Preface

FR200D series special purpose inverter for elevator, are developed for Construction Elevator, Simple Passenger Elevator, and Elevator Machinery, based on the core control arithmetic of FR200 vector control inverters, combined with the control requirements of elevator application.

When debugging the product, please refer to the commissioning guide in this manual, maintenance can refer to FR200 user manual.

IMPORTANT NOTES

◆To illustrate the details of the products，pictures in this manual based on products with outer casing or safety cover being removed. When using this product, please be sure to well install outer casing or covering by the rules, and operating in accordance with the manual contents.

◆The illustrations in this manual are for illustration only and may vary with different products you have ordered.

◆ The company is committed to continuous improvement of products, product features will continue to upgrade, the information provided is subject to change without notice.

◆ If there is any questions when using, please contact our regional agents or our customer service center:(+86-0755-33067999)

◆For other products, please visit our website. http://www.frecon.com.cn

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Chapter 1 Product Information

1.1 Nameplate

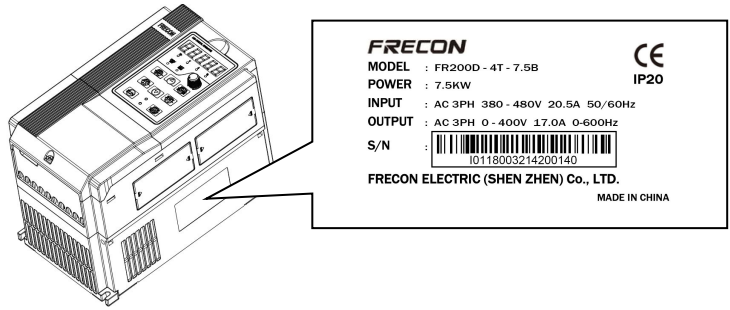


Fig.1-1 Nameplate

Model Instruction

Model numbers on name plate consist of numbers, symbols, and letters, to express its respective series, suitable power type, power level and other information.

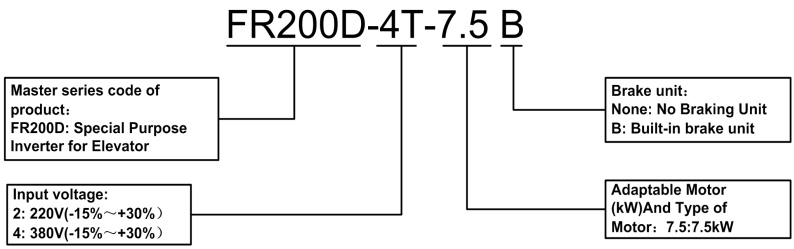


Figure 1-2 Product Model Naming Rules

1.2 FR200D series Special Purpose Inverter Model Selection

Table 1-1 FR200D series model table

Model No.	Power capacity KVA	Rated Input current A	Rated output current A	Applicable motor kW	HP
3-Phase：380V，50/60Hz Range：-15%～+30%					
FR200D-4T-0.7B	1.5	3.4	2.5	0.75	1
FR200D-4T-1.5B	3	5.0	4.2	1.5	2
FR200D-4T-2.2B	4	5.8	5.5	2.2	3
FR200D-4T-4.0B	6	11	9.5	3.7、4	5
FR200D-4T-5.5B	8.9	14.6	13	5.5	7.5
FR200D-4T-7.5B	11	20.5	17	7.5	10
FR200D-4T-011B	17	26	25	11	15
FR200D-4T-015B	21	35	32	15	20
FR200D-4T-018B	24	38.5	37	18.5	25
FR200D-4T-022B	30	46.5	45	22	30
FR200D-4T-030B	40	62	60	30	40
FR200D-4T-037B	57	76	75	37	50
FR200D-4T-045B	69	92	91	45	60
FR200D-4T-055B	85	113	112	55	70
FR200D-4T-075B	114	157	150	75	100

1.3 Product Terminal Configuration

1.3.1 Main Circuit Terminals

a: 0.75～30KW Main Circuit Terminals

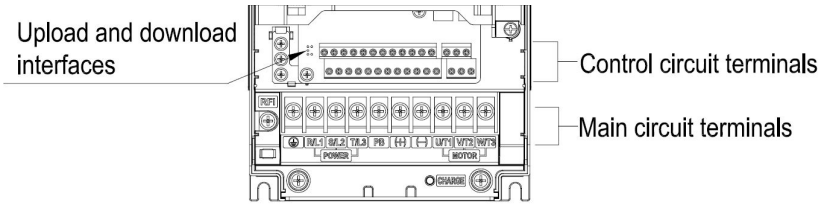


Figure 1-3 4.0～30kW Main Circuit Terminal Diagram

Table 1-2 Functions of Inverter Main Circuit Terminals

Terminal Label	Description
R/L1、S/L2、T/L3	AC Power Input Terminal, connected to three-phase 380V AC power.
U/T1、V/T2、W/T3	Inverter AC output terminal, connected to three-phase AC motor
(+)、(-)	Respectively to be positive and negative terminal of internal DC bus
PB	Braking resistor connection terminals, one end connected to (+), the other end of PB.
⏚	Ground terminal, connected to the earth.

1.3.2 Control Circuit Terminals

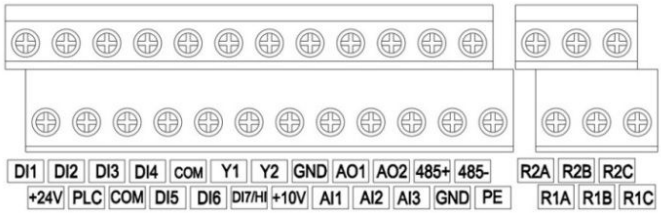


Figure 1-4 Control Terminals Diagram

Table 1-3 FR200D Inverter Control Circuit Terminal Functions

Type	Terminal Symbol	Terminal Name	Description
Power Supply	+10V-GND	＋10V Power Supply	Output +10V Power Supply, Maximum Output Current: 10mA. Generally use for power supply of external potentiometer, resistance range of potentiometer: 1～5kΩ
	+24V-COM	24V Power Supply	Output +24V power supply, generally use for power supply of digital input/output terminal and external sensor, maximum output current: 200mA.
	PLC	External Power Input Terminal	Factory default in connection with +24V,when using an external signal to drive DI1~DI7, PLC need to be connected to external power, and disconnected with +24V power terminal.
Analog Input	AI1-GND	Analog Input Terminal 1	Input Range: DC 0～10V/0～20mA, selected by AI1、AI2 toggle switches on control board. Input Impedance:250kΩ for voltage input, 250Ω for current input.
	AI2-GND	Analog Input Terminal 2	
	AI3-GND	Analog Input Terminal 3	Input voltage range: DC -10～+10V Input Impedance: 250kΩ
Digital	DI1- COM	Digital Input	Maximum input frequency: 200Hz

Input		Terminal 1	Input Impedance: 2.4kΩ Voltage Range of level-input:9V～30V
	DI2- COM	Digital Input Terminal 2	
	DI3- COM	Digital Input Terminal 3	
	DI4- COM	Digital Input Terminal 4	
	DI5- COM	Digital Input Terminal 5	
	DI6- COM	Digital Input Terminal 6	
	DI7/HI-COM	Digital Input Terminal 7 or high-speed pulse input	Besides the features of DI1~DI6, DI7 also can be the channel of high-speed pulse input. Maximum input frequency: 100kHz.
Analog Output	AO1-GND	Analog Output Terminal 1	Output range：DC 0～10V/0～20mA, selected by A01、A02 toggle switches on control board. Impedance required≥10kΩ
	AO2-GND	Analog Output Terminal 2	
Digital Output	Y1-COM	Open Collector Output 1	Voltage Range: 0～24V Current Range: 0～50mA
	Y2/HO-COM	Open Collector Output 2or high-speed pulse output	Apart from Y1 characteristics, Y2 also can be the channel of high-speed pulse input. Maximum output frequency: 100kHz.
Relay Output	R1A-R1C	normal open terminal	Contact driving ability: AC250V，3A，COSØ=0.4。 DC 30V，1A
	R1B-R1C	normal close terminal	
	R2A-R2C	normal open terminal	
	R2B-R2C	normal close terminal	
485 Communication	485+-485-	485 Communication Terminals	Speed: 4800/9600/19200/38400/57600/115200bps. RS485 toggle switch on control board, setting the terminal matching-resister
	GND	485 Communication Shield Ground	
Shielded	PE	Shield Grounding	It's use for grounding the shield of terminal-wire

Aid Interface		External Keyboard Interface	When connected to operation board, the longest communication distance is up to 50m, adopt the standard network cable (RJ45)
	UP/DOWNLOAD	Parameter Copy Card Interface	

1.4 Dimensions, installation dimensions and weight

a:4.0～15kW Dimensions and wall mounting dimensions

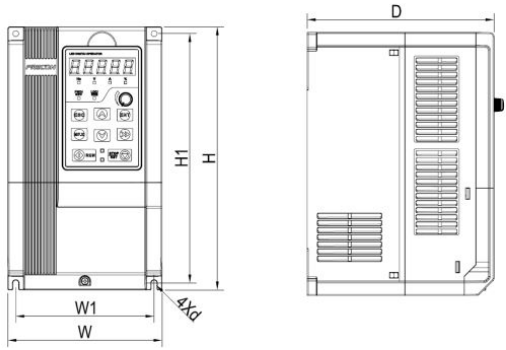


Figure 1-5 0.75～15kW Wall Installation Diagram

b: 18.5～75kW Dimensions and installation dimensions

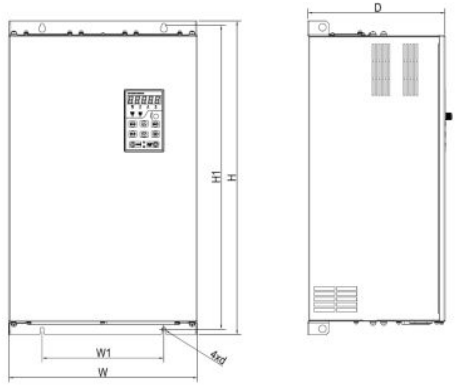


Figure 1-6 18.5～30kW Wall mounting diagram

Table 1-4 Wall Mounting Size Table

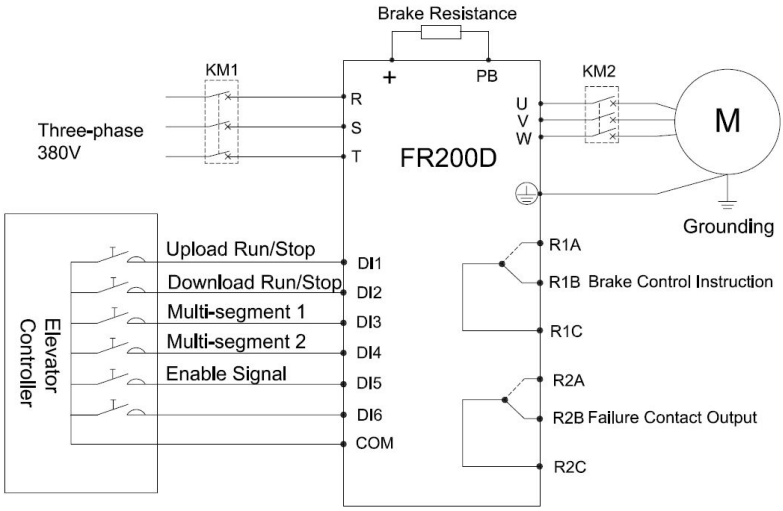
Model No.	Dimensions and installation size（mm）						Weight（Kg）
	W	W1	H	H1	D	Installation Aperture	
FR200D-4T-0.7B	116.6	106.6	186.6	176.6	168	4.5	2.2
FR200D-4T-1.5B							
FR200D-4T-2.2B							
FR200D-4T-4.0B	146	131	249	236	177	5.5	3.2
FR200D-4T-5.5B							
FR200D-4T-7.5B							
FR200D-4T-011B	198	183	300	287	185	5.5	5.4
FR200D-4T-015B							
FR200D-4T-018B	255	176	459	443	220	7	15.5
FR200D-4T-022B							
FR200D-4T-030B							
FR200D-4T-037B	270	130	590	572	260	7	27.5
FR200D-4T-045B							
FR200D-4T-055B	357	230	590	572	260	7	37
FR200D-4T-075B							

Chapter 2 Commissioning guide

FFR200D series Inverter developed special for elevator industry, controlmodes as below:

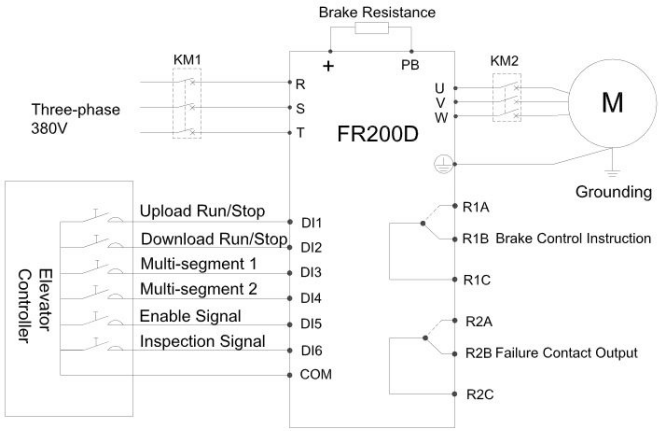
1) Multi-stage Speed Control Mode

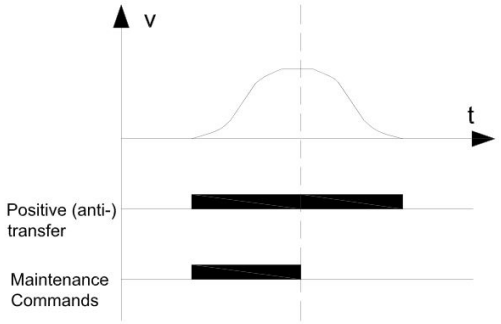
Multi-stage speed control is a common mode in elevator application,whose characteristic is strong anti-jamming ability, good suitability and easy to be realized. But in typical multi-stage speed control when different speed combinations are switched, the acceleration and deceleration curves are the same, and they affects each other, so users can not attend everything during actual adjustment. FR200D series inverter has been specially designed to solve this problem: each speed combination corresponds to different acceleration and deceleration curve,which make adjustment easier for users.



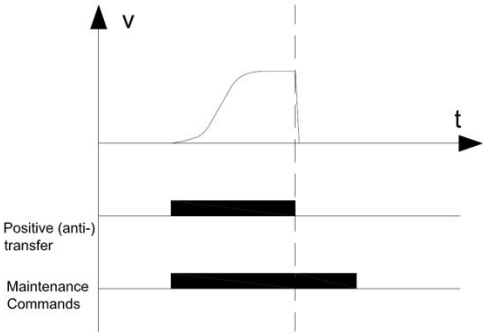
2) Inspection Running

FR200-D inverter has internal inspection running mode when it's under multi-stage speed control mode, which has been designed according to the characteristics of the elevator inspection running. if inspection input is effective, inspection running speed will be adjusted by the setting of function code. For example, FR200-D will run at the target frequency of multi-stage speed 3, and acceleration time is decided by the corresponding time curve of multi-stage speed 3. During stall, if inspection input signal is canceled first, the system will decelerate to 0 during thedeceleration time of multi-stage speed 3 until forward or reverse running command is canceled.





If forward or reverse running command is canceled directly during inspection running, FR200D will stop output immediately, as shown in the following figure.

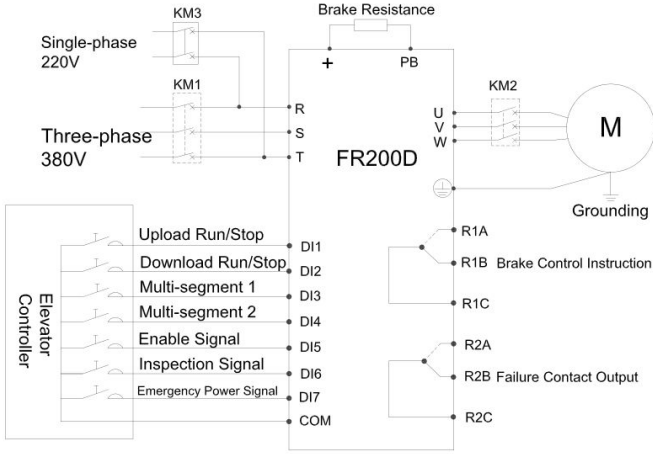


3) Power Failure Emergency Running

In the using of elevator, if the power is cut suddenly, passengers may be kept in the cage.

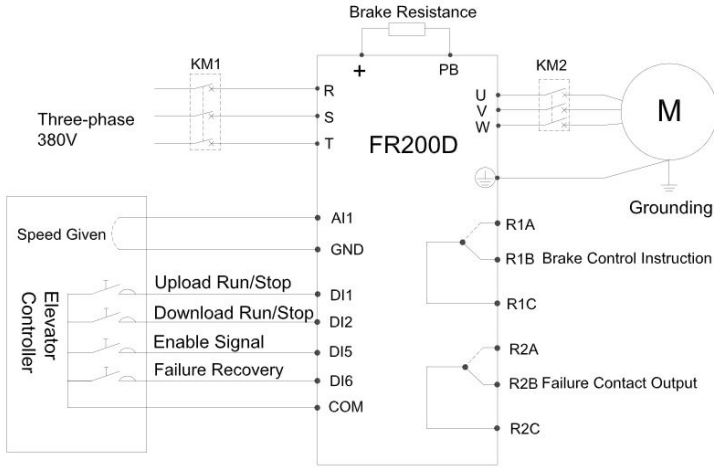
FR200-D series inverters can support emergency UPS power running, Both the main circuit of FR200D and the working are powered by UPS.

When receiving ARD terminal command, inverter auto switched to ARD mode operation. Logic diagram shown as below, when grid power failure, the external control board will be switched to UPS power supply, input voltage fall from 380V to 230V single phase. Switch given frequency is the same with ARD frequency, after that will run as operation terminal command, keep ARD frequency, please shield the input default phase of inverter right now, inverter undervoltage detection point switched to 190V.



4) Analog Control Mode

FR200D inverter has another commonly used mode: analogue speed given mode. In this mode, reference speed applies analog input, running command applies terminal input. The following is the simple introduction of this mode.



Wirings Figure

Chapter 3 Function Parameters

3.1 The Basic Function Parameters

Table 3-1 Basic Function Parameters

Function Code	Name	Descriptions	Default Value	Attribute
F00 Group: System Parameters				
F00.00	User Password	0～65535	0	×
F00.04	Default Value Control	0：Null 1：Factory Reset(Excluding motor parameters） 2: Clear the record information of fault 3：Backup user's current parameters 4：User's backup parameters were restored	0	×
F01 Group: Frequency Given				
F01.08	Maximum Frequency（Fmax)	20.00～600.00Hz	50.00Hz	×
F01.09	Upper Limit Frequency(Fup)	Fdown～Fmax	50.00Hz	×
F01.10	Lower Limit Frequency(Fdown)	0.00～Fup	0.00Hz	×
F01.11	Given frequency lower than the frequency control of lower limit	0：Run by the lower frequency 1：After running time of lower limit frequency, it will run on speed of 0.	0	×
F01.12	Running time of lower limit frequency	0.0～6000.0s	60.0s	×
F02 Group: Control of Run/Stop				
F02.00	Command Source Selection of Run/Start	0：Operation Panel（LED off） 1：External Terminal（LED on） 2：Computer Communications（ LED flash）	0	×
F03 Group: Acceleration/Deceleration Time				
F03.00	Acceleration Time1	0.0～6000.0s	15.0s	△
F03.01	Deceleration Time1	0.0～6000.0s	15.0s	△
F03.02	Acceleration Time2	0.0～6000.0s	4.0s	△
F03.03	Deceleration Time2	0.0～6000.0s	4.0s	△
F03.04	Acceleration Time3	0.0～6000.0s	4.0s	△

F03.05	Deceleration Time3	0.0～6000.0s	4.0s	△
F03.06	Acceleration Time4	0.0～6000.0s	20.0s	△
F03.07	Deceleration Time4	0.0～6000.0s	20.0s	△
F03.10	Accel/Decele curve	0: Linear Accel/Decel 1: S-curve Accel/Decel	1	×
F03.11	S curve Time1	0.0～6000.0s	1.0s	×
F03.15	S curve Time2	0.0～6000.0s	1.0s	×
F03.16	S curve Time3	0.0～6000.0s	1.0s	×
F03.17	S curve Time4	0.0～6000.0s	1.0s	×
F04 Group: Digital Input Terminals				
F04.00	Function of terminal DI1	0: No function 1: Running forward (FWD) 2: Running reverse (REV) 3: Three-wire control 4: JOG forward 5: JOG reverse 6: Coast to stop 7: Fault reset (RESET) 8: Running suspended 9: External fault input 10: Terminal UP 11: Terminal DOWN 12: UP/DOWN (including ∧/∨ key) adjustment clear 13: Multi-step frequency terminal 1 14: Multi-step frequency terminal 2 15: Multi-step frequency terminal 3 16: Multi-step frequency terminal 4 17: Accel/Decel time determinant 1 18: Accel/Decel time determinant 1 19: Accel/Decel disabled(ramp stop not inclusive) 20: Switch to auxiliary speed setting 21: PLC status reset 22: Simple PLC paused 23: Simple PLC paused 24: PID adjustment direction 25: PID integration paused 26: PID parameter switch 27: Swing frequency pause(output the currentfrequency) 28: Swing frequency reset(output the central frequency) 29: Run command switched to keypad contro 30: Run command switched to terminal control 31: Run command switched to communication control 32: Count input 33: Count clear 34: Length count 35: Length clear 36: DC brake input command at stop	1	×
F04.01	Function of terminal DI2		2	×
F04.02	Function of terminal DI3		13	×
F04.03	Function of terminal DI4		14	
F04.04	Function of terminal DI5		40	×
F04.05	Function of terminal DI6		41	×
F04.06	Function of terminal DI7		6	×

		37: Special drive enable 40: Elevator inspection signal 41: Elevator emergency signal		
F05 Group: Digital Output Terminal				
F05.00	Y1 Output Function Selection	0: No output 1: Drive is running 2: Fault output 3: Frequency-level detection FDT1 output 4: Frequency-level detection FDT2 output 5: Drive in 0Hz running 1(no output at stop) 6: Drive in 0Hz running 2(output at stop) 7: Upper limit frequency attained 8: Lower limit frequency attained 9: Frequency attained 10: Inverter is ready to work 11: Drive (motor) overloaded alarm 12: Inverter overheat warning 13: Current running time attained 14: Accumulative power-on time attained 15: Consecutive running time attained 16: PLC cycle completed 17: Set count value attained 18: Designated count value attained 19: Length attained 20: Under load alarm 21: Braking output	2	×
F05.01	Y2 Output Function Selection		3	×
F05.02	Relay R1 Output Function Selection		21	×
F07 Group: Analog and Pulse Output				
F07.00	AO1 Output Function Selection	0：No Output 1：Output Frequency 2：Set Frequency 3：Output Current（Inverter Rated Current） 4：Output Voltage（Inverter Rated Voltage） 5：Output Power 6：Bus Voltage 7：+10V 8：Keyboard Potentiometer 9：AI1 10：AI2 11：AI3 12：HI Input(100.0%corresponds	1	×
F07.01	AO2 Output Function Selection		2	×
F07.02	Y2/HO Output Function Selection（When used as HO)		1	×

		100.00kHz) 13：Output Torque(Absolute Value of the Torque)		
F08 Group: Motor 1 Basic Parameters				
F08.01	Motor 1 Rated Power	0.10～600.00kW	Type fixed	×
F08.02	Motor 1 Rated Voltage	60～660V	Type fixed	×
F08.03	Motor 1 Rated Current	0.1～1500.0A	Type fixed	×
F08.04	Motor 1 Rated Frequency	20.00～Fmax	Type fixed	×
F08.05	Motor 1 Rated Rotational Speed	1～30000	Type fixed	×
F08.06	Motor 1 Wirings	0：Y 1：Δ	Type fixed	×
F08.07	Motor 1 Rated Power Factor	0.50～0.99	Type fixed	×
F08.08	Asynchronous Motor 1 Stator Resistance R_1	0.001～65.535Ω	Type fixed	×
F08.09	Asynchronous Motor 1 Rotor Resistance R_2	0.001～65.535Ω	Type fixed	×
F08.10	Asynchronous Motor 1 Leakage Inductance	0.001～65.535mH	Type fixed	×
F08.11	Asynchronous Motor 1 Mutual Inductance	0.1～6553.5mH	Type fixed	×
F08.12	Asynchronous Motor 1 No-load Field Current	0.1～1500.0A	Type fixed	×
F08.13	Asynchronous Motor 1 field-weakeningcoefficient 1	0.0～100.0	87%	×
F08.14	Asynchronous Motor 1 field-weakeningcoefficient 2	0.0～100.0	75%	×
F08.15	Asynchronous Motor 1 field-weakeningcoefficient 3	0.0～100.0	70%	×
F08.30	Parameters Self-identification	0：Null 1：Asynchronous Motor Static Self-identification 2：Asynchronous Motor Rotation	0	×

		Self-identification		
F09 Group: Motor 1VF Curve				
F09.00	Motor 1VF Curve Setting	0：Straight Line V/F 1：Multipoint V/F 2：1.2th power of the V/F curve 3：1.4th power of the V/F curve 4：1.6th power of the V/F curve 5：1.8th power of the V/F curve 6：2.0th power of the V/F curve 7：VF Completed Separation Mode 8：VF Semi-separation Mode	3	×
F09.01	Motor 1 Torque Boost	0.0～30.0%　0.0%：（Auto Torque Boost）	Type Fixed	△
F09.02	Motor 1 Cut-off frequency of Torque-Boost	0.00～Maximum Frequency	50.00Hz	△
F09.03	Motor 1MultipointV/F frequency points1	0.00～F09.05	0.00Hz	△
F09.04	Motor 1 Multipoint VF Voltage Points 1	0.0～100.0	0.0%	△
F09.05	Motor 1 Multipoint V/F frequency points2	F09.03～F09.05	0.00Hz	△
F09.06	Motor 1 Multipoint VF Voltage Points 2	0.0～100.0	0.0%	△
F09.07	Motor 1 Multipoint V/F frequency points3	F09.05～F09.09	0.00Hz	△
F09.08	Motor 1 Multipoint VF Voltage Points 3	0.0～100.0	0.0%	△
F09.09	Motor 1 Multipoint V/F frequency points4	F09.07～Rated Frequency of Motor	50.00Hz	△
F09.10	Motor 1 Multipoint VF Voltage Points 4	0.0～100.0　Ue=100.0%	100.0%	△
F09.11	VF Slip Compensation Gain	0.0～300.0%	0.0%	△
F09.12	VF Stator Voltage-drop Compensation Gain	0.0～200.0%	100.0%	△
F09.13	VF Excitation Compensation Gain	0.0～200.0%	100.0%	△
F09.14	VF Oscillation Suppression Gain	0.0～300.0%	0.0%	△

F11 Group: Fault and Protection				
F11.00	Control of Overcurrent Stall	0：Null 1: Overcurrent Stall Mode 1 2: Overcurrent Stall Mode 2	1	×
F11.01	Protection current of Overcurrent Stall	100.0～200.0%	150.0%	×
F11.02	Frequency Fall Time of Constant Speed Overcurrent Stall	0.0～6000.0s (Mode 1 is Active）	5.0s	△
F11.03	Overcurrent Stall Mode 2 Proportion Coefficient	0.1～100.0%	3.0%	△
F11.04	Overcurrent Stall Mode 2 Integral Time	0.000～1.000s （0.000：Integral Invalid）	0.010s	△
F11.05	Control of Overvoltage Stall	0：Null 1: Overvoltage Stall Mode 1 2: Overvoltage Stall Mode 2	1	×
F11.06	Voltage of Overvoltage Stall	120.0～150.0%	130.0%	×
F11.07	Overvoltage Stall Mode 2 Proportion Coefficient	0.1～100.0%	3.0%	△
F11.08	Overvoltage Stall Mode 2 Integral Time	0.000～1.000s （0.000：Integral Invalid）	0.010s	△
F11.10	Selection of failsafe action 1	Ones: Bus Undervoltage Protection（Err07） 0：Reporting faults and freely parking 1：Alarming and parking by deceleration mode 2：Alarm and continue running on fault frequency 3：Protection Invalid Tens: Input Phase-protection (Err09) (like ones) Hundreds: Output Phase-protection (Err10) (like ones) Thousands: Motor Overload Protection (Err10) (like ones) Myriabit: Inverter Overload Protection（Err12)(like ones)	03000	×
F11.11	Selection of failsafe	Ones: External Input	00000	×

	action 2	Failure-protection（Err13）		
		0：Reporting faults and freely parking		
		1：Alarming and parking by deceleration mode		
		2：Alarm and continue running on fault frequency		
		Tens: Memory Failure (Err15) (like ones)		
		Hundreds: 485 communication timeout (Err18) (like ones)		
		Thousands: PID feedback disconnection when running（Err19）(like ones)		
		Myriabit: running time arrives（Err20）(like ones)		
F11.12	Selection of failsafe action 3	Ones: Disconnection Fault of Temperature Sensor（Err24）	00000	×
		0：Reporting faults and freely parking		
		1：Alarming and parking by deceleration mode		
		2：Alarm and continue running on fault frequency		
		Tens: Inverter load-lost（Err25）（0～3）		
		Hundreds: Reserved		
		Thousands: Reserved		
		Myriabit: Reserved		
F11.14	When failure, frequency selection of continue running	0：Running on current setting frequency	0	×
		1：Running on setting frequency		
		2：Running on upper-limit frequency		
		3：Running on lower-limit frequency		
		4：Running on abnormal spare-frequency		
F11.15	Abnormal Alternate Frequency	0.00～Fmax	0.00Hz	×
F11.17	Protection time of Motor	30.0～300.0s	60.0s	×

	Overload			
F11.18	Selection of Overload Pre-warning	Ones: selection of detection 0：always detection 1：detection only when constant speed Tens: condition selection of detection 0：responds to rated current of motor 1：responds to rated current of inverter	00	×
F11.19	Detectable Level of Overload Pre-alarm	20.0～200.0%	130.0%	×
F11.20	Detectable Time of Overload Pre-alarm	0.1～60.0s	5.0s	×
F11.21	Pre-alarm Temperature of Inverter Overheat	50.0～100.0℃	70.0℃	×
F11.22	Detectable Level of load-loss	5.0～100.0%	20.0%	×
F11.23	Detectable Time of load-loss	0.1～60.0s	5.0s	×
F11.24	Operation selection of instantaneous power failure	0：Null 1：Valid	1	×
F11.25	Frequency deceleration time of instantaneous power failure	0.0～6000.0s	5.0s	△
F11.26	Selection control of fast current-limit	0：Prohibit 1：Permit	0	×
F11.27	Auto-Reset Times of failure	0～20	0	×
F11.28	Auto-Reset Interval of failure	0.1～100.0s	1.0s	×
F11.29	During the fault auto-resetting,program Of switch output terminal , is action selection of output fault	0：No action 1：Action	0	×
Group F12: Multi-Reference and Simple PLC Function				
F12.00	Reference 0	-100.0～100.0%	30.0%	△
F12.01	Reference 1	-100.0～100.0%	100.0%	△

F12.02	Reference 2	-100.0～100.0%	0.0%	△
F12.03	Reference 3	-100.0～100.0%	0.0%	△
U00 Group: Status Monitoring				
U00.00	Output Frequency	0.00～Fup	0.00Hz	⊙
U00.01	Setting Frequency	0.00～Fmax	0.00Hz	⊙
U00.02	Actual value of output voltage	0～660V	0.0V	⊙
U00.03	Actual value of output current	0.0～3000.0A	0.0A	⊙
U00.04	Output Power	-3000.0～3000.0kW	0.0kW	⊙
U00.05	Output Rotation-rate	0～60000rpm	0rpm	⊙
U00.06	DC Bus Voltage	0～1200V	0V	⊙
U00.07	Synchronization Frequency	0.00～Fup	0.00Hz	⊙
U00.08	PLC Stage	1～15	1	⊙
U00.09	Program Running Time	0.0～6000.0s(h)	0.0s(h)	⊙
U00.10	PID Given	0～60000	0	⊙
U00.11	PIDArithmetic Feedback	0～60000	0	⊙
U00.12	DI1～DI5 Input Status	DI5 DI4 DI3 DI2 DI1	00000	⊙
U00.13	DI6～DI7 Input Status	DI7 DI6	00	⊙
U00.14	Digital Output Status	R2 R1 Y2 Y1	0000	⊙
U00.15	AI1 Input	0.0～100.0%	0.0%	⊙
U00.16	AI2 Input	0.0～100.0%	0.0%	⊙
U00.17	AI3 Input	-100.0～100.0%	0.0%	⊙
U00.18	Keyboard Potentiometer Input	0.0～100.0%	0.0%	⊙
U00.19	HI Pulse Input Frequency	0.00～100.00kHz	0.00kHz	⊙
U00.20	A01 Output	0.0～100.0%	0.0%	⊙
U00.21	A02 Output	0.0～100.0%	0.0%	⊙
U00.22	HO Pulse Output Frequency	0.00～100.00kHz	0.00kHz	⊙
U00.23	Temperature of Inverter Module	-40.0℃～120.0℃	0.0℃	⊙
U00.24	The Power-on Time	0～65535min	0min	⊙
U00.25	The Running Time	0～6553.5min	0.0min	⊙
U00.26	Cumulative Power-on Time	0～65535h	0h	⊙
U00.27	Cumulative Running Time	0～65535h	0h	⊙
U00.28	Actual Count Value	0～65535	0	⊙
U00.29	Actual Length Value	0～65535m	0m	⊙
U00.30	Line Speed	0～65535m/min	0m/Min	

U00.31	Output Torque	0.0～300.0%	0.0%	⊙
U01 Group: Failure Record				
U01.00	Current Fault Category	Err00：No Fault Err01：Accelerated Overcurrent Err02：Decelerated Overcurrent Err03：Constant Speed Overcurrent Err04：Accelerated Overvoltage Err05：Decelerated Overvoltage Err06：Constant Speed Overvoltage Err07：Bus Undervoltage Protection Err08：Short Circuit Protection Err09：Input Open Phase Err10：Output Open Phase Err11：Motor Overload Err12：Inverter Overload Err13：Fault protection of external input Err14：Overheat Err15：Memory Failure Err16：Cancel Autotuning Err17：Autotuning Failure Err18：485 Communication Timeout Err19：PID feedback disconnection on runtime Err20：running time arrives Err21：Parameter Upload Error Err22：Parameter Download Error Err23：Braking Unit Failure Err24：Disconnection fault of temperature sensor Err25：Lose-load failure/alarm of Inverter Err26：with-wave current limit fault Err27：Soft-start relay unclosed Err28：EEPROM Version	0	⊙

		Incompatible Err29：Instantaneous overcurrent Err30： Instantaneous overvoltage		
U01.01	Output frequency of the current fault	0.00～Fup	0.00Hz	⊙
U01.02	Output current of the current fault	0.0～3000.0A	0.0A	⊙
U01.03	c of the current fault	0～1200V	0V	⊙
U01.04	Cumulative runtime of the current fault	0～65535h	0h	⊙
U01.05	Former one fault category	Like the latest one fault record	0	⊙
U01.06	Output frequency of the former one fault	0.00～Fup	0.00Hz	⊙
U01.07	Output current of the former one fault	0.0～3000.0A	0.0A	⊙
U01.08	Bus Voltage of the former one fault	0～1200V	0V	⊙
U01.09	Cumulative runtime of the former one fault	0～65535h	0h	⊙
U01.10	Former two fault categories	Like the latest one fault record	0	⊙
U01.11	Output frequency of the former two faults	0.00～Fup	0.00Hz	⊙
U01.12	Output current of the former two faults	0.0～3000.0A	0.0A	⊙
U01.13	Bus Voltage of the former two faults	0～1200V	0V	⊙
U01.14	Cumulative runtime of the former two faults	0～65535h	0h	⊙
H00 Group: Elevator Special Group				
H00.00	Special Inverter Function Enable	0: Null 1: Valid	1	×
H00.01	Brake Open Delay	0.00～10.00s	0.00s	×
H00.02	Start Frequency	0.00～10.00Hz	5.00Hz	×
H00.03	Start Frequency Holding Time	0.00～10.00s	0.00s	×
H00.04	Brake Release Delay	0.00～10.00s	0.20s	×
H00.05	Brake Open Frequency (Rising)	0.00～10.00Hz	3.00Hz	×

H00.06	Brake Release Frequency (Rising)	0.00～10.00Hz	3.00Hz	×
H00.07	Brake Open Frequency (Falling)	0.00～10.00Hz	3.00Hz	×
H00.08	Brake Release Frequency (Falling)	0.00～10.00Hz	3.00Hz	×
H00.09	Brake Open Current	0.0～100.0%	40.0%	△
H00.10	Brake Open Frequency Holding Time	0.00～10.00s	0.30s	×
H00.11	Brake Open Type	0:open according to frequency 1:open according to frequency and current	0	×
H00.12	Emergency Operation Frequency	0.00～50.00Hz	20.00Hz	△
H00.13	Overhaul Operation Frequency	0.00～50.00Hz	20.00Hz	△
H00.14	Emergency Signal Processing	0: Elevator no run 1: UPS Power-on and run	1	×
H00.15	Torque output delay	0.00~10.00s	0.20s	×
H00.16	Running contactor release delay	0.00~10.00s	0.10s	×

3.2 H00 group function code detailed explanation

H00.00	Special Inverter Function Enable	0：Null 1：Valid	1	×

0：Null

Standard Machine

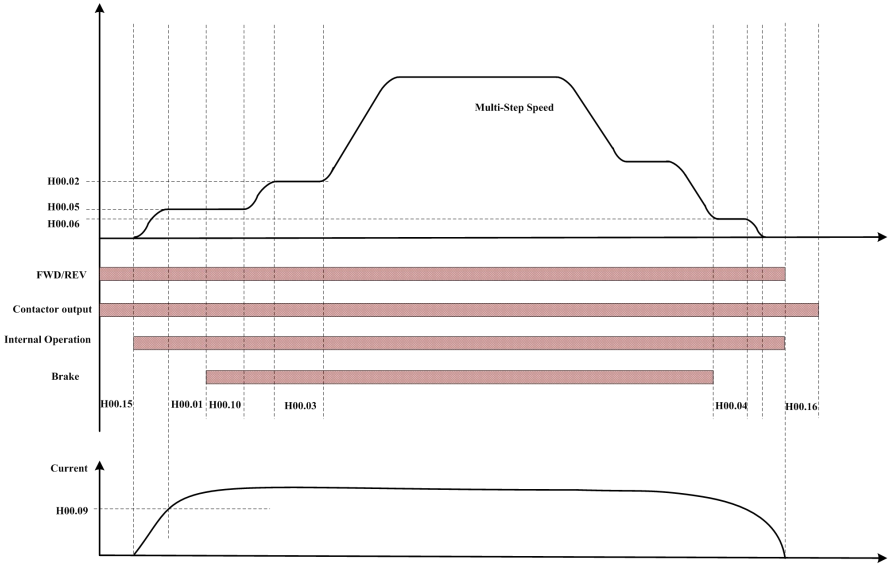
1：Valid

Special Purpose Inverter for Elevator, H00 group parameter is valid.

H00.01	Brake Open Delay	0.00～10.00s	0.00s	×
H00.02	Start Frequency	0.00～10.00Hz	5.00Hz	×
H00.03	Start Frequency Holding Time	0.00～10.00s	0.00s	×
H00.04	Brake Release Delay	0.00～10.00s	0.20s	×
H00.05	Brake Open Frequency (Rising)	0.00～10.00Hz	3.00Hz	×
H00.06	Brake Release Frequency (Rising)	0.00～10.00Hz	3.00Hz	×
H00.07	Brake Open Frequency (Falling)	0.00～10.00Hz	3.00Hz	×

H00.08	Brake Release Frequency (Falling)	0.00～10.00Hz	3.00Hz	×
H00.09	Brake Open Current	0.0～100.0%	40.0%	△
H00.10	Brake Open Frequency Holding Time	0.00～10.00s	0.30s	×
H00.15	Torque output delay	0.00~10.00s	0.20s	×
H00.16	Running contactor release delay	0.00~10.00s	0.20s	×

Setting function code H00.01~H00.10 can well adjust the comfortable of elevators run/stop, exactly meaningof every function code shown as below:



H00.05(Brake Open Frequency (Rising))、H00.06(Brake Release Frequency (Rising)) and H00.07(Brake Open Frequency (Falling))、H00.08(Brake Release Frequency (Falling)) have the same meaning, rising group use for frequency adjusting on FWD, falling group use for frequency adjusting on REV.

H00.11	Brake Open Type	0: open according to frequency 1: open according to frequency and current	0	×

0：Open according to frequency

Criteria for judging the brake opening is inverters output reach to the setting frequency of H00.05 (rising) or H00.07 (falling), and then open the brake by setting time of H00.01 (Brake Open Delay).

1: Open according to frequency and current

Criteria for judging the brake opening is inverters output reach to the setting frequency of H00.05 (rising) or H00.07 (falling), meanwhile, inverter current reach H00.09 (brake open current) setting value.

H00.12	Emergency Operation Frequency	0.00～50.00Hz	20.00Hz	△

When emergency signal input, inverters will enter the emergency operating condition, operating frequency is the setting value of function code, on emergency operating status, inverters will choose acce/dece time 4 as the current acce/dece time.

H00.13	Overhaul Operation Frequency	0.00～50.00Hz	20.00Hz	△

When overhaul signal input, inverter will run according to the overhaul operation frequency.

H00.14	Emergency Signal Processing	0: Elevator no run 1: UPS Power-on and run	1	×

0: Elevator no runs

When there is the emergency signal input, inverter no output.

1: UPS Power-on and run

When there is emergency signal input, inverter powered by UPS and output on emergency frequency.

Chapter 4 Troubleshooting

FR200D inverter provides a number of warning information and protection, when a fault occurs, the protective function is activated, the inverter will stop output, inverter fault relay contact, and in the inverter displays the fault code on the display panel. Before seeking service user can press the self-examination tips in this section, analyze problems, and identify solutions. If the problem still cannot be excluded, seek services, or contact the dealer you purchase the inverter with my company.

Display	Fault Name	Possible Causes	Solutions
Err01	Accel overcurrent	1: The output circuit is grounded or short circuited. 2: The acceleration time is too short. 3: Manual torque boost or V/F curve is not appropriate. 4: The voltage is too low. 5: The startup operation is performed on the rotating motor. 6: A sudden load is added during acceleration. 7: The AC drive model is of too small power class.	1: Eliminate external faults. 2: Increase the acceleration time. 3: Adjust the manual torque boost or V/F curve. 4: Adjust the voltage to normal range. 5: Select rotational speed tracking restart or start the motor after it stops. 6: Remove the added load. 7: Select an AC drive of higher power class
Err02	Decel overcurrent	1: The output circuit is grounded or short circuited. 2: The deceleration time is too short. 3: The voltage is too low. 4: A sudden load is added during deceleration. 5: The braking unit and braking resistor are not installed.	1: Eliminate external faults. 2: Increase the deceleration time. 3: Adjust the voltage to normal range. 4: Remove the added load. 5: Install the braking unit and braking resistor.
Err03	Constant-speed overcurrent	1: The output circuit is grounded or short circuited. 2: The voltage is too low. 3: A sudden load is added during operation. 4: The AC drive model is of too small power class.	1: Eliminate external faults 2: Adjust the voltage to normal range. 3: Remove the added load 4: Select an AC drive of higher power class.

Err04	Accel overvoltage	1: The input voltage is too high. 2: An external force drives the motor during acceleration. 3: The acceleration time is too short. 4: The braking unit and braking resistor are not installed.	1: Adjust the voltage to normal range. 2: Cancel the external force or install a braking resistor. 3: Increase the acceleration time. 4: Install the braking unit and braking resistor.
Err05	Decel overvoltage	1: The input voltage is too high. 2: An external force drives the motor during deceleration. 3: The deceleration time is too short. 4: The braking unit and braking resistor are not installed.	1: Adjust the voltage to normal range. 2: Cancel the external force or install the braking resistor. 3: Increase the deceleration time. 4: Install the braking unit and braking resistor.
Err06	Constant-speed overvoltage	1: The input voltage is too high 2: An external force drives the motor during deceleration.	1: Adjust the voltage to normal range. 2: Cancel the external force or install the braking resistor.
Err07	Bus undervoltage	1: Instantaneous power failure occurs on the input power supply. 2: The AC drive's input voltage is not within the allowable range. 3: The bus voltage is abnormal. 4: The rectifier bridge and buffer resistor are faulty. 5: The drive board is faulty. 6: The main control board is faulty.	1: Reset the fault. 2: Adjust the voltage to normal range. 3: Contact the agent or Frecon.
Err08	Short circuit	1: The output circuit is grounded or short circuited. 2: The connecting cable of the motor is too long. 3: The module overheats. 4: The internal connections become loose. 5:The main control board is faulty 6: The drive board is faulty.	1: Eliminate external faults. 2: Install a reactor or an output filter. 3: Check the air filter and the cooling fan. 4: Connect all cables properly. 5: Contact the agent or Frecon.

		7: The inverter module is faulty.	
Err09	Power input phase loss	1: The three-phase power input is abnormal. 2: The drive board is faulty. 3: The lightening board is faulty. 4: The main control board is faulty.	1: Eliminate external faults. 2: Contact the agent or FRECON.
Err10	Power output phase loss	1: The cable connecting the AC drive and the motor is faulty. 2: The AC drive's three-phase outputs are unbalanced when the motor is running. 3: The drive board is faulty. 4: The module is faulty.	1: Eliminate external faults. 2: Check whether the motor Three-phase winding is normal. 3: Contact the agent or Frecon.
Err11	Motor overload	1: F11-17 is set improperly. 2: The load is too heavy or locked-rotor occurs on the motor. 3: The AC drive model is of too small power class.	1: Set F11-17 correctly. 2: Reduce the load and check the motor and the mechanical condition. 3: Select an AC drive of higher power class.
Err12	Inverter overload	1: The load is too heavy or locked-rotor occurs on the motor. 2: The AC drive model is of too small power class.	1: Reduce the load and check the motor and mechanical condition. 2: Select an AC drive of higher power class.
Err13	External equipment fault	1: External fault signal is input via DI.	Reset the operation.
Err14	Module overheat	1: The ambient temperature is too high. 2: The air filter is blocked. 3: The fan is damaged. 4: The thermally sensitive resistor of the module is damaged. 5: The inverter module is damaged.	1: Lower the ambient temperature. 2: Clean the air filter. 3: Replace the damaged fan. 4: Replace the damaged thermally sensitive resistor. 5: Replace the inverter module.
Err15	EEPROM read/write fault	The EEPROM chip is damaged.	Replace the main control board.
Err16	Motor auto-tuning cancelled	Since the identification process, press STOP / RST key	Press STOP / RST key to reset
Err17	Motor	1: the motor and the inverter	1: check the connection

	auto-tuning fault	output terminals are not connected 2: The motor does not disengage the load 3: The electrical fault	between the inverter and motor 2: The motor is disengaged load 3: Check the motor
Err18	Communication overtime error	1: The PC is not working properly 2: The communication line is not normal 3: F15 set communication parameters set incorrectly	1: Check the PC Connection 2: Check the communication cable 3: The communication parameters are set correctly
Err19	PID feedback loss	PID feedback set value is less than F13.24	Check the PID feedback signal or set to an appropriate value F13.24
Err20	Continuous running time reached	Set the running time to reach this function	reference F05.14 Description
Err21	Parameter upload fault	1: Is not installed or is not plugged parameter copy card 2: Parameter copy card anomalies 3: The control board abnormalities	1: a copy of the card is properly installed parameters 2: for technical support 3: for technical support
Err22	Parameter download fault	1: Is not installed or is not plugged parameter copy card 2: Parameter copy card anomalies 3: The control board abnormalities	1: A copy of the card is properly installed parameters 2: For technical support 3: For technical support
Err23	Braking unit fault	1: The brake line failure or damage the brake pipe 2: An external braking resistor is too small	1: Check the brake unit, replace the brake pipe 2: Increasing the braking resistor
Err24	Module temperature detection disconnection	The temperature sensor failure or cable break	For technical support
Err25	Load becoming0	The AC drive running current is lower than F11.22	Check that the load is disconnected or the setting F11-22 and F11-23 is correct.

Err26	With-wave current limit fault	1: The load is too heavy or locked rotor occurs on the motor. 2: The AC drive model is of too small power class.	1: Reduce the load and check the motor and mechanical condition. 2: Select an AC drive of higher power class.
Err27	Inverter soft-start relay is off	1: The grid voltage is too low 2: Rectifier module failure	1: Check the grid voltage 2: Demand for technical support
Err28	Software version compatibility fault	1: The upper and lower transmission module parameters in the parameter version of the control panel version mismatch.	re-upload module parameters to pass down
Err29	Instantaneous overcurrent	1. Inverter output circuit being grounded or short-circuit; 2. The acceleration and deceleration time is too short; 3. Manually torque boost or V/F curve not appropriate; 4. Voltage too low; 5. Start the running motor; 6. Sudden-load in the acce process; 7. Model selection of inverter power is too small.	1. Troubleshooting peripheral problems; 2. To increase the acceleration time; 3. Adjust the manually torque boost or V/F curve; 4. Adjust the voltage to normal range; 5. Select RPM track start or start after motor stopped; 6. Cancel sudden-load; 7. Select the inverter with larger power.
Err30	Instantaneous overvoltage	1: Input voltage is too high; 2. There is external force drag the motor to run in dece process; 3. The deceleration time is too short; 4. No installation of braking resistor.	1: Adjust the voltage to normal range; 2. Cancel external force or install brake resistor; 3. To increase the deceleration time; 4. Install braking resistor