and exchange the polarity.	

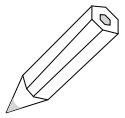
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Fault Code	Name	Possible Causes	Solution	Level
Err69	ARD fault	Subcodes 22 and 103: ARD communication fault	◆ Check the communication cable connection. ◆ Check whether the ARD power supply is normal. ◆ Check whether the 24 V power supply of the controller is normal. ◆ Check whether there is strong-power interference on communication.	1A
		Subcodes 1 to 3 and 8: ARD overcurrent fault Subcode 10: ARD overload	◆ Check whether the load is normal. ◆ Check that the wiring is correct. ◆ Check whether the load is too large. ◆ Contact Inovance.	
		Subcodes 4 to 7: ARD battery fault	◆ Check whether the battery wire is connected correctly. ◆ Check whether the battery model is correct (48 V). ◆ The battery life is reduced. Replace the battery. ◆ The machine operates too long or the ambient temperature is too high.	
		Subcode 11: ARD bus overvoltage Subcode 12: ARD bus undervoltage Subcode 13: ARD drive unit overvoltage	◆ Check whether the battery level is within a correct range. ◆ Check whether the battery voltage is normal. ◆ Contact Inovance.	
		Subcode 16: Power grid input overvoltage	◆ Check whether the power grid voltage is normal and is incorrectly connected to 380 V. ◆ Contact Inovance.	
		Subcode 21: Relay stuck	◆ Power the control cabinet on and off again. If the E69 subcode 21 reoccurs, test the stuck situation. ◆ Test whether the main relay K4 is stuck. ◆ Test whether the drive unit relay K2 is stuck. ◆ Test whether the brake release relay K1 is stuck.	
		Subcode 21: Alarm of too low lithium battery level	◆ Test whether the lithium battery is damaged. ◆ The lithium battery is discharged excessively and must be charged.	

NOTE

◆ Fault Err41 is not recorded in the elevator stop state.
◆ Fault Err42 is reset automatically when the door lock circuit is shorted or 1s after the fault occurs in the door zone.
◆ If faults Err51, Err52, and E57 persist, they are recorded once every one hour.

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Memo NO. _____

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