Parameters list

○—Parameter that can be modified in any state

×—Parameter that can not be modified in running state

◆—Actual test parameters and cannot be modified

◇—Factory parameters which are limited to be modified by manufacturer, and the user is prohibited from modifying

Group F0 - Basic operating parameters

Function Code	Name	Content	Setting range	Factory Default	Modific-ation
F0.00	Power specification of frequency converter	Display the current power	0.10~99.99kw	Device setting	◆
F0.01	Software version of the master controller	Display the version number of current software	1.00~99.99	1.01	◆
F0.02	Run command channel selection	0: The panel runs command channel 1: The terminal runs command channel 2: The communication runs command channel	0~2	0	○
F0.03	Frequency setting selection	0: Panel potentiometer 1: Number given 1, adjust by operating ▲/▼ keys on the panel 2: AVI simulation given (0~10V) 3. Number given 2, adjust the frequency by terminals UP/DOWN 4: 2-speed terminal will access to the setting and run, adjust the frequency by terminals UP/DOWN 5: 2-speed terminal will trigger the setting and run 6: Communication setting	0~6	0	○
F0.04	Operating frequency digital setting	It is the initial value of frequency digital setting	0.0~Upper limit frequency	50.0Hz	○

F0.05	Digital frequency control	LED's ones place: Store the parameter at power off 0: Store 1: Do not store LED's tens place: Hold during downtime 0: Hold on 1: Hold off LED's hundreds place: Reserve LED's thousands place: Do not reserve	0011	00	○
F0.06	Running direction setting	0: Forward 1: Reverse	0~1	0	○
F0.07	Maximum output frequency	The maximum output frequency is the highest frequency allowed by the frequency converter and the reference for the acceleration/ deceleration setting.	MAX {50.0 [F0.05]} ~ 999.9 HZ	50.0Hz	×
F0.08	Upper limit frequency	The operating frequency cannot exceed this frequency	MAX {0.1 [F0.09]} ~ [F0.08]	50.0Hz	×
P0.09	Lower limit frequency	The operating frequency cannot be lower than this frequency	0.0~Upper limit frequency	0.0Hz	×
F0.10	Acceleration time	Time required for the frequency converter to accelerate from zero frequency to the maximum output frequency	0.1~999s 0.4~4.0KW 7.5s	Device setting	○
F0.11	Deceleration time	Time required for the frequency converter to decelerate from maximum output frequency to zero frequency			○
F0.12	The amount of torque lift	This parameter is manual torque lift, and you should set it as 0.0 if you need high torque. This value setting is the percentage relative to the motor rating voltage.	0.0~30.0%		○

F0.13	The cut-off frequency of torque lift	This setting is the lifting cut-off frequency point of manual torque lift	0.0~50.0Hz	15.0Hz	×
F0.14	Carrier frequency setting	For the occasion of silent operation, the carrier frequency can be increased to meet the requirements appropriately, but increasing the carrier frequency will increase the heat of frequency converter.	3.0~8.0KHz 0.4~3.0KW 4.0KHz 4.0~7.5KW 3.0KHz	Device setting	×
F0.15	Stop mode	0: Slow down to stop 1: Stop freely	0~1	0	×
F0.16	Inching frequency setting	Set the inching frequency	0.0~Upper limit frequency	10.0Hz	○
F0.17	AI1 input lower limit voltage	Set the AI1 input upper and lower limit voltage/ current	0.00~5.00 V/ 0.00~20.00 mA	0.00V	○
F0.18	AI1 input upper limit voltage	Set the AI1 input upper and lower limit voltage/ current	0.00~5.00 V/ 0.00~20.00 mA	5.00V	○
F0.19	AI1 lower limit corresponding setting	Set the AI1 up and lower limit corresponding setting, which is the percentage of upper limit [F0.08]	-100%~100%	0.0%	○
F0.20	AI1 upper limit corresponding setting	Set the AI1 up and lower limit corresponding setting, which is the percentage of upper limit [F0.08]	-100%~100%	100.0%	○
F0.21	Function of input terminal X1	0: Control terminal is in idle 1: Drive-by-wire stops/runs 2: Key stops/runs 3: Key runs 4: Key stops 5: Drive-by-wire runs forward 6: Drive-by-wire runs reversely 7: Reserve 8: Error reset signal 9: Forward and reverse switch of drive-by-wire 10: Forward and reverse switch of key	0~26	1	×
F0.22	Function of input terminal X2	0: Control terminal is in idle 1: Drive-by-wire stops/runs 2: Key stops/runs 3: Key runs 4: Key stops 5: Drive-by-wire runs forward 6: Drive-by-wire runs reversely 7: Reserve 8: Error reset signal 9: Forward and reverse switch of drive-by-wire 10: Forward and reverse switch of key	0~26	2	×

F0.23	Function of input terminal X3	11: Key runs forward 12: Key runs reversely 13: Multi-speed 1 14: Multi-speed 2 15: Multi-speed 3 16: External error signal 17: Forward inching 18: Reverse inching 19: Emergency stop 20: Relay control 21: Set the terminal frequency to 0 22: Increase the terminal frequency 23: Decrease the terminal frequency 24: Select speed period 1 and run 25: Select speed period 2 and run 26: Multi-speed stops (only valid to function 24,25)	0~26	7	×
F0.24	Function of input terminal X4		0~26	0	×
F0.25	Function of input terminal X5		0~26	0	○
F0.26	Y output setting	0: In idle 1: The converter is running 2: The converter is broken 3: Input setting 20 is valid 4~20: Reserve	0~20	0	○
F0.27	R output setting		0~20	2	○
F0.28	Rated voltage of motor	Parameters setting of motor	0~500V: 380V 0~250V: 220V	Device setting	× ×
F0.29	Rated power of motor		1.0~999.9Hz	50.0Hz	×
F0.30	Rated current of motor		0.1~999.9A	Device setting	×
F0.31	No-load current of motor		0.1~999.9A		○
F0.32	Resistance of motor stator	Set the Resistance of motor stator	0.001~20.000Ω		○
F0.33	Slip compensation selection	0: Invalid 1: Valid	0~1	0	
F0.34	Protection coefficient of motor overload	The protection coefficient of motor overload is the percentage of the rated current value of motor to the rated output current of the frequency converter.	0%~200%	100%	×

F0.35	Undervoltage protection level	This function code specifies the lower limit voltage allowed by the DC bus when the frequency converter is working normally.	50~280/ 50~480 V	180/360V	×
F0.36	Parameter initialization	0: No operation The frequency converter is in the normal parameter read-write state. Whether the function code setting value can be changed depends on the setting state of the user's password and the current working state of the frequency converter. 1: Reset factory settings All the user parameters are reset to the factory settings according to device.	0~1	0	×
F0.37	Multi-speed frequency 1	Set the frequency of velocity period 1	Negative upper limit frequency~ Upper limit frequency	5.0Hz	○
F0.38	Multi-speed frequency 2	Set the frequency of velocity period 2		10.0Hz	○
F0.39	Multi-speed frequency 3	Set the frequency of velocity period 3		15.0Hz	○
F0.40	Multi-speed frequency 4	Set the frequency of velocity period 4		25.0Hz	○
F0.41	Multi-speed frequency 5	Set the frequency of velocity period 5		35.0Hz	○
F0.42	Multi-speed frequency 6	Set the frequency of velocity period 6		45.0Hz	○
F0.43	Multi-speed frequency 7	Set the frequency of velocity period 7		50.0Hz	○
F0.44	Acceleration time 2	Set the acceleration and deceleration time 2	0.1~999.9s 0.4~4.0KW 10.0s 5.5~7.5KW 15.0s	10.0s	○
F0.45	Deceleration time 2				
F0.46	Inching acceleration time	Set the inching acceleration and deceleration time	0.1~255.0s 0.4~4.0KW 10.0s 5.5~22KW 15.0s	Device setting	○
F0.47	Inching deceleration time				○

F0.48	Limiting coefficient of decelerating voltage	This parameter is used to adjust the ability of the frequency converter to suppress overvoltage during deceleration.	0: shut down, 1 ~255	1	×
F0.49	Over-voltage limiting level	This parameter defines the operating voltage for over-voltage stalling protection	350~400 / 660~850V	375 /790 V	×
F0.50	Limiting coefficient of accelerating current	This parameter is used to adjust the ability of the frequency converter to suppress overcurrent during acceleration.	0: shut down, 1~99	10	×
F0.51	Limiting coefficient of constant speed current	This parameter is used to adjust the ability of the frequency converter to suppress overcurrent during constant speed.	0: shut down, 1~10	0	×
F0.52	Current limiting level	This parameter defines the current threshold of the automatic current limiting action, and its setting value is the percentage of the rated current of the frequency converter.	50%~200%	180%	×
F0.53	Main interface display selection	LED's ones place: Selection of monitoring parameter in running state. You can change the monitoring items of main interface display by changing the setting value of this function code. For example, set the ones place of F0.53 equal to 4, which means select the output current d-04, and the default display item of the main monitoring interface is the current output current value during operation. LED's tens place: Selection of monitoring parameter during downtime. You can change the monitoring items of main interface display by changing the setting value of this function code. For	00~FF	10	×

		example, set the tens place of F0.53 equal to 8, which means select the module temperature d-08, and the default display item of the main monitoring interface is the current module temperature during downtime. LED hundreds place: Reserve LED thousands place: Reserve			
F0.54	UP/DOWN adjusting frequency rate	Set the UP/DOWN adjusting frequency rate	0.0~50.0Hz/s	10.0	○
F0.55	Terminal electrical level selection	0: Electrical level mode 1: Trigger mode	0~1	0	×
F0.56	Terminal input filter coefficient	Set the terminal input filter coefficient	0~9999	10	○
F0.57	Terminal input logic	Set terminal input logical	0~1FH	0	○
F0.58	Native address	Set the native address, and 0 is the broadcast address.	0~247	1	○
F0.59	MODBUS communication configuration	LED ones place: Baud rate selection 0: 9600BPS 1: Reserve 2: Reserve LED tens place: Data format 0: No parity 1: Even parity 2: Odd parity LED Hundreds place: Communication response mode 0: Normal response 1: Only respond to the slave's address 2: No response 3: Slave does not respond to the free stop command of the host in broadcast mode LED Thousands place: Reserve	0000~0322	000	○

F0.60	Communication timeout detection time	If the native does not receive the correct digital signal within the interval time defined by this function code, then the native machine thinks that the communication has failed, and the frequency converter will decide whether to protect or maintain the current operation according to the setting of the communication failure action mode; when the value is set to 0.0, RS485 communication timeout detection will not work.	0.1~100.0s	10.0	○
F0.61	Native response delay	This function code defines the interval time between the end of the data frame reception of the frequency converter and the transmission of the response data frame to the host computer. If the response time is less than the system processing time, the system processing time shall prevail.	0~200ms	5	○
F0.62	Proportional linkage coefficient	This function code is used to set the weight coefficient of the frequency command of the frequency converter received through the RS485 interface as the slave. The actual running frequency of the native is equal to the value of this function code multiplied by the frequency setting command value received through the RS485 interface. In the linkage control, this function code can set the ratio of the running frequency of multiple frequency converters.	0.01~10.00	1.00	○

F0.63	Communication selection	0: Invalid 1: Valid	0~1	0	○
F0.64	PID function setting	LED ones place: PID sleeping selection 0: Invalid 1: Normal sleeping This mode needs to set specific parameters such as F0.69~F0.72 2: Disturbed sleeping Which is the same as parameter setting when the sleep mode is selected as 0. If the PID feedback value is within the range of the F0.75 set value, enter the disturbed sleeping after the sleep delay time is maintained. When the feedback value is less than the awakening threshold (the PID polarity is positive), it will wake up immediately. LED tens place: PID feedback disconnection selection 0:InValid 1: Valid LED hundreds place: Reserve LED thousands place: Reserve	00~12	1	×
F0.65	The given amount digital setting	Use the operation keypad to set the given amount of PID control.	0.0~100.0%	0.0%	○
F0.66	Range of sensor	Set the maximum range of sensor	0.00~99.99(MPa 、Kg)	10.0MPa	×
F0.67	Proportional gain P	The speed of the PID adjustment is set by the two parameters of proportional gain and integration time. It is required to increase the proportional gain and reduce the integration time to get high adjustment speed. It is required to reduce the proportional gain	0.01~5.00	2.00	○

F0.68	Integration time Ti	and increase the integration time to get a low adjustment speed. In general, the derivative time is not need to be set.	0.1~50.0s	1.0s	○
F0.69	Wake-up threshold coefficient	If the actual feedback value is greater than the set value and the output frequency of the frequency converter reaches the lower limit frequency, the frequency converter enters the sleeping state (i.e., zero speed running) after the delay waiting time defined by F0.71; the value is the percentage of PID set value.	0.0~150.0%	100.0%	○
F0.70	Delayed sleep time	Set the sleep delay time	0.0~999.9s	100.0s	○
F0.71	Awakening threshold coefficient	If the actual feedback value is less than the set value, the frequency converter will leave the sleeping state after the delay waiting time defined by F0.71, and start to work; this value is the percentage of the PID set value	0.0~150.0%	90.0%	○
F0.72	Delayed awakening time	Set the delayed awakening time	0.0~999.9s	1.0s	○
F0.73	Gain of Feedback channel	This function can be used to adjust the gain of the feedback channel signal when the feedback channel does not match the set channel level.	0.01~10.00	1.00	○
F0.74	The difference between the feedback and the set pressure when enter sleeping	This function parameter is valid only for the disturbed sleeping mode.	0.0~10.0%	0.5%	○

Group F1-Basic operating parameters					
Function code	**Name**	**Content**	**Setting range**	**Factory default**	**Modific -ation**
F1.00	Manufacturer password	Set the manufacturer password	1~9999	****	◇

Group d - Monitoring parameter group					
Function code	**Name**	**Range**	**Minimum unit**	**Factory default**	**Modific ation**
d-00	Output frequency (Hz)	0.0~999.9Hz	0.1Hz	0.0Hz	◆
d-01	Set frequency (Hz)	0.0~999.9Hz	0.1Hz	0.0Hz	◆
d-02	Output voltage (V)	0~999V	1V	0V	◆
d-03	Bus voltage (V)	0~999V	1V	0V	◆
d-04	Output current (A)	0.0~999.9A	0.1A	0.0A	◆
d-05	Terminal input state	0~1FH	1H	0	◆
d-06	Terminal output state	0~FH	1H	0	◆
d-07	AI1 Analog input (V/mA)	0.00~5.00 V/20.00mA	0.01V/mA	0.00	◆
d-08	Module temperature (°C)	0.0~132.3℃	0.1℃	0.0	◆
d-09	PID pressure feedback value 1	0.00~10.00V	0.01V	0.00V	◆
d-10	PID pressure feedback value 2	0.00~10.00V	0.01V	0.00V	◆
d-11	PID pressure feedback value 1	0.00~99.99(MPa、Kg)	0.01(MPa、Kg)	0.00(MPa、Kg)	◆
d-12	PID pressure feedback value 2	0.00~99.99(MPa、Kg)	0.01(MPa、Kg)	0.00(MPa、Kg)	◆
d-13	Software upgrade date (year)	2010~2026	1	2018	◆
d-14	Software upgrade date (month, day)	0~1231	1	1020	◆

d-15	Last fault code	0~14	1	0	◆
d-16	Current fault code	0~14	1	0	◆
d-17	Output frequency (Hz) in the most recent fault	0.0~999.9Hz	0.1Hz	0.0Hz	◆
d-18	Output current (A) in the most recent fault	0.0~999.9A	0.1A	0.0V	◆
d-19	Bus voltage (V) in the most recent fault	0~999V	1V	0V	◆

Group E - Basic operating parameters

Fault code	Name	Content	Failure countermeasures
Er01	Overcurrent during acceleration	Acceleration time is too short	Increase the acceleration time
		The power of frequency converter is small	Use a frequency converter with a large power level
		Improper setting of V/F curve or torque lift	Adjust the V/F curve or amount of torque lift
Er02	Overcurrent during deceleration	Deceleration time is too short	Increase the deceleration time
		The power of frequency converter is small	Use a frequency converter with a large power level
Er03	Overcurrent during constant speed operation	The grid voltage is low	Check input power supply
		Load become mutational or abnormal	Check load or reduce load mutation
		The power of frequency converter is small	Use a frequency converter with a large power level
Er04	Overvoltage during acceleration	Abnormal input voltage	Check input power supply
		Restart the rotating motor	Set to start after DC braking

Er05	Overvoltage during deceleration	Deceleration time is too short	Increase deceleration time
		Abnormal input voltage	Check input power supply
Er06	Overvoltage during constant speed operation	Abnormal input voltage	Check input power supply
Er07	Overvoltage during downtime	Abnormal input voltage	Check voltage of power supply
Er08	Reservation	-	-
Er09	Heat sink overheating	Ambient temperature is too high	Reduce the ambient temperature
		Fan is broken	Replace the fan
		Airduct is blocked	Dredge the airduct
Er10	Frequency converter overload	Improper setting of V/F curve or torque lift	Adjust the V/F curve or the amount of torque lift
		Grid voltage is too low	Check the grid voltage
		Acceleration time is too short	Increase acceleration time
		Motor overload	Use a frequency converter with a large power level
Er11	Motor overload	Improper setting of V/F curve or torque lift	Adjust the V/F curve or the amount of torque lift
		Grid voltage is too low	Check grid voltage
		Motor stalled or the mutation of load is too large	Check the load
		The coefficient of motor overload protection setting is incorrect	Set the coefficient of motor overload protection correctly
Er12	External device fault	External device fault input terminal is closed	Disconnect the external device fault input terminal and clear the fault (Pay attention to checking the cause)

Er13	Current detection fault	Current sampling circuit fault	Ask the manufacturer for service
		Auxiliary power supply fault	
Er14	EEPROM read-write error	EEPROM fault	Ask the manufacturer for service

Communication protocol (All of the following data are hexadecimal)

1.RTU mode and format

When the controller is communicating on the Modbus bus in RTU mode, each 8-bit byte in the message is divided into two 4-digit hexadecimal characters. The main advantage of this mode is the density of the transmitted characters is larger than ASCII mode at the same baud rate, and each message must be transmitted continuously.

(1) Format of each byte in RTU mode

Coding system: 8-bit binary, hex 0-9, A-F.

Data bits: 1 start bit, 8 data bits (low bit first), stop bit occupies 1 bit, parity check bit can be selected. (Refer to RTU data frame bit sequence diagram)

Error check area: Cyclic Redundancy Check (CRC)

(2) RTU data frame bit sequence diagram

With parity check

Start	1	2	3	4	5	6	7	8	Par	Stop

Without parity check

Start	1	2	3	4	5	6	7	8	Stop

2.Read-write function code instruction：

Function Code	Function Instruction
03	Read the register
06	Write the register

3.Parameter instruction of the communication protocol：

Function Instruction	Address Definition	Instruction of data meaning	R/W
Communication control command	2000H	0001H：Shut down 0012H：Run forward 0013H：Forward inching 0022H：Run reverse 0023H：Reverse inching	W
Communication setting frequency address	2001H	The communication setting frequency range is -10000 to 10000. Note: The communication setting frequency is the percentage relative to the maximum frequency, which ranges from -100.00% to 100.00%)	W
Communication control command	2002H	0001H：External fault input	W
		0002H：Fault reset	
Read run/stop parameter description	2102H	Set frequency (two decimal places)	R
	2103H	Output frequency (two decimal places)	R
	2104H	Output current (one decimal place)	R

	2105H	Bus voltage (one decimal place)	R
	2106H	Output voltage (one decimal place)	R
	210DH	Inverter temperature (one decimal place)	R
	210EH	PID feedback value (two decimal places)	R
	210FH	PID set value (two decimal places)	R
Read the fault code instruction	2101H	Bit0：Run Bit1：Shut down Bit2：Inching Bit3：Forward Bit4：Reverse Bit5～Bit5~Bit7: Reserve Bit8: Communication given Bit9: Analog signal input Bit10: Communication running command channel Bit11: Parameter lock Bit12: Running Bit13: Command of having inching Bit14~Bit15: Reserve	R
Read the fault code instruction	2101H	00: No abnormality 01: Module fault 02: Overvoltage 03: Temperature fault 04: Frequency converter overload 05: Motor overload 06: External fault 07~09: Reserve 10: Overcurrent during acceleration 11: Overcurrent during deceleration 12: Overcurrent during constant speed 13: Reserve 14: Undervoltage	R

4. 03 read function mode：

Inquiry information frame format (Send frame):

Address	01H
Function	03H
Starting data address	21H
	02H
Data(2Byte)	00H
	02H
CRC CHK Low	6FH
CRC CHK High	F7H

Analysis of this paragraph of data：

01H is the address of frequency converter
03H is the reading function code
2102H is the initial address
0002H is the number of read address, that is, 2102H and 2103H
F76FH is the 16-bit CRC checking code

Response information frame format (Return frame):

Address	01H
Function	03H
DataNum*2	04H
Data1[2Byte]	17H
	70H
Data2[2Byte]	00H
	00H
CRC CHK Low	FEH
CRC CHK High	5CH

Analysis of this paragraph of data:

01H is the address of frequency converter
03H is the reading function code
04H is the product of the read item times 2
1770H is the data of read 2102H (set frequency)
0000H is the data of read 2103H (output frequency)
5CFEH is a 16-bit CRC checking code

5. 06 read function mode

Inquiry information frame format (Send frame):

Address	01H
Function	06H
Starting data address	20H
	00H
Data(2Byte)	00H
	01H
CRC CHK Low	43H
CRC CHK High	CAH

Analysis of this paragraph of data:

01H	is the address of frequency converter
06H	is the writing function code
2000H	is the address of control command
0001H	is the stop command
43CAH	is a 16-bit CRC checking code

Response information frame format (Return frame):

Address	01H
Function	06H
Starting data address	20H
	00H
Number of Data (Byte)	00H
	01H
CRC CHK Low	43H
CRC CHK High	CAH

Analysis of this paragraph of data: If the settings are correct, return the same input data.