Canroon

CV800 Series Multi - Function Vector Control Inverter

1. Technical Index and Specification

Input	Rated Voltage, Frequency	3-phase (4T) 380V; 47 ~ 63Hz 1-phase (2S) 220V; 47 ~ 63Hz	
	Allowed Voltage Range	3-phase (4T) 320V ~ 480V 1-phase (2S) 160V ~ 260V	
Output	Voltage	4T: 0 ~ 480V 2S: 0 ~ 260V	
	Frequency	0 ~ 999.9Hz	
	Overload Capacity	10% for long-term 150% for 1 min 180% for 5s	
Control Mode		V/F Control / Advanced V/F control / Simple vector control / Advanced vector control / Torque control	
Control Character	Frequency Setting Resolution	Analog Input	0.1% of maximum output frequency
		Digital Setting	0.1Hz
	Frequency Precision	Analog Input	Within 0.2% of maximum output frequency
		Digital Setting	Within 0.01% of set output frequency
	V/F Control	V/F Curve (voltage frequency character)	Reference frequency setting 5 ~ 600 Hz, multipoint V/F curve setting, or fixed curve of constant torque, low decreasing torque 1, low decreasing torque 2, square torque
		Torque Compensation	Manual setting: 0.0 ~ 30% of rated output
			Automatic lifting: automatically determine the lifting torque based on the output current combined with the motor parameters
		Automatic Current-limiting and Voltage-limiting	During acceleration, deceleration or steady running, detect automatically the current and voltage of motor stator, and control it within bounds based on unique algorithm, minimize fault-trip chance
	Senseless Vector Control	Voltage Frequency Character	Adjust pressure/frequency ratio according to motor parameter and unique algorithm
		Torque Character	Starting torque
			100% rated torque at 5.0 Hz (V/F Control)
			150% rated torque at 1.5 Hz (simple vector control)
		Current and Voltage Restrain	Current closed-loop control, free from current impact, perfect restrain function of overcurrent and overvoltage
	Undervoltage Restrain during Running		Specially for users with a low or unsteady voltage power grid: even lower than the allowable voltage range, the system can maintain the longest possible operating time based on its unique algorithm and residual energy allocation strategy
Typical Function	Multi-velocity and Traverse Operation		7-segment programmable multi-velocity control, multiple operating modes are optional
	PID Control		Built-in PID controller (able to preset frequency). Standard configuration RS485 communication function, multiple communication protocol for choice, synchronizing control function.
	RS485 Communication		
	Frequency Setting	Analog Input	Direct voltage 0~10V, direct current 0~20mA (optional up limit and lower limit)
		Digital Output	Operation panel setting, RS485 port setting, UP/DW terminal control, or combined with analog input
	Output Signal	Digital Output	1 channel OC output and one channel relay output (TA, TB, TC), up to 14 choices
		Analog Input	1 channel analog signal output, output ranging within 0 ~ 20mA or 0 ~ 10V with flexibly setting, achievable outputof physical quantities like set frequency, output frequency
	Automatic Steady-voltage Operation		Dynamic steady state, static steady state, and unsteady voltage for choices to obtain the steadiest operation
	Acceleration and Deceleration Time Setting		0.1S ~ 999.9min continuous setting
	Brake	Dynamic Braking	Dynamic braking initial voltage, backlash voltage and dynamic braking continuous adjustable
		DC Braking	Halt DC braking initial frequency: 0.00 ~ 【F0.05】 upper limit frequency
			Braking time: 0.0 ~ 30.0s; Braking current: 0.0% ~ 50.0% of rated current
	Low Noise Running		Carrier frequency 1.0kHz~16.0kHz continuous adjustable, minimize motor noise
	Counter		A built-in counter, facilitate system integration
	Operation Function		Upper limit and lower limit frequency setting, frequency hopping operation, reversal running restraint, slip frequency compensation, RS485 communication, frequency control of progressive increase and decrease, failure recovery automatically, etc.
Display	Operation Panel Display	Running State	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, PID setting, feedback, analog input and output.
		Alarm	The latest 1 faults record; running parameters record when the latest fault tripping happens including output frequency, set frequency, output current, output voltage, DC voltage and module temperature etc 6 running parameters record.
Protective Function			Overcurrent, overvoltage, undervoltage, module fault, electric thermal relay, overheat, short circuit, default phase of input and output, motor parameter adjustment abnormality, internal memory fault, etc.
Environment	Ambient Temperature		-10°C ~ +40°C (please run the VFD in derated capacity when ambient temperature is 40°C ~ 50°C)
	Ambient Humidity		5% ~ 95%RH, without condensing drops
	Surroundings		Indoors (without direct sunlight, corrosive or flammable gas, oil fog and dust)
	Altitude		Running in derated capacity above 1000m, derate 10% for every 1000m rise.
Structure	Protection Level		IP20
	Cooling Method		Air cooling with fan control
Installation Method			Wall-hanging type

2. Installation and wiring

2.1 Installation Precautions

DANGER

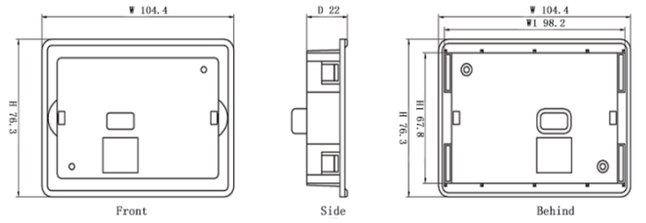
1. **Ensure the power has been cut off before wiring.**
   Electric chock and fire hazard.
2. **Ask electric engineering professionals to conduct wiring.**
   Electric chock and fire hazard.
3. **Earth terminals must be reliable grounded.**
   (380V class: especially the third grounding)
   Electric shock and fire hazard.
4. **Check if its action is effective after emergency brake terminal is connected.**
   Injury risk (wiring responsibility should be beard by users).
5. **Do not touch output terminals directly. The output terminal is connected directly to motor. There should be no short circuit between output terminals.**
   Electric shock and short circuit hazard.
6. **Install the terminal cover before power on, and ensure power off when dismantling the terminal cover.**
   Electric shock hazard.
7. **Conduct check and maintenance after 5~8 minutes after power off when internal residual electricity is discharged completely.**
   Hazard of residual voltage in electrolytic capacitor.
8. **Non-professional technicians, please do not carry out inspection and maintenance work.**
   There is a danger of electric shock.

CAUTION

1. **Check if the voltage of power inlet wire agrees with rated input voltage of VFD.**
   Injury and fire hazard.
2. **Connect brake resistor or brake unit according to wiring diagram.**
   Fire hazard.
3. **Choose screw driver and wrench with specified torque to fasten terminals.**
   Fire hazard.
4. **Do not connect the power input wire to output U, V, W terminals.**
   It will cause internal damage to VFD if load the voltage on output terminals.
5. **Do not dismantle the front panel cover, only the terminal cover needs to be dismantled when wiring.**
   It may cause internal damage to VFD.

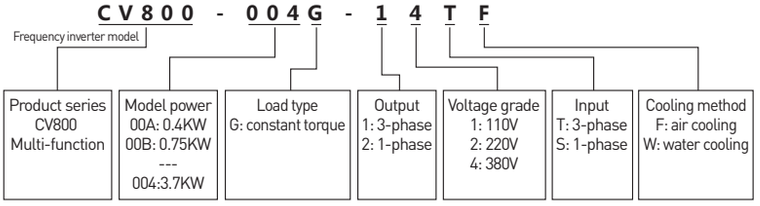
2.2 Outline

a. Appearance and Dimension of Keypad



Dimensions		Hole Size		Thickness
W	H	W1	H1	D
104.4	76.3	98.2	67.8	22

b. Inverter model description:

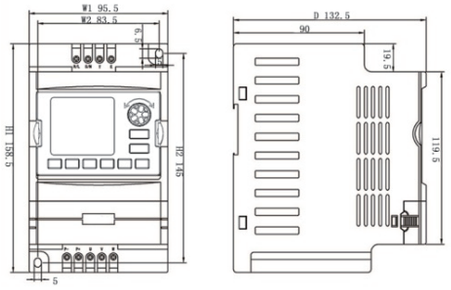


c. VFD Series Type:

Voltage Class	Specification Model	Rated Power (KW)	Rated Output Current (A)
220V 1-phase	CV800-00AG-12SF	0.4	2.4
220V 1-phase	CV800-00BG-12SF	0.75	4.5
220V 1-phase	CV800-001G-12SF	1.5	7
220V 1-phase	CV800-002G-12SF	2.2	10
380V 3-phase	CV800-00AG-14TF	0.4	1.2
380V 3-phase	CV800-00BG-14TF	0.75	2.5
380V 3-phase	CV800-001G-14TF	1.5	3.7
380V 3-phase	CV800-002G-14TF	2.2	5
380V 3-phase	CV800-004G-14TF	3.7	9
380V 3-phase	CV800-005G-14TF	5.5	13
380V 3-phase	CV800-007G-14TF	7.5	17
380V 3-phase	CV800-011G-14TF	11	25

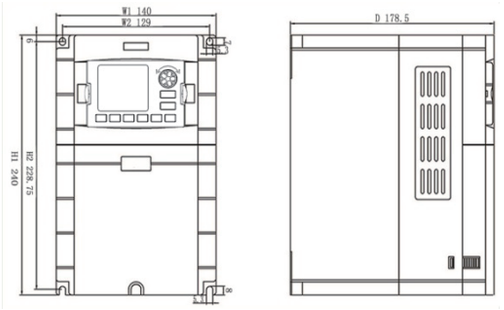
d. Overall dimensions

①. 0.4kw-3.7kw



Specification model	Dimensions (mm)			Installation size (mm)			Package dimensions (mm)			Net weight (kg)
	W1	H1	D	W2	H2	Φ	L	M	H	
CV800-00AG-12SF	95.5	158.5	132.5	83.5	145	5	195	132	172	1.25
CV800-00BG-12SF										
CV800-001G-12SF										
CV800-002G-12SF										
CV800-00AG-14TF										
CV800-00BG-14TF										
CV800-001G-14TF										
CV800-002G-14TF										
CV800-004G-14TF										

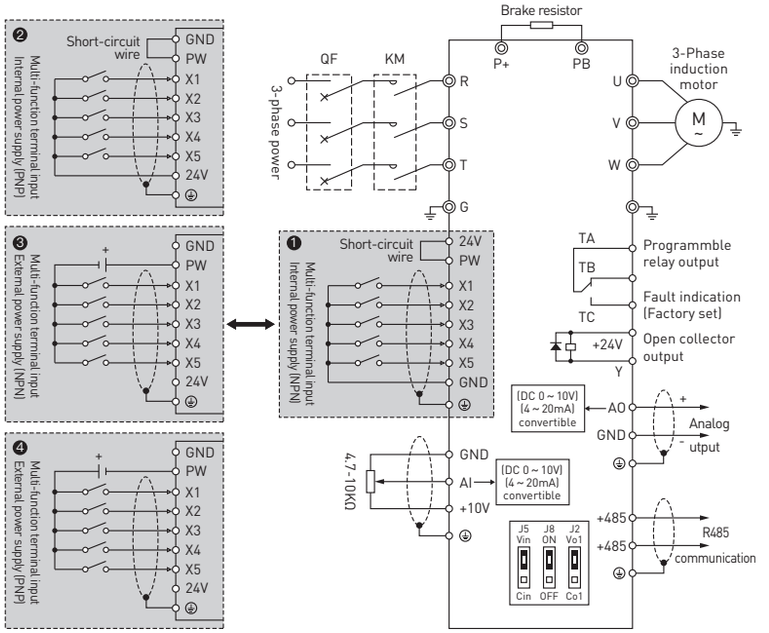
②. 5.5kw-11kw



Specification model	Dimensions (mm)			Installation size (mm)			Package dimensions (mm)			Net weight (kg)
	W1	H1	D	W2	H2	φ	L	M	H	
CV800-005G-14TF	140	240	178.5	129	228.75	5.3	300	210	250	2.2
CV800-007G-14TF										
CV800-011G-14TF										

2.3 Basic Running Wiring

The wiring parts of VFD include major loop and control loop. Open the cover of I/O terminals, users can see the major loop terminal and control loop terminal, and must conduct the wiring according to the following diagram. The multi-function terminal input has 4 wiring methods: 2 NPN and 2 PNP.



2.4 Wiring Notices

(1) Cut off the input power of VFD while dismantling and changing the motor.
(2) Switching of motor or work frequency power supply should only be conducted when the VFD stops output.
(3) To reduce the effect of EMI (electromagnetic interference), add a surge absorber when electromagnetic connector and relay are close to VFD.
(4) Do not connect AC input power to output terminal U, V, W of VFD.
(5) Add an isolating device to the external control line or use shield line.
(6) Input order signal line should be wired separately with shielding, and away from major loop wiring.
(7) When carrier frequency is less than 4kHz, keep the distance between VFD and motor within 50m; when carrier frequency exceeds 4kHz, make an appropriate reduction of the distance, and better lay the wire in metal tube.
(8) When adding peripherals (filters, reactors, etc.) to the VFD, check the ground resistance with 1000V tramegger and ensure the value is above 4 MΩ.
(9) Do not add phase advance capacitor or RC snubber to the U, V, W terminal of VFD.
(10) If the VFD starts frequently, do not cut off the power, use the COM/RUN of control terminal to conduct start and stop so as not to damage the rectifier bridge.
(11) The earth terminal must be grounded reliably (grounding impedance should be under 10 Ω) to avoid accidents, or there might be electric leakage.
(12) Choose the wire diameter according to national electrical code while conducting major loop wiring.

3. Communication Protocol

3.1 RTU Mode and Format

When controller communicates via Modbus in RTU mode, each byte is divided into 2 hexadecimal characters of 4 bits. The main advantage of this mode is that it can transfer characters with higher density compared with ASCII mode given the condition of the same baud rate, and each information must be transported continuously.

(1) each byte format in RTU mode
Encoding system: 8 bits binary, hexadecimal 0-9, A-F.
Data bits: 1 bit of start bit, 8 bits of data (send from the lower bit), 1 bit of stop bit, optional parity check bit (refer to bit sequence of RTU data frame)
Error check zone: cyclic redundancy check (CRC).

(2) Bit sequence of RTU data frame

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

3.2 Read & write Function Description :

Function Code	Function Description
03	Read registers
06	Write register

3.3 Register Address:

Register Function	Address
Control command input	2000H
Monitoring parameter reading (d-00~d-30)	1000H~001EH
MODBUS Frequency setting	2001H
User parameter setting (F0.00~F8.07)	0000H~0807H
Manufacturer parameter setting (F9.00~F9.10)	0900H~090AH

3.4 Description Of The Parameter Address Of The Communication Protocol:

Function Description	Address Definition	Data Meaning Description	R/W
Communication control command	2000H	0001H: Downtime	W
		0012H: Forward running	W
		0013H: Forward jog operation	W
		0022H: Reverse run	W
		0023H: Reverse jog operation	W
Communication setting frequency address	2001H	The communication setting frequency range is -10000 to 10000. Note: The communication set frequency is a 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	W
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
	2107H	Analog input AI (Two decimal places)	R
	2108H	Reserve	R
	2109H	Current count value	R
	210AH	Motor speed	R
	210BH	Analog output AO (Two decimal places)	R
	210CH	Reserve	R
	210DH	Inverter temperature (one decimal place)	R
	210EH	PID feedback value (two decimal places)	R
	210FH	PID setting value (two decimal places)	R
	2110H	Reserve	R
	2111H	Reserve	R
	2112H	Current fault	R
	2113H	Current timing value	R
	2114H	Input terminal status	R
	2115H	Output terminal status	R
	2116H	BIT0: Run/Downtime BIT1: Forward/Reverse BIT2: Jog BIT3: DC brake BIT4: Reserve BIT5: Overvoltage limit BIT6: Constant speed frequency reduction BIT7: Overcurrent limit BIT8~9: 00-Zero speed/01-Speed up/10-slow down/11-Uniform speed BIT10: Overload pre-alarm BIT11: Reserve BIT12~13 Run command channel: 00-panel/01-terminal/10-communication BIT14~15 Bus voltage status: 00-normal/01-Low voltage protection/10-Over voltage protection	R

Read run/stop parameter description	2101H	Bit0: Run Bit1: Downtime Bit2: Jog Bit3: Forward Bit4: Reverse Bit5~Bit7: Reserved Bit8: Communication given Bit9: Analog signal input Bit10: Communication running command channel Bit11: Parameter lock Bit12: running Bit13: Jog command Bit14~Bit15: Reserved	R
Read the fault code description	2100H	00: No abnormality 01: Module failure 02: Over-voltage 03: Temperature failure 04: Inverter overload 05: Motor overload 06: External fault 07~09: Reserved 10: Overcurrent in acceleration 11: Overcurrent in deceleration 12: Overcurrent in constant speed 13: Reserved 14: Undervoltage 15: Reserve 16: RS485 Communication failure 17: Burst tube failure 18: Reserve 19: Dual CPU communication failure 20: Reserve 21: Reserve 22: Current detection failure 23: Reserve 24: Reserve 25: Output phase loss	R

3.5 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 segment data:

01H is the address of the driver
03H read function code
2102H is start address
0002H read the number of addresses, and 2102H and 2103H
F76FH is 16 bits of CRC check 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 segment data:

01H is the address of the driver
03H read function code
04H is the product of (read item)*2
1770H read the data of 2102H (Setting frequency)
0000H read the data of 2103H(Output frequency)
5CFEH is 16 bits of CRC check code

3.6 06H Write 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 segment data:

01H is the address of the driver
06H write function code
2000H is control command address
0001H is stop command
43CAH is 16 bits of CRC check 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 segment data:

If set right, return the same input data

4. Abnormal Phenomena Solution

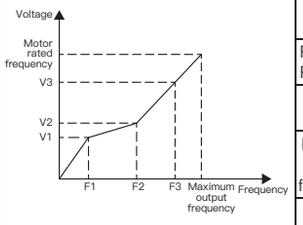
During the driver operation, the common abnormal phenomena and solving actions are as showed in following table.

Phenomena		Possible Reasons of Fault and Actions to Take
Motor not running	LED no display	Check whether there is power failure, or phase loss of input power, check if the power line is connected correctly.
	LED no display, but the internal charging indicator is on	Check if there is problems with wiring or socket related to keypad. Measure the voltage of internal control source to check if the switching power supply is functioning well. If not, check its inlet wire, start oscillation and stabilivolt to see if they works well.
	Motor droning	The motor load is too much. Reduce the load.
	No abnormal phenomena	Check if it is in trip status or hasn't reset after tripping, check whether it is in restart status after power down, whether the keypad is reset, whether it is in program running status, multi-speed operation status, some specific operation status or non-operation status. Try recovering factory set.
		Check whether the running command is sent.
		Check whether the operation frequency is set at 0.
The motor can not Acc / Dec successfully		Improper setting of Acc/Dec time. Increase the value of Acc/Dec time.
		The current limit is set too low. Increase the value.
		Over-voltage protection action during decelerating. Increase the decelerating time.
		Improper setting of carrier frequency, too much load may cause oscillation.
		The load is too heavy, and the torque is not enough. Increase torque boost value in V/F mode. If not working, switch to auto torque boost mode, and the motor parameters should be in consistent with the actual value. If still not working, switch to flux vector control mode, and check the motor parameters and actual values to see if they are matched, meanwhile tune the motor parameters.
		The motor power does not match the inverter power. Please set the motor parameters to actual values.
		One driver for several motor. Please change the torque boost mode to manual mode.
The motor can rotate, but speed regulation can't be realized.		Improper setting of upper and lower limit of frequency.
		The frequency is set too low, or the frequency gain is set too low.
		Check whether the speed adjustment mode is in consistent with frequency setting.
		Check whether the load is too heavy, whether it is in overvoltage stalled state or overcurrent limiting state.
Speed changing during motor running		Frequent fluctuation of load. Decrease the changing.
		Serious mismatching of rated value of the driver and motor. Set the motor parameters as actual value.
		Frequency setting potentiometer is in bad connect or the frequency setting signal is in fluctuation. Switch to digit setting mode or increase filter time constant of analog input signal.
The rotation direction of motor is in reverse		Adjust phase sequence of output terminal U, V, W.
		Set the running direction as reverse (P0.21=1).
		Caused by phase loss of output. Check the motor wiring immediately.

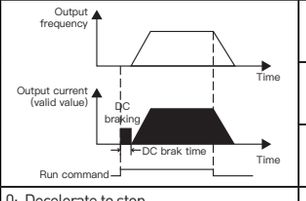
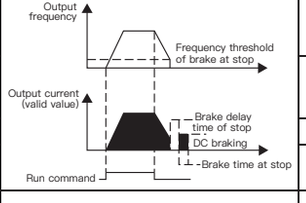
5. Function Parameter Table

NOTE:
○ — — Modifiable parameter under any condition
× — — Not modifiable parameter under run status
◆ — — The actual detected parameter, not modifiable
◇ — — Factory parameter, only modifiable for factory, not allowed for users modifying

F0 Group - Basic Run Parameters					
Function Code	Name	Content	Set Range	Factory Default	Modification
F0.00	VFD power specification	VFD power specification	0.10 ~ 99.99KW	Model setting	◆
F0.01	Master controller software version	Master controller software version	1.00 ~ 99.99	1.00	◆
F0.02	Run command channel selection	Run command channel selection	0~2	0	○
F0.03	Frequency selection	0: Panel potentiometer 1: Digital setting 1, operation panel ▲, ▼ keys adjustment 2: Digital reference 2, terminal UP/DOWN adjustment 3: AI analog reference (0~10V/0~20mA) 4: Combination given 5: Reserve 6: Communication given 7: Reserve 8: MPPT on (photovoltaic water pump) Note: Extended hardware is needed to support;select combination timing, combination selection method is selected in F1.15.	0 ~ 8	0	○
F0.04	Maximum output frequency	The maximum output frequency is the highest frequency that the inverter can output, and it is the reference for acceleration and deceleration setting.	MAX {50.0, 【F0.05】} ~ 999.9Hz	50.0Hz	×
F0.05	Maximum frequency	The operating frequency cannot exceed this frequency	MAX{0.1, 【F0.06】} ~ 【F0.04】	50.0Hz	×
F0.06	Lower limit frequency	The operating frequency cannot be lower than this frequency	0.0 ~ Maximum frequency	0.0Hz	×
F0.07	Reach the lower limit of frequency processing	0: Zero running 1: Lower frequency operation 2: Down time	0 ~ 2	0	×
F0.08	Operating frequency digital setting	The set value is the initial value of the frequency digital setting	0.0 ~ Maximum frequency	10.0Hz	○
F0.09	Digital frequency control	LED bit: Power-off storage 0: Storage 1: Do not store LED tens: Stop and keep 0: Keep 1: Do not keep LED hundred position: UP / DOWN negative frequency adjustment 0: Invalid 1: Effective LED thousands: PID, PLC frequency superposition selection 0: Invalid 1: F0.03+PID 2: F0.03+PLC	0000 ~ 2111	0000	○
F0.10	Acceleration time	The time required for the inverter to accelerate from zero frequency to the maximum output frequency	0.1 ~ 999.9s 0.4 ~ 4.0KW 7.5s 5.5 ~ 7.5KW 15.0s	Model setting	○
F0.11	Deceleration time	The time of vfd decelerates from maximum output frequency to zero frequency			
F0.12	Running direction setting	0: Forward 1: Reverse 2: Ban reversal	0 ~ 2	0	○

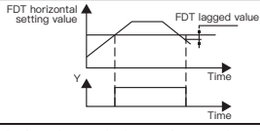
F0.13	V/F curve setting	0: Linear curve 1: Square curve 2: Multi-point V/F curve	0 ~ 2	0	×
F0.14	Torque boost	Manual torque boost, this value is set as a percentage of motor rated voltage.	0.0 ~ 30%	Model setting	○
F0.15	Torque boost cut-off frequency	This setting is the boost cut-off frequency point when the manual torque is boosted.	0.0 ~ 50.0Hz	15.0Hz	×
F0.16	Carrier wave frequency setting	Raise the carrier frequency properly when there is demand for quiet running. Meanwhile, raising the carrier frequency will increase heat production and electromagnetic interference from the VFD.	2.0 ~ 16.0KHz 0.4 ~ 3.0KW 4.0KHz 4.0 ~ 7.5KW 3.0KHz	Model setting	×
F0.17	V/F frequency value F1		0.1 ~ frequency value F2	12.5Hz	×
F0.18	V/F Voltage value V1		0.0 ~ Voltage value 2	25.0%	×
F0.19	V/F frequency value F2		Frequency value F1 ~ Frequency value F3	25.0Hz	×
F0.20	V/F Voltage value V2		Voltage value V1 ~ Voltage value V3	50.0%	×
F0.21	V/F frequency value F3		Frequency value F2 ~ motor rated frequency【F4.03】	37.5Hz	×
F0.22	V/F Voltage value V3		Voltage value V2 ~ 100.0%*Uoute (motor rated voltage【F4.00】)	75.0%	×
F0.23	User password	Set any non-zero number, wait for 3 minutes or power down to take effect.	0 ~ 9999	0	○
F0.24	Frequency display resolution selection	0: 0.1Hz 1: 1Hz Note: To set this parameter, be sure to check the maximum output frequency (F0.04), frequency upper limit (F0.05), motor rated frequency (F4.03) and other frequency-related parameters.	0 ~ 1	0	○
F0.25	Motor control mode	0: V/F Control 1: Advanced V/F control 2: Simple vector control 3: Advanced vector control 4: Torque control	0 ~ 4	0	×
F0.26	Function macro definition (temporarily reserved)	0: General mode 1: Single pump constant pressure water supply mode 2: One tow two constant pressure water supply mode 3: Knapsack intelligent small water pump mode 4: Engraving machine mode 5: Security scenario application mode 6: High torque start scenario application mode 7: Fast start-stop scenario application mode 8: Automatic energy-saving scenario application mode 9: Custom mode (please refer to custom macro parameter group, maximum support 16 parameter application combinations) 10: Reserve	0 ~ 10	0	×

F1 Group - Auxiliary Operating Parameters

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F1.00	Start mode	LED one's place: Start mode 0: Starting from the starting frequency 1: First DC braking and then starting from the starting frequency. 2: Reserved LED ten's place: Power outage or abnormal restart mode 0: Invalid 1: Starting from the starting frequency LED hundred: Reserved LED thousand's place: Reserved	0000 ~ 0012	00	×
F1.01	Start frequency		0.0 ~ 50.0Hz	1.0Hz	○
F1.02	Starting DC braking voltage		0.0 ~ 50.0% × Motor rated voltage	0.0%	○
F1.03	DC brake time at startup		0.0 ~ 30.0s	0.0s	○
F1.04	Stop mode	0: Decelerate to stop 1: Coast to stop	0 ~ 1	0	×
F1.05	Frequency threshold of DC brake at stop		0.0 ~ Upper limited freq	0.0Hz	○
F1.06	DC brake voltage at stop		0.0 ~ 50.0% × Motor rated voltage	0.0%	○
F1.07	DC brake time at stop		0.0 ~ 30.0s	0.0s	×
F1.08	DC brake delay time at stop		0.00 ~ 99.99s	0.00s	×
F1.09	Frequency setting of forward jog operation	Set frequency of forward jogging	0.0 ~ 50.0Hz	10.0Hz	○
F1.10	Frequency setting of reverse jog operation				
F1.11	Jog Acc time	Setting jog Acc time or Dec time	0.1 ~ 999.9s 0.4 ~ 4.0KW 10.0s 5.5 ~ 7.5KW 15.0s	Model setting	○
F1.12	Jog Dec time				
F1.13	Hopping freq	Setting hopping freq and hopping range to keep the VFD away from resonance frequency of mechanical	0.0 ~ Upper frequency	0.0Hz	○
F1.14	Hopping range		0.0 ~ 10.0Hz	0.0Hz	○
F1.15	Frequency combinational setting mode	0: Potentiometer + digital frequency 1 1: Potentiometer + digital frequency 2 2: Potentiometer + AI 3: Digital freq1 + AI 4: Digital freq2 + AI 5: Digital freq1 + multistage speed 6: Digital freq2 + multistage speed 7: Potentiometer + multistage speed 8: AI + PLC (same direction superposition) 9: Reserve	0 ~ 9	0	×
F1.16	Programmable operation control (simple PLC running)	LED unit: PLC enable control 0: Invalid 1: Valid LED tens: Choose running mode 0: Single cycle 1: Continuous cycle 2: Maintain value of the last stage after single cycle LED hundred position: Start mode 0: Start from the first stage 1: Continue from the stage where the driver stops 2: Start from the frequency where it stops (fault) LED Thousand's place: Power-down storage options 0: No storage 1: Storage	0000 ~ 1221	0000	×
F1.17	Multi-speed freq. 1	Set multi-speed freq. 1	Upper limit	5.0Hz	○
F1.18	Multi-speed freq. 2	Set multi-speed freq. 2	Upper limit	10.0Hz	○
F1.19	Multi-speed freq. 3	Set multi-speed freq. 3	Upper limit	15.0Hz	○
F1.20	Multi-speed freq. 4	Set multi-speed freq. 4	Upper limit	20.0Hz	○
F1.21	Multi-speed freq. 5	Set multi-speed freq. 5	Upper limit	25.0Hz	○
F1.22	Multi-speed freq. 6	Set multi-speed freq. 6	Upper limit	37.5Hz	○
F1.23	Multi-speed freq. 7	Set multi-speed freq. 7	Upper limit	50.0Hz	○
F1.24	Run time of MS stage 1	Set run time of MS stage 1 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.25	Run time of MS stage 2	Set run time of MS stage 2 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.26	Run time of MS stage 3	Set run time of MS stage 3 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.27	Run time of MS stage 4	Set run time of MS stage 4 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.28	Run time of MS stage 5	Set run time of MS stage 5 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.29	Run time of MS stage 6	Set run time of MS stage 6 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.30	Run time of MS stage 7	Set run time of MS stage 7 (unit is depend on【F1.35】, default is second	0.0 ~ 999.9s	10.0s	○
F1.31	Acc/Dec time of MS stage 1	LED one's place: Acc/Dec time of MS stage 1 0 ~ 1 LED tens' place: Acc/Dec time of MS stage 2 0 ~ 1 LED hundred's place: Acc/Dec time of MS stage3 0 ~ 1 LED thousand's place: Acc/Dec time of MS stage4 0 ~ 1	0000 ~ 1111	0000	×
F1.32	Acc/Dec time of MS stage 2	LED one's place: Acc/Dec time of MS stage 5 0 ~ 1 LED tens' place: Acc/Dec time of MS stage 6 0 ~ 1 LED hundred's place: Acc/Dec time of MS stage 7 0 ~ 1 LED thousand's place: save	000 ~ 111	000	×
F1.33	Accelerate time 2	Set Acc/Dec time 2	0.1 ~ 999.9s 0.4 ~ 4.0KW 10.0s 5.5 ~ 7.5KW 15.0s	10.0s	○
F1.34	Decelerate time 2				
F1.35	Time unit	LED one's place: Process of PID time unit LED ten's place: Simple PLC time unit LED hundred's place: Ordinary Acc/Dec time unit LED thousand's place: Save 0: The unit is 1S 1: The unit is 1Min 1: The unit is 0.1S	000 ~ 211	000	×
F1.36	Forward and reverse dead time	The transition time for the inverter to wait at the output zero frequency during the transition from the forward operation to the reverse operation, or from the reverse operation to the forward operation.	0.0 ~ 999.9s	0.0	○

F2 Group - Analog and Quantity Input and Output Parameters

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F2.00	AI input lower limit voltage	Set AI upper and lower limit voltage	0.00 ~【F2.01】	0.00V	○
F2.01	AI input upper limit voltage		【F2.01】~ 10.00V	10.00V	○
F2.02	AI lower limit setting	Set AI upper/lower limit, the setting is related to upper frequency【F0.05】percentage	-100.0% ~ 100.0%	0.0%	○
F2.03	AI Upper limit voltage setting			100.0%	○
F2.04 F2.07	Reserve	—	—	0	◆
F2.08	Time of analog input signal filter	The parameter is used to filter of the input signal of AI and potentiometer to eliminate the influence of interference	0.1 ~ 5.0s	0.1s	○
F2.09	Error limit of analog input	When analog input signal shows frequent fluctuation around the set point, set F2.09 to restrain the frequency fluctuation caused by this fluctuation.	0.00 ~ 0.10V	0.00V	○

F2.10	AO function analog output terminal	0: Output frequency 1: Output current 2: Speed of motor 3: Output voltage 4: AI 5: Reserved	0 ~ 5	0	○
F2.11	AO output lower limit	Set AO output upper/lower limit	0.00 ~ 10.00V/ 0.00 ~ 20.00mA	0.00V	○
F2.12	AO output upper limit			10.00V	○
F2.13	Output terminal X1 function	0: Control terminal idle 1: Forward jog control 2: Reverse jog control 3: Orward control (FWD) 4: Reverse control (REV) 5: Three-wire running control 6: Coast to stop 7: External stop signal input (STOP) 8: External reset signal input (RST) 9: External fault normally-open input 10: Frequency increase (UP) 11: Frequency decrease (DOWN) 13: Multi-speed selection S1 14: Multi-speed selection S2 15: Multi-speed selection S3 16: Run command channel must be terminal 17: The run command channel is forced to be communication 18: Dc brake instruction 19: Frequency switch to AI 20: Frequency switch to digital frquency 1 21: Frequency switch to digital frquency 2 22: Reserve 23: Clear the counter to zero signal 24: Signal to trigger the counter 25: Clear the timer to zero signal 26: Signal to trigger the timer 27: Accelerate/decelerate time selection 28: Swing frequency pause (stop at the current frequency) 29: Swing frequency reset (return to center frequency) 30: External stop/reset signal input (STOP/RST)	0 ~ 30	3	×
F2.14	Output terminal X2 function		0 ~ 30	4	×
F2.15	Output terminal X3 function		0 ~ 30	0	×
F2.16	Output terminal X4 function		0 ~ 30	0	×
F2.17	Output terminal X5 function		0 ~ 30	0	×
F2.18	FWD/REV terminal control mode	0: 2-wire control mode 1 1: 2-wire control mode 2 2: 3-wire control mode 1 3: 3-wire control mode 2 4: 3-wire control mode 3 5: Reserve	0 ~ 5	0	×
F2.19	Terminal function detection when power up	0: Terminal control invalid when power up 1: Terminal control valid when power up	0 ~ 1	0	×
F2.20	R output setting	0: Idle 1: VFD driver ready 2: VFD running 3: VFD zero-speed running 4: Stop for the external fault 5: VFD fault 6: Freq./speed arrival signal (FAR) 7: Freq./speed level detection signal (FDT) 8: Upper limit arrival of output frequency 9: Lower limit arrival of output frequency 10: Pre-alarm of overload 11: Timer overflow signal 12: Counter detection signal 13: Counter reset signal 14: Auxiliary motor 15: Forward 16: Reverse 17: Output indicator signal when the output frequency drops to the speed detection level	0 ~ 17	5	○
F2.21	Y output setting		0 ~ 17	0	○
F2.22	R close delay	The changes of relay state to the delay of the output change	0.0 ~ 255.0s	0.0s	×
F2.23	R off delay				
F2.24	Frequency up to FAR detection range	The output frequency is within the positive and negative detection width of the set frequency, and the terminal outputs a valid signal (low level).	0.0Hz ~ 15.0Hz	5.0Hz	○
F2.25	FDT horizontal setting value		0.0Hz ~ Upper limit frequency rate	10.0Hz	○
F2.26	FDT lagged value		0.0Hz ~ 30.0Hz	1.0Hz	○
F2.27	UP/DOWN terminal modifying speed rate	This function code is used to setting the frequency modifying rate of UP/DOWN terminal, i.e. the changed value of frequency when short-circuit UP/DOWN terminal with COM for one second	0.1Hz ~ 99.9Hz/s	1.0Hz/s	○
F2.28	Input terminal pulse trigger mode setting (X1 ~ X5)	0: Indicates the level trigger mode 1: Indicates the pulse trigger mode Note: X1 ~ X5 correspond to 1H, 2H, 4H, 8H, 10H in hexadecimal order.	0 ~ 1FH	0	○
F2.29	Input terminal effective logic setting (X1 ~ X5)	0: Indicates positive logic, the Mi terminal is connected to the common terminal, and the disconnection is invalid. 1: Indicates the inverse logic, the connection between the Mi terminal and the common terminal is invalid, and the disconnection is effective. Note: X1 ~ X5 correspond to 1H, 2H, 4H, 8H, 10H in hexadecimal order.	0 ~ 1FH	0	○
F2.30	X1 filtering coefficient	Used to set the sensitivity of the input terminal. If the digital input terminal is susceptible to interference and cause malfunction, increase this parameter to increase the anti-interferenceability, but if the setting is too large, the sensitivity of the input terminal will decrease. 1: represents the 2MS scan time unit	0 ~ 9999	5	○
F2.31	X2 filtering coefficient		0 ~ 9999	5	○
F2.32	X3 filtering coefficient		0 ~ 9999	5	○
F2.33	X4 filtering coefficient		0 ~ 9999	5	○
F2.34	X5 filtering coefficient		0 ~ 9999	5	○

F3 Group - PIN Parameters

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F3.00	PID function setting	LED one's place: PID adjustment characteristics 0: Invalid	0000 ~ 2122	1010	×
F3.00	PID function setting	1: Positive effects When feedback signal is larger than PID given, the driver output frequency should be decreased (decrease feedback signal). 2: Negative effects When feedback signal is larger than PID given, the driver output frequency should be increased (decrease feedback signal). LED ten's place: PID given input channel 0: Keyboard potentiometer The PID given quantity is depend on the potentiometer on the operation panel. 1: Digital given The PID given amount is given by the number and is set by function code F3.01. 2: Pressure given (MPa、Kg) By setting F3.01, F3.18 given pressure LED hundred place: PID feedback input channel 0: AI 1: Reserve LED thousand place: PID sleep selection 0: Invalid 1: Ordinary sleep This method needs to set specific parameters such as F3.10 ~ F3.13. 2: Disturbing sleep The parameter setting is the same as when the sleep mode is selected as 0. If the PID feedback value is within the range of the F3.14 set value, the sleep delay time is maintained and the disturbance sleep is entered. When the feedback value is less than the wake threshold (the PID polarity is positive), it will wake up immediately.	0000 ~ 2122	1010	×
F3.01	Setting a quantitative number	Use the operation keyboard to set the given amount of PID control. This function is valid only when the PID reference channel selects the digital reference (F3.00 tens is 1 or 2). If the F3.00 tens place is 2, it is used as the pressure reference, and this parameter is consistent with the unit of F3.18.	0.0 ~ 100.0%	0.0%	○
F3.02	Feedback channel gain	When the feedback channel is inconsistent with the set channel level, this function can be used to adjust the gain of the feedback channel signal.	0.01 ~ 10.00	1.00	○
F3.03	Proportional gain P	The speed of the PID adjustment speed 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. It is required to reduce the proportional gain and increase the integration time. In general, the derivative time is not set.	0.01 ~ 5.00	2.00	○
F3.04	Integral time Ti		0.1 ~ 50.0s	1.0s	○
F3.05	Derivative time Td		0.1 ~ 10.0s	0.0s	○
F3.06	Sampling cycle T	The longer of the cycle, the slower of the response, but the better of the suppress effect to interference signal. Normally no need to set this parameter.	0.1 ~ 10.0s	0.0s	○
F3.07	Error limit	Error limit is the ratio of deviation (feedback and reference) absolute value to reference. PID regulator stops operation when feedback is within this range.	0.0 ~ 20.0%	0.0%	○
F3.08	Closed loop preset freq.	The driver running frequency and time before PID control operates	0.0 ~ upper limit frequency	0.0Hz	○
F3.09	Preset freq. hold time		0.0 ~ 999.9s	0.0s	×
F3.10	Wake-up threshold	If the actual feedback value is greater than the set value, and the frequency output by the inverter reaches the lower limit frequency, the VFD enters the sleep state (ie, zero speed running) after the delay waiting time defined by F3.12; The percentage of the PID setpoint.	0.0 ~ 150.0%	100.0%	○
F3.11	Wake threshold coefficient	If the actual feedback value is less than the set value, the VFD will go out of sleep and start working after the delay waiting time defined by F3.13; this value is the percentage of the PID set value.	0.0 ~ 150.0%	90.0%	○
F3.12	Delay time of sleep	Set delay time of sleep	0.0 ~ 999.9s	100.0s	○
F3.13	Delay time of wake-up	Set delay time of wake-up	0.0 ~ 999.9s	1.0s	○
F3.14	Deviation limit of feedback when entering sleep state compared with set pressure	This function parameter is only valid to the disturbed sleep mode	0.0 ~ 10.0%	0.5%	○
F3.15	Burst detection delay time	Set burst detection delay time	0.0 ~ 130.0s	30.0s	○
F3.16	High pressure detection	When the feedback pressure is greater than or equal to this set value, the explosion alarm "EPA0" is reported after the F3.15 bursting delay, and the explosion alarm "EPA0" is automatically reset when the feedback pressure is less than this set value; the threshold is given The percentage of constant pressure.	0.0 ~ 200.0%	150.0%	○
F3.17	Low pressure detection threshold	When the feedback pressure is less than this set value, the explosion alarm "EPA0" is reported after the delay of F3.15 bursting. When the feedback pressure is greater than or equal to this set value, the explosion alarm "EPA0" is automatically reset; the threshold is given the percentage of constant pressure.	0.0 ~ 200.0%	50.0%	○
F3.18	Sensor range	Set the maximum range of the sensor	0.00 ~ 99.99 (MPa、Kg)	10.00MPa	○

F4 Group - Advance Function Parameter

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F4.00	Motor's rated voltage	Setting of motor parameters	0 ~ 500V: 380V 0 ~ 250V: 220V	Model setting	×
F4.01	Motor's rated current		0.1 ~ 999.9A	Model setting	×
F4.02	Motor's rated speed		0 ~ 9999RPM	Model setting	×
F4.03	Motor's rated freq.		1.0 ~ 999.9Hz	50.0Hz	×

F4.04	Stator resistance of motor	Set stator resistance of asynchronous motor	0.001 ~ 20.000Ω	Model setting	○
F4.05	No-load current of motor	Set no-load current of motor	0.1 ~ 【F4.01】	Model setting	×
F4.06	AVR function	1: Full effective 2: invalid only when decelerating	0 ~ 2	0	×
F4.07	Cooling fan control	0: auto control mode 1: always running when power on	0 ~ 1	0	○
F4.08	Auto reset times	When the fault resets is set to 0, there is no automatic reset function, only manual reset,10 means that the times is not limited, that is, countless times.	0 ~ 10	0	×
F4.09	Auto reset interval	Set the fault auto reset interval	0.5 ~ 25.0s	3.0s	×
F4.10	Initial voltage of dynamic braking	If the internal DC side voltage is higher than the initial voltage of dynamic braking, the internal brake unit will act. If there is brake resistor connected, the pumping voltage energy will be released via the brake resistor to achieve drop of DC voltage.	330 ~ 380/ 660 ~ 800V	350/ 780V	○
F4.11	Action ratio of dynamic braking		10 ~ 100%	100%	○
F4.12	Overmodulation function selection	0: Invalid 1: Valid	0 ~ 1	0	×
F4.13	PWM mode	0: Full frequency seven segment 1: Full frequency five segment 2: Seven segment to five segment 3: Single-phase asynchronous motor mode	0 ~ 3	0	×
F4.14	Slip compensation coefficient	After the asynchronous motor is loaded, the speed will decrease. The use of slip compensation can make the motor speed close to its synchronous speed, so that the motor speed control accuracy is higher. This coefficient is only valid for ordinary V/F and simple vector.	0 ~ 200%	100%	×
F4.15	Slip compensation mode	0: Invalid 1: Low frequency compensation Note: This parameter is only valid for advanced V/F	0 ~ 1	0	×
F4.16	Motor parameter self-learning	0: invalid 1: Static self-learning (START is displayed immediately after startup , after ending display END 1S it goes out	0 ~ 1	0	×
F4.17	Motor rated power	After change the motor rated power F4.17, F4.01, F4.02, F4.04, F4.05, F4.18 ~ F4.20 are automatically updated to the motor default parameters of the corresponding power.	0.0 ~ 2000.0KW	Model setting	○
F4.18	Motor rotor resistance		0.00 ~ 200.00Ω	Model setting	○
F4.19	Motor stator, rotor inductance		0.00 ~ 200.00mH	Model setting	○
F4.20	Motor stator, rotor mutual inductance		0.00 ~ 200.00mH	Model setting	○
F4.21	Speed Ring (ASR1) proportional gain	Function codes F4.21 ~ F4.26 are valid in vector control mode. By setting the proportional gain P and the integral time I, the speed response characteristics of the vector control can be changed.	1 ~ 100	30	×
F4.22	Speed Ring (ASR1) integration time		0.01 ~ 10.00s	0.50	○
F4.23	Switch low frequency		0.0 ~ 10.0Hz	5.0	×
F4.24	Speed Ring (ASR2) proportional gain		1 ~ 100	20	○
F4.25	Speed Ring (ASR2) integration time		0.01 ~ 10.00s	1.00	○
F4.26	Switch high frequency		【F4.23】~ 320.0Hz	10.0	×
F4.27	Vector slip compensation	In the vector control mode, this parameter is used to adjust the speed stability accuracy of the motor. When the motor is overloaded and the speed is low, increase this parameter; otherwise, decrease this parameter.	50% ~ 200%	100	○
F4.28	Speed ring filter time constant	Set the speed ring filter time constant	0.000 ~ 1.000s	0.010	○
F4.29	Reserve	—	—	0	◆
F4.30	Speed ring torque limit	This setting value is a percentage of the rated current of the motor	0.0% ~ 200.0%	150.0	○
F4.31	Torque command selection	0: Keyboard number given 1: AI 2: Reserve	0 ~ 2	0	×
F4.32	Torque digital given	This setting value is a percentage of the rated current of the motor	0.0% ~ 200.0%* Motor rated current	150.0	○
F4.33	Torque control forward maximum frequency	Used to set the maximum forward or reverse operating frequency of the inverter under torque control mode.	0.0 ~ 3200.0Hz	50.0	○
F4.34	Torque control reverse maximum frequency		0.0 ~ 3200.0Hz	50.0	○
F4.35	Torque rise time	Torque rise/fall time defines the time when the torque rises from 0 to the maximum value or falls from the maximum value to 0.	0.00 ~ 1.00s	0.00	○
F4.36	Torque fall time		0.00 ~ 1.00s	0.00	○

F5 Group - Protection Function Parameter

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F5.00	Protection settings	LED one place: motor overload protection selection 0: invalid 1: valid LED ten digits: PID feedback disconnection protection 0: invalid 1: Protect action and free stop LED Hundred place: 485 Communication Failure Processing 0: Protect action and free stop 1: Alarm but maintain the status operation 2: Alarm and stop according to the set mode LED Thousand place: Oscillation suppression option 0: invalid 1: valid	0000 ~ 1211	0001	×
F5.01	Motor overload protection factor	The factor is the percentage of motor rated current to the rated output current of the driver.	30% ~ 110%	100%	×
F5.02	Undervoltage protection level	This function code specifies the lower limit of DC bus voltage when the driver operates normally.	50 ~ 280/ 50 ~ 480V	180/ 360V	×
F5.03	Voltage limit factor in decelerating	This parameter is used to adjust the ability of the inverter to suppress over-voltage during deceleration.	0: close, 1 ~ 255	1	×
F5.04	Overvoltage limit level	The overvoltage limit level defines the operating voltage for overvoltage stall protection.	350 ~ 400/ 660 ~ 850V	375/ 700V	×
F5.05	Current limit factor in accelerating	This parameter is used to adjust the ability of the vfd to suppress overcurrent during acceleration.	0: close, 1 ~ 99	10	×
F5.06	Constant speed current limiting factor	This parameter is used to adjust the ability of the inverter to suppress overcurrent during constant speed.	0: close, 1 ~ 10	0	×
F5.07	Current amplitude limiting	The current limit level defines the current threshold of the automatic current limit action, and its set value is relative to the rated current of the VFD.	50% ~ 200%	160%	×
F5.08	Feedback disconnection detection value	The value is the percentage given by the PID. When the feedback value of the PID continues to be less than the feedback disconnection detection value, the VFD will make the corresponding protection action according to the setting of F5.00. It is invalid when F5.08=0.0%.	0.0 ~ 100.0%	0.0%	×
F5.09	Detection time of feedback disconnection	After voltage feedback disconnection, the duration time before protection action.	0.1 ~ 999.9s	10.0s	×
F5.10	The VFD overload pre-alarm level	The current threshold of the inverter overload pre-alarm action, the set value is relative to the rated current of the inverter.	0 ~ 150%	120%	○
F5.11	Inverter overload pre-alarm delay	The output current of the VFD is continuously longer than the overload pre-alarm level (F5.10), and the delay time between the output overload pre-alarm signals.	0.0 ~ 15.0s	5.0s	×
F5.12	Jog priority enable	0: Invalid 1: When the VFD is running, the jog priority is the highest.	0 ~ 1	0	×
F5.13	Oscillation suppression coefficient	When the motor is oscillating, set F5.00 thousand effective, turn on the oscillation suppression function, and then adjust by setting the oscillation suppression coefficient. Under normal circumstances, the oscillation amplitude is large, and the oscillation suppression coefficient F5.13, F5.14~F5.16 is increased. no need to be set; if it encounters special occasions, it needs to be used together with F5.13~F5.16.	0 ~ 200	30	○
F5.14	Amplitude suppression coefficient		0 ~ 12	5	○
F5.15	Oscillation suppression lower limit frequency		0.0 ~ 【F5.16】	5.0Hz	○
F5.16	Oscillation suppression upper limit frequency		【F5.15】~ 【F0.05】	45.0Hz	○
F5.17	Wave-by-wave current limit selection	LED one's place: Acceleration selection 0: Invalid 1: Valid LED ten's place: Slow down selection 0: Invalid 1: Valid LED Hundred's place: Constant speed selection 0: Invalid 1: Valid LED thousand's place: Dead zone compensation 0: Invalid 1: Valid	000 ~ 111	1011	×
F5.18	Output phase loss protection detection coefficient	When the ratio of the maximum value to the minimum value of the three-phase output current is greater than this coefficient, and the duration exceeds 6 seconds, the inverter reports the output current imbalance fault EPLI; when F5.18=0.00, the output phase loss protection is invalid.	0.00 ~ 20.00	2.00	○

F6 Group - Communication Parameter (Extended hardware is needed to support)

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F6.00	Local address	Set the local address, 0 is the broadcast address.	0 ~ 247	1	×
F6.01	MODBUS communication configuration	LED one's place: Baud rate selection 0: 9600BPS 1: 19200BPS 2: 38400BPS LED ten's place: Data Format 0: No parity 1: Even parity 2: Odd parity LED Hundred's place: Communication Response 0: Normal response 1: Only respond to the slave address 2: Not responding 3: Slave does not respond to the free stop command of the host in broadcast mode LED Thousands: Reserved	0000 ~ 0322	0000	×
F6.02	Communication timeout detect	If the unit does not receive the correct data signal within the time interval defined by this function code, then the unit thinks that the communication has failed, and the inverter 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, no RS485 communication timeout is detected.	0.1 ~ 100.0s	10.0s	×
F6.03	Response delay	This function code defines the intermediate time interval between the end of the data frame reception of the inverter and the response data frame sent by the host computer. If the response time is less than the system processing time, the system processing time shall prevail.	0 ~ 200ms	5ms	×

F6.04	Ratio correlation	This function code is used to set weight coefficient of frequency command received via RS485 when the driver is set as slave. The actual operation frequency is this parameter value multiplied by the command value received via RS485. In jointly control, this function code can set running frequency ratio of multiple VFD.	0.01 ~ 10.00	1.00	○

F7 Group - Supplementary Function Parameter

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F7.00	Counting and timing mode	LED one's place: Count arrival processing 0: Single cycle count, stop output 1: Single cycle count, continue output 2: Loop count, stop output 3: Loop count, continue to output LED ten: Reserved LED Hundred's place: Timing Arrival Processing 0: One-week timing, stop output 1: Single-cycle timing, continue output 2: Cycle timing, stop output 3: Cycle timing, continue output LED Thousand's place: Reserved	000 ~ 303	103	×
F7.01	Counter reset value	Set counter reset value	【F7.02】~ 9999	1	○
F7.02	Counter detection value	Set counter detection value	0 ~【F7.01】	1	○
F7.03	Timing setting	Set timing setting	0 ~ 9999s	0s	○
F7.04 ~ F7.07	Reserve	—	—	0	◆
F7.08	Swing frequency control	0: Prohibit 1: Valid	0 ~ 1	0	×
F7.09	Swing control	0: Fixed swing The swing reference value is the maximum output frequency (F0.04). 1: Variable swing The swing reference value is the given channel frequency	0 ~ 1	0	×
F7.10	Swing frequency stop start mode selection	0: Start according to the state of memory before shutdown 1: Restart	0 ~ 1	0	×
F7.11	Swing frequency amplitude	The swing frequency amplitude is a percentage relative to the maximum output frequency (F0.04).	0.0 ~ 100.0%	0.0%	○
F7.12	Kick frequency	This function code refers to the amplitude of the rapid decrease when the frequency reaches the upper limit frequency of the swing frequency during the swing frequency process. Of course, it also refers to the amplitude of the rapid increase after the frequency reaches the lower limit frequency of the swing frequency. This value is relative to the percentage of the swing frequency amplitude (F7.11). If it is set to 0.0%, there will be no sudden jump frequency.	0.0 ~ 50.0%	0.0%	○
F7.13	Swing frequency rise time	The running time from the lower limit frequency of the swing frequency to the upper limit frequency of the swing frequency.	0.1 ~ 3600.0s	5.0	○
F7.14	Swing frequency fall time	The running time from the upper limit frequency of the swing frequency to the lower limit frequency of the swing frequency.	0.1 ~ 3600.0s	5.0	○
F7.15	Swing frequency upper limit frequency delay	Set the upper and lower limit frequency delay of the swing frequency.	0.1 ~ 3600.0s	5.0	○
F7.16	Swing frequency lower limit frequency delay		0.1 ~ 3600.0s	5.0	○

F8 Group - Management and Display Parameters

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F8.00	Monitoring parameter selection	For example: F8.00=2, that is, select the output voltage (d-02), then the default display item of the main monitoring interface is the current output voltage value.	0 ~ 30	0	○
F8.01	Shutdown status monitoring parameter item selection	For example: F8.01=3, that is, select the bus voltage (d-03), then the default display item of the main monitoring interface is the current bus voltage value.	0 ~ 30	1	○
F8.02	Swing frequency fall time	Used to correct the display error of the speed scale and has no effect on the actual speed.	0.01 ~ 99.99	1.00	○
F8.03	Parameter initialization	0: No operation The inverter is in the normal parameter read and write state. Function code setting value. Whether it can be changed depends on the setting status of the user password and the current working status of the inverter. 1: Restore factory settings All user parameters are restored to factory defaults by model. 2: Clear the fault record Clear the contents of the fault record (d-19 ~ d-24). This function code is automatically cleared to 0 after the operation is completed.	0 ~ 2	0	×
F8.04	JOG key setting	0: JOG 1: Forward and reverse switching 2: Clear ▲/▼ key frequency setting 3: Reverse run (the RUN button defaults to forward)	0 ~ 3	0	×
F8.05	Reserve	—	—	0	◆
F8.06	Instantaneous power-down frequency reduction factor	Set the instantaneous power-down requency reduction factor	Momentary stop but non-stop function is invalid 1 ~ 100	0	○
F8.07	Instantaneous power down frequency reduction point	Set instantaneous power down frequency reduction point	220V: 180 ~ 330V 250V 380V: 300 ~ 550V 450V	Model setting	×
F8.08	MPPT low point operating voltage	If the bus voltage (d-03) is higher than the set value of MPPT high point voltage (F8.09), it will be operated at the maximum frequency; if it is lower than the set value of MPPT high point voltage (F8.09), it will be operated at the frequency obtained by (bus voltage/MPPT high point voltage)*maximum frequency, and if the bus voltage reaches the MPPT low point voltage (F8.08), it will be operated at the lowest outflow frequency. Running frequency (F8.11) runs.	0V ~【F1.00】	Model setting	○
F8.09	MPPT high point operating voltage		【F1.01】~ 1000V	Model setting	○
F8.10	Photovoltaic pump water shortage detection current corresponds to the ratio of no-load current	If the inverter is operating above the minimum water discharge frequency and the output current is less than the motor no-load current (F4.05)* PV water pump water shortage detection current corresponding no-load current ratio (F8.10), after the PV water pump water shortage detection time (F8.10), the inverter reports water shortage fault E-24.	0.0~ 300.0%	0.0	○
F8.11	Minimum operating frequency of photovoltaic water pumping		0.00Hz ~ 999.9	0.00	○
F8.12	Photovoltaic water pump shortage detection time		0 ~ 250s	10	○
F8.13	Running auxiliary display (only valid for dual display)	For example: F8.13=0, that is, select the output frequency (d-00), then the default display item of the auxiliary display interface is the current output frequency value.	0 ~ 30	4	○
F8.14	Shutdown auxiliary display (only valid for dual display)	For example: F8.03=1, that is, select the set frequency (d-01), then the default display item of the auxiliary display interface is the current set frequency value.	0 ~ 30	3	○

F9 Group - Manufacturer Parameters

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
F9.00	Factory password	1 ~ 9999	1	****	◇

D Group - Monitoring Parameter Group

Function Code	Name	Setting Range	Minimum Unit	Factory Setting	Modification
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	Motor speed (Krpm)	0 ~ 60000Krpm	1Krpm	Model setting	◆
d-06	Analog input AI (V/mA)	0.00 ~ 10.00V/0.00 ~ 20.00mA	0.01V/0.01mA	0.00V/mA	◆
d-07	Reserve	—	0	0	◆
d-08	Analog Output AO (V/mA)	0.00 ~ 10.00V/0.00 ~ 20.00mA	0.01V/0.01mA	0.00V/mA	◆
d-09	Reserve	—	—	0	◆
d-10	PID pressure setting value	0.00 ~ 10.00V/0.00 ~ 99.99 (MPa、Kg)	0.01V/(MPa、Kg)	0.00V/(MPa、Kg)	◆
d-11	PID pressure feedback value	0.00 ~ 10.00V/0.00 ~ 99.99 (MPa、Kg)	0.01V/(MPa、Kg)	0.00V/(MPa、Kg)	◆
d-12	Current count value	0 ~ 9999s	1s	0s	◆
d-13	Current timing value (s)	0 ~ 9999s	1s	0s	◆
d-14	Input terminal status (X1-X5)	0 ~ 1FH	1H	0H	◆
d-15	Output status (Y/R)	0 ~ 3H	1H	0H	◆
d-16	Module temperature(°C)	0.0 ~ 132.3°C	0.1°C	0.0	◆
d-17	Software upgrade date (years)	2010 ~ 2026	1	2021	◆
d-18	Software upgrade date (month, date)	0 ~ 1231	1	0615	◆
d-19	Second fault code	0 ~ 19	1	0	◆
d-20	Last fault code	0 ~ 19	1	0	◆
d-21	Output frequency (Hz) at the latest fault	0.0 ~ 999.9Hz	0.1Hz	0.0Hz	◆
d-22	Output current (A) at latest fault	0.0 ~ 999.9A	0.1A	0.0A	◆
d-23	Bus voltage at last fault (V)	0 ~ 999V	1V	0V	◆
d-24	Module temperature at last fault (°C)	0.0 ~ 132.3°C	0.1°C	0.0°C	◆
d-25	Inverter running time (h)	0 ~ 9999h	1h	0h	◆
d-26	VFD Running Status	0 ~ FFFFH BIT0: Run/stop BIT1: Reverse/forward BIT2: Inching BIT3: DC braking BIT4: Reserve BIT5: Over-voltage limit BIT6: Constant speed down BIT7: Over current limit BIT8~9: 00-0speed/01-accelerate/ 10-decelerate/11- Uniform speed BIT10: Overload pre-alarm BIT11: Reserve BIT12~13: Run command channel: 00-Panel/01-Terminal/10-Reserve BIT14~15: Bus voltage status: 00-normal/01-low voltage protection/ 10-overvoltage protection	1H	0H	◆
d-27	Software version	1.00 ~ 99.99	0.01	1.00	◆
d-28	Power model	0.10 ~ 99.9KW	0.01KW	Model setting	◆
d-29	Motor estimated frequency	0.0 ~ Maximum output frequency【F0.04】 Note: Motor running frequency converted from motor estimated speed	0.1Hz	0.0Hz	◆
d-30	Output torque	-200 ~ +200%	1%	0%	◆

E Group - Fault Code				
Fault Code	Name	Possible Cause of Fault	Maintenance	Code
E0C1	Over-current when accelerating	Acceleration time is too short	Increase acceleration time	1
		The inverter power is too small	Get a large power rating	
		Improper setting of V/F curve or torque boost	Adjust the V/F curve or torque boost	
E0C2	Over-current when decelerating	Deceleration time is too short	Increase deceleration time	2
		The inverter power is too small	Get a large power rating	
E0C3	Overcurrent at constant speed	Low grid voltage	Check input power	3
		Abrupt or abnormal load	Check load or reduce load change	
		The inverter power is too small	Get a large power rating	
EHU1	Accelerating over-voltage during operation	Abnormal input voltage	Check input power	4
		Restart the rotating motor	Set to start after DC braking	
EHU2	Over-voltage during deceleration operation	Deceleration time is too short	Increase deceleration time	5
		Abnormal input voltage	Check input power	
EHU3	Over-voltage during constant speed operation	Abnormal input voltage	Check input power	6
EHU4	Over-voltage during shutdown	Abnormal input voltage	Check input power	7
ELU0	Under-voltage in operation	The input voltage is abnormal or the relay is not connected	Check the power supply voltage or seek service from the manufacturer	8
ESC1	Power module fault	Inverter output short circuit or ground	Check motor wiring	9
		Inverter transient over-current	See over-current countermeasures	
		The control board is abnormal or the interference is serious	Seek service from manufacturers	
		Power device damage	Seek service from manufacturers	
E-OH	Heat sink overheating	Ambient temperature is too high	Reduce ambient temperature	10
		Fan damage	Replace the fan	
		Air duct blockage	Ventilation	
EOL1	Inverter overload	Improper setting of V/F curve or torque boost	Adjust V/F curve and torque boost	11
		Grid voltage is too low	Check grid voltage	
		Acceleration time is too short	Increase acceleration time	
		Motor overload	Select a higher power inverter	
EOL2	Motor overload	Improper setting of V/F curve or torque boost	Adjust V/F curve and torque boost	12
		Grid voltage is too low	Check grid voltage	
		Motor stalled or the load is too large	Check the load	
		Motor overload protection factor setting is incorrect	Correctly set the motor overload protection factor	
E-EF	External device failure	External device fault input terminal is closed	Disconnect the external device fault input terminal and clear the fault (note the cause of the check)	13
EPOF	Dual CPU communication failure	CPU communication failure	Seek service from manufacturers	14
EPID	PID feedback disconnection	PID feedback line is loose	Check feedback connection	15
		The feedback amount is less than the disconnection detection value	Adjust the detection input threshold	
E485	RS485 communication fault	Does not match the host computer baud rate	Adjust baud rate	16
		RS485 channel interference	Check whether the communication connection is shielded, whether the wiring is reasonable, and if necessary, consider connecting the filter capacitor.	
		Communication timeout	Retry	
ETUN	Motor tuning failure	Motor parameter setting error	Reset motor parameters	17
ECCF	Current detection fault	Current sampling circuit failure	Seek service from manufacturers	18
		Auxiliary power failure		
EEEP	EEPROM read and write error	EEPROM failure	Seek service from manufacturers	19
EPLI	Output phase loss protection	Output U, V, W has phase loss	Check the output wiring	20
EPA0	Burst failure	The feedback pressure is less than the low pressure detection threshold or higher than or equal to the high pressure detection threshold	Detect feedback connection or adjust detection high and low pressure threshold	22
E-24	Water shortage failure	Water pump running in reverse direction	Check the water pump	24

Warranty Card

Product Information:

Product Name: _____ Customer Name: _____

Model Type: _____ Customer Address: _____

Purchase Date: _____ Contact Number: _____

Warranty Terms:

1. From the date of original shipment, we guarantee warranty of 12 months for free, and paid service for a lifetime;

2. Product failure caused by the following reasons are not included in 12 months warranty guarantee:
   (1) Users didn't conduct right operation according to user's manual;
   (2) Eguipment has been repaired or modified by user's without consent of manufacturer;
   (3) Fault caused by operation outside standard scope of application;
   (4) Abnormal aging or fault result from bad operating environment;
   (5) Damage caused by force majeure lie earthquke, fire, flood, thunderstrike, abnormal voltage, or other naturtal disasters;
   (6) Damage caused by improper delivery or extermal force.

3. Manufacturer preserves the right to refuse warranty service for the following conditon:
   (1) Damage of beyond recognition of brand, trade mark, serial number, nameplate, and other manufacturer marks;
   (2) Payment is not finished according to contrace;
   (3) Intenional concealment to our after-sale service provider of wrong operation during setting, wirting, operation, maintenance or other process.

4. For failing products, Canroon preserve the right to entrust others for warranty issues.

Certificate

Inspector: QC 001

Test Date: _____

The product is inspected according to the standard.

Canroon

Shenzhen Canroon Electrical Appliances Co., Ltd

Headquarter Add:
9/F, Building 2-B, Skyworth Innovation Valley, Tangtou1 Road,Shiyan Street, Bao'an District, Shenzhen, China
Factory Add:
8/F, Building 8, Zhongyuntai Hi-tech Ind Zone, Songbai Road, Shiyan Street, Bao'an District, Shenzhen, China.

E-mail: sales@canroon.com Website: www.canroon.com National unified free service hotline: 400-069-9960

REV: V1.7_PNP