Hardware Instruction for E380/220 Series Inverter (Simplified)

Manual No.	HPPV00200EN
Manual version	3.0
Date	March,2019

When unpacking, check the following items:

Items	Name	Quantity
1	Inverter	1
2	Straight screwdriver	1
3	This manual	1
4	Parameter List for E380/220 Series Inverter	1
5	Certification of conformity	1

Check if there's any damage to the inverter during transportation. If you find any omission or damage, contact HCFA Technology or your supplier immediately.

1. Safety information and precautions

1.1 Safety symbols

Before installation, operation, maintenance or inspection of this product, thoroughly read through and understand this manual and all of the associated manuals. Installation, commissioning or maintenance may be performed in conjunction with this chapter. HCFA Corporation will assume no liability or responsibility for any injury or loss caused by improper operation. This manual classifies the safety precautions into two categories: "DANGER" and "WARNING".

⚠ DANGER

- Indicates that incorrect handling may cause hazardous conditions,resulting in death or severe injury.

⚠ WARNING

- Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

1.2 Safety precautions

1. 2. 1 Before installation

⚠ DANGER

- Do not install the equipment if you find any water seepage on the inverter upon unpacking.
- Do not install the equipment if you find component missing or damage upon unpacking.
- Do not install the equipment if the nameplate does not conform to the product you received.

⚠ DANGER

- Handle the equipment with care during transportation to prevent damage to the equipment
- Do not touch the components with your hands. Failure to comply will result in static electricity damage.

1.2.2 During installation

⚠ DANGER

- Install the equipment on incombustible objects such as metal, and keep it away from combustible materials. Failure to comply may result in a fire.
- Tighten the screws and install the inverter as specified in this manual. Failure to do may cause a crash.
- Do not loosen the fixed screws of the components, especially the screws with red mark.

⚠ WARNING

- Do not drop wire end or screw into the inverter. Failure to comply will result in damage to the inverter.
- Install the inverter in places free of vibration and direct sunlight.
- When two inverters are laid in the same cabinet, arrange the installation positions properly to ensure the cooling effect.

1.2.3 At Wiring

⚠ DANGER

- Wiring must be performed only by qualified personnel under instructions described in this manual. Failure to comply may result in unexpected accidents.
- A circuit breaker must be used to isolate the power supply and the inverter. Failure to comply may result in a fire.
- Ensure that the power supply is cut off before wiring. Failure to comply may result in electric shock.
- Ground the inverter properly by standard. . Failure to comply may result in electric shock.
- Never connect the power cables to the output terminals (U,V, W) of the inverter. Pay attention to the marks of the wiring terminals and ensure correct wiring. Failure to comply will result in damage to the inverter.
- Make sure to use wire sizes recommended in the manual and the wiring conform to the EMC requirements and safety standards. Failure to do so may cause some accidents.
- Never connect the braking resistor between the DC bus terminals (+) and (-). Failure to comply may result in a fire.
- Use the control line as described in this manual and shield cable for analog and high-speed pulse I/O line and ensure that the shielding layer is reliably grounded.

1.2.4 Before power-on

⚠ DANGER

- All peripheral devices and cables must be connected properly under the instructions described in this manual. Failure to comply will result in accidents or damage to the inverter.
- Make sure that the voltage level of inverter is in consistent with the power voltage. Failure to comply will result in accidents or damage to the inverter.

1.2.5 After power-on

⚠ DANGER

- Do not open the inverter's cover after power-on. Failure to comply may result in electric shock.
- Do not touch or operate the inverter with wet hand. Failure to comply may result in electric shock.
- Do not touch any I/O terminal of the inverter or pull the cables. Failure to comply may result in electric shock and damage to the products.
- Do not change the default settings of the inverter. Failure to comply will result in damage to the inverter.
- Make sure the mechanical equipment is ready to start and the personnel are in the safety area of equipment before operation. Failure to comply may result in products or physical damage.
- Do not touch the rotating part of the motor during the motor auto-tuning or running. Failure to comply will result in accidents

1.2.6 Operations

⚠ DANGER

- Do not touch the fan or the brake resistor. Failure to comply will result in personal burnt.
- Signal detection must be performed only by qualified personnel during operation. Failure to comply will result in personal injury or damage to the Inverter

⚠ WARNING

- Do not move the inverter or control cabinet. Avoid objects falling into the inverter when it is running. Failure to comply will result in damage to the inverter.
- Start/stop the inverter by terminal or control methods in other control circuit. Avoid to start the inverter by power-on. Do not start/stop the Inverter by turning the contactor ON/OFF. Failure to comply will result in damage to the Inverter.

1.2.7 During maintenance

⚠ DANGER

- Do not repair or maintain the inverter at power-on. Failure to comply will result in electric shock.
- Repair or maintain the inverter about ten minutes after the Inverter is powered off. This allows for the residual voltage in the capacitor to discharge to a safe value. Failure to comply will result in personal injury.
- Repair or maintenance of the inverter may be performed only by qualified personnel. Failure to comply will result in personal injury or damage to the inverter..
- All the components and optional accessories must be plugged or removed only after power-off.

1.3 General precautions

1. 3. 1 Motor insulation test

Perform the insulation test when the motor is used for the first time, or when it is reused after being stored for a long time, or in a regular check-up, in order to prevent the poor insulation of motor windings from damaging the inverter. The motor must be disconnected from the motor during the insulation test. A 500-V mega-Ohm meter is recommended for the test. The insulation resistance must not be less than 5 MΩ.

2. Product information and model selection

2.1 Designation rules

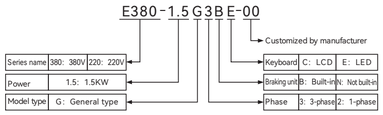


Figure 2-1 Designation rules

2.2 Nameplate description

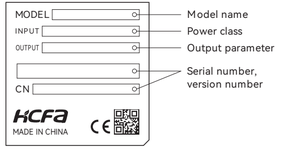


Figure 2-2 Nameplate description

⚠ WARNING

- The barcode on the nameplate of each model is the only mark that identifies the manufacturing details, which is important for after-sale service.

2.3 Product series

Table 2-1 Product specifications and technical data

Model name	Power capacity kVA	Input current A	Output current A	Applicable motor kW	Applicable motor HP
1-phase: 220V(-15%~+20%), 50/60Hz					
E220-0.75G2BE-00	1.5	8.2	4.0	0.75	1
E220-1.5G2BE-00	3.0	14	7.0	1.5	2
E220-2.2G2BE-00	4.0	23	9.6	2.2	3
3-phase: 220V(-15%~+20%), 50/60Hz					
E220-0.75G3BE-00	3.0	5.0	4.0	0.75	1
E220-1.5G3BE-00	4.0	8.0	7.0	1.5	2
E220-2.2G3BE-00	6.0	10.5	9.6	2.2	3
E220-3.7G3BE-00	8.9	14.6	13	3.7	5
3-phase: 380V(-15%~+20%), 50/60Hz					
E380-0.75G3BE-00	1.5	3.4	2.1	0.75	1
E380-1.5G3BE-00	3.0	5.0	3.7	1.5	2
E380-2.2G3BE-00	4.0	5.8	5.0	2.2	3
E380-3.7G3BE-00	5.9	10.5	9.0	3.7	5
E380-5.5G3BE-00	8.9	14.6	13.0	5.5	7.5
E380-7.5G3BE-00	11.0	20.5	17.0	7.5	10
E380-11G3BE-00	17.0	26.0	25.0	11.0	15
E380-15G3BE-00	21.0	35.0	32.0	15.0	20
E380-18.5G3BE-00	24.0	38.5	37.0	18.5	25
E380-22G3BE-00	30.0	46.5	45.0	22	30
E380-30G3NE-00	40.0	62.0	60.0	30	40
E380-37G3NE-00	50.0	76.0	75.0	37	50
E380-30G3BE-00	40.0	62.0	60.0	30	40
E380-37G3BE-00	50.0	76.0	75.0	37	50

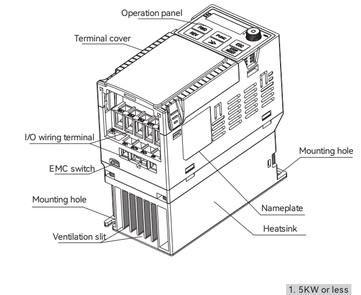
2.4 Technical specifications

Table 2-2 Product technical specifications

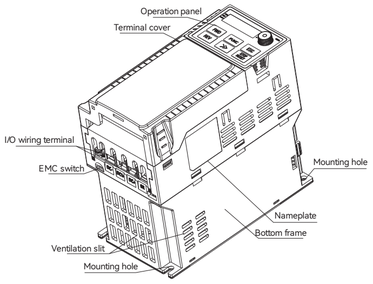
Items		Specifications	
Power input	Rated input voltage	1-phase 220V: 220V~240V, Constant voltage fluctuation ±10%, transient fluctuation -15%~+10% 3-phase 220V: 220V~240V, Constant voltage fluctuation ±10%, transient fluctuation -15%~+10% 3-phase 380V: 380V~480V, Constant voltage fluctuation ±10%, transient fluctuation -15%~+10% that is 323V~528V; Voltage imbalance <3%, in accordance with IEC61800-2	
	Rated input current	Refer to Table 2-1	
Power output	Rated frequency	50Hz/60Hz,fluctuation range ±5%	
	Applicable motor	Refer to Table 2-1	
	Rated capacity	Refer to Table 2-1	
	Rated current	Refer to Table 2-1	
	Output voltage	Three-phase, 0V to the rated voltage, error less than ±3%	
Standard functions	Max. frequency	0Hz~500Hz,Hz~3200Hz can be customized by user	
	Carrier frequency	1. 0kHz~16. 0kHz, can be adjusted automatically	
	Input frequency resolution	0. 01Hz (Digital setting)	
	Control mode	No PG vector speed control, No PG vector torque control★, PG vector speed control★, PG vector torque control★, V/F control	
	Startup torque	0. 25Hz/150% (No PG vector)	0Hz/180%(PG vector)★
	Speed range	1:100(No PG vector)	1:1000 (PG vector)★
	Speed stability accuracy	±0. 5% (No PG vector)	±0. 02%(PG vector) ★
	Torque control accuracy	±5% (PG vector) ★	
	Overload capacity	60s for 150% rated current, 1s for 200% rated current	
	Torque boost	Automatic boost; Customized boost 0.1 % to 30.0 %	
	Acceleration /deceleration curve	Straight-line or S-curve. Four kinds of acceleration/deceleration time, range : 0. 0s~6500. 0s	
	DC braking	DC injection braking frequency: 0Hz to max. frequency, DC injection braking active time: 0.0s to 60.0s. Current level of DC injection braking: 0% to 100%	
	Jog running	JOG frequency range: 0.00Hz~ P00.08. JOG acceleration/deceleration time: 0.0~6500.0s	
	Onboard multiple preset speeds	It implements up to 16 speeds via the simple PLC function or combination of DI terminal states	
	Onboard PID	It realizes process-controlled closed loop control system easily.	

Items		Specifications
Standard functions	Auto voltage regulation (AVR)	It can keep constant output voltage automatically when the mains voltage changes
	Overcurrent suppression	The system limits the output current automatically when the load changes in V/F operation.
	Rapid current limit	The function helps to avoid frequent overcurrent faults to guarantee the inverter operate normally.
	Overvoltage stall control	The system limits the energy feedback automatically during operation to prevent frequent or excessive trips when frequency changes.
	Oscillation suppression	Optimize the V/F oscillation suppression to keep the stable operation
Individual functions	Power dip ride-through	Load feedback energy compensates for any voltage reduction, allowing the drive to continue to operate for a short time during power dips
	Timing control	Time range: 0.0~6500.0 minutes
	Multi-motor switchover	The drive have two groups of motor parameters and can control up to two motors.
	Field bus	Modbus-RTU、Profibus-DP★、CANopen★
	Motor overheat protection	The optional I/O extension card ★enables AI3 to receive the motor temperature sensor input (PT100, PT1000) ★so as to realize motor overheat protection
	Multiple encoder types	Support incremental encoder ★ and rotary transformer★
RU	Command source	Different methods of switching, such as Operating panel, Terminal I/O control, Serial communication
	Frequency source A	Supports up to 10 frequency sources and allows different methods of switching: Digital setting, Analog voltage reference, Analog current reference, Pulse reference, Communication reference.
	Frequency source B	Supports 9 frequency sources, and allows fine tuning of the auxiliary frequency and main& auxiliary calculation.
	Input terminals	Standard: 7 digital input (DI) terminals, one of which supports up to 100kHz high-speed pulse input. 3 analog input (AI) terminals: AI1: Support 0 to10V voltage input AI2: Support 0 to 10V voltage input or 0 to 20mA current input AI3: Support -10 to 10V voltage input Expanded capacity★: Can be customized by user's requirements
	Output terminals	Standard: 2 analog output terminal, support 0 to 10V voltage output or 0 (or 4) to 20mA current output 2 digital output terminal, one of which supports high-speed pulse output terminal for a square-wave signal output in the frequency 0 to 100kHz 1 relay output terminal Expanded capacity: Can be customized by user's requirements
Display and operation on panel	LED display	Show parameters
	LCD display	Optional★
	Parameter copy	Parameters can be copied rapidly by the LCD operation panel.
	Key locking and function selection	It can lock the keys partially or completely and define the function range of some keys so as to prevent mis-function. ★
	Protection mode	Motor short-circuit detection at power-on, input/output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection and overload protection
	Optional parts	LCD operation panel★, braking unit, I/O extension card ★, Profi bus-DP communication card★, CANopen communication card★, incremental encoder PG card★, rotary transformer PG card ★
Environment	Installation location	Indoor, free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapour, drip or salt
	Altitude	Lower than 1000 m (de-rated if the altitude is above 1000m)
	Ambient temperature	− 10°C~ + 40 °C (de-rated if the ambient temperature is between 40°C and 50°C)
	Humidity	Less than 95%RH, without condensing
	Vibration	Less than 5.9 m/s2 (0.6 g)
	Storage temperature	-20°C to +60°C
Protection level		IP020
Cooling		Forced air cooling
Note: Consult HCFA corporation for the items with ★, which may not be supported temporarily.		

2.5 Product appearance and main structure



1. 5KW or less



2.2~7.5KW

Figure 2-3 Product appearance and main structure

2.6 Product appearance and installation size

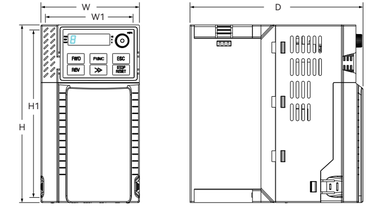


Figure 2-4 Product appearance and installation size

Table 2-3 Product size and installation dimension

Model	Mounting hole mm		External dimension mm			Mounting hole mm	Weight kg
	W1	H1	H	W	D		
Single-phase 220V，50/60Hz							
E220-0.75G2BE-00	60	131	142 (wall-mounting)	72	143	5.2	2
E220-1.5G2BE-00							
E220-2.2G2BE-00	75	146	157 (wall-mounting)	87	153	5.2	3
Three-phase 220V，50/60Hz							
E220-0.75G3BE-00	60	131	142 (wall-mounting)	72	143	5.2	2
E220-1.5G3BE-00	75	146	157 (wall-mounting)	87	153	5.2	3
E220-2.2G3BE-00							
E220-3.7G3BE-00							
Three-phase 380V，50/60Hz							
E380-0.75G3BE-00	60	131	142 (wall-mounting)	72	143	5.2	2
E380-1.5G3BE-00							
E380-2.2G3BE-00	75	146	157 (wall-mounting)	87	153	5.2	3
E380-3.7G3BE-00							
E380-5.5G3BE-00	101	195	207 (wall-mounting)	113	155	5.2	5
E380-7.5G3BE-00							
E380-11G3BE-00	118	239	250 (wall-mounting)	130	185	5.5	8
E380-15G3BE-00							
E380-18.5G3BE-00	158	281	300 (wall-mounting)	178	192	8.4	10
E380-22G3BE-00							
E380-30G3NE-00	195	335	350 (wall-mounting)	225	192	6	15
E380-37G3NE-00							
E380-30G3BE-00	195	335	350 (wall-mounting)	225	192	6	15
E380-37G3BE-00							

2.7 Operation panel and cutout dimensions

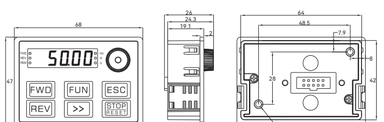


Figure 2-5 External dimension for LED panel

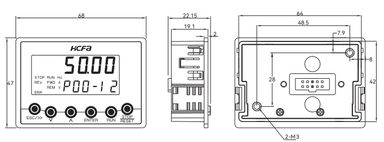


Figure 2-6 External dimension for LCD panel

The cutout dimensions for installation is shown as Figure 2-7 when no external tray. The best thickness for opening sheet is 1.2mm.

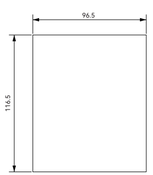
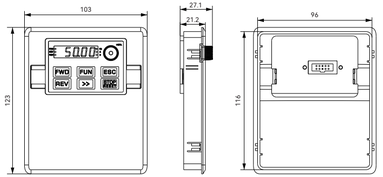


Figure 2-7 Cutout dimension for external keyboard and tray



⚠ WARNING

- The machine is equipped with LED panel and support external extension. Make notes when purchasing and the external extension cable can be provided.
- LCD panel is optional and can be extended externally.

2.8 Warranty Agreement

HCFA Corporation will provide 18-month warranty (starting from the leave-factory date on the barcode) for the failure or damage under normal use conditions. If the equipment has been used for over 18 months, reasonable repair expenses will be charged.

⚠ WARNING

- Free warranty only applies to the inverter itself
- Make sure to keep the packaging material of the inverter for convenient use of movement and maintenance in the future.

① Reasonable repair expenses will be charged for the damages due to the following causes even though in the warranty period.
② Improper operation without following the instructions or out of the specified range
③ The user repair or modify the machine without permission
④ Improper storage or maintenance
⑤ Using the inverter for non-recommended function
⑥ Fire, flood, salt corrosion, corrosive gas, earthquake, storm, lightening or abnormal voltage
⑦ The maintenance fee is charged according to HCFA's uniform standard. If there is an agreement, the agreement prevails.

3. Mechanical and electrical installation

3.1 Selection of peripheral devices

Table 3-1 Selection of MCCB, conductor and wire

Model name	MCCB (A)	Contactor (A)	Main circuit input wire (mm^2)	Main circuit output wire (mm^2)	Control circuit wire (mm^2)
1-phase 220V 50/60Hz					
E220-0.75G2BE-00	16	12	0.75	0.75	0.5
E220-1.5G2BE-00	25	18	1.5	1.5	0.5
E220-2.2G2BE-00	32	25	2.5	2.5	0.5
3-phase 220V 50/60Hz					
E220-0.75G3BE-00	10	9	0.75	0.75	0.5
E220-1.5G3BE-00	10	9	0.75	0.75	0.5
E220-2.2G3BE-00	16	12	1.5	1.5	0.5
E220-3.7G3BE-00	20	18	2.5	2.5	0.75
3-phase 380V 50/60Hz					
E380-0.75G3BE-00	10	10	0.75	0.75	0.5
E380-1.5G3BE-00	16	10	0.75	0.75	0.5
E380-2.2G3BE-00	16	10	0.75	0.75	0.5
E380-3.7G3BE-00	25	16	1.5	1.5	0.5
E380-5.5G3BE-00	32	25	2.5	2.5	0.5
E380-7.5G3BE-00	40	32	4.0	4.0	0.75
E380-11G3BE-00	63	40	4.0	4.0	0.75
E380-15G3BE-00	63	40	6.0	6.0	0.75
E380-18.5G3BE-00	100	63	6	6	1.0
E380-22G3BE-00	100	63	10	10	1.0
E380-30G3NE-00	125	100	16	10	1.0
E380-37G3NE-00	160	100	16	16	1.0
E380-30G3BE-00	125	100	16	10	1.0
E380-37G3BE-00	160	100	16	16	1.0

Table 3-2 Selection of I/O AC reactor, DC reactor]

Capacity (kW)	Input AC reactor		Output AC reactor		DC reactor	
	Current (A)	Inductance (mH)	Current (A)	Inductance (uH)	Current (A)	Inductance (mH)
E380-0.7G3BE-00	5	3.8	5	1.5	/	/
E380-1.5G3BE-00	5	3.8	5	1.5	/	/
E380-2.2G3BE-00	7	2.5	7	1	/	/
E380-3.7G3BE-00	10	1.5	10	0.6	/	/
E380-5.5G3BE-00	15	1.0	15	0.25	/	/
E380-7.5G3BE-00	20	0.75	20	0.13	/	/
E380-11G3BE-00	30	0.60	30	0.087	/	/
E380-15G3BE-00	40	0.42	40	0.066	/	/
E380-18.5G3BE-00	50	0.35	50	0.052	40	1.3
E380-22G3BE-00	60	0.28	60	0.045	50	1.08
E380-30G3NE-00	80	0.19	80	0.032	65	0.80
E380-37G3NE-00	90	0.16	90	0.030	78	0.70
E380-30G3BE-00	80	0.19	80	0.032	65	0.80
E380-37G3BE-00	90	0.16	90	0.030	78	0.70

3.2 Typical wiring

3. 2. 1 Typical wiring for three-phase 220V

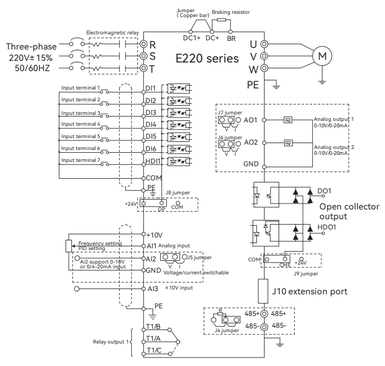


Figure 3-1 Typical wiring for inverter of three-phase 15kw or less

Notes: The control circuit wiring for E-series inverters are the same.
The diagram above shows the wiring diagram for 220V inverter.

3.3 Control circuit terminals

3. 3. 1 Terminal arrangement of control circuit

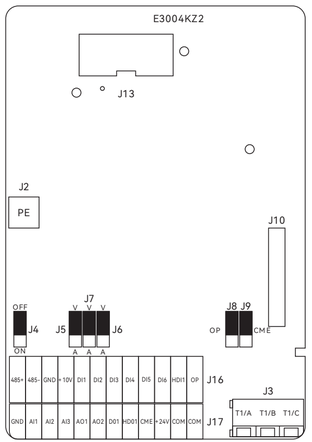


Figure 3-2 Terminal arrangement of control circuit

3. 3. 2 Description of control circuit terminals

Table 3-3 Description of control circuit terminals

Type	Terminal	Name	Function description
Power supply	+10V-GND	+10V power supply	1. Provide +10 V power supply to external unit. 2. Generally, it provides power supply to external potentiometer with resistance range of 1kΩ~10kΩ; 3. Maximum output current: 10 mA
	+24V-COM	External +24V power supply	1. Provide +24 V power supply to external unit. Generally, it provides power supply to DI/DO terminals and external sensors. 2. Maximum output current: 200 mA
	OP	Input terminal of external power supply	1. Connect to +24 V by default. 2. WhenDI1~DI6, HDI1 need to be driven by external signal, OP needs to be connected to external power supply and be disconnected from the jumper J8. (cannot be connected to +24V or COM)
Communicatio	485+	RS-485 communication terminal	Standard RS-485 communication terminal, please use shield twisted pair cable.
	485-	RS-485 communication terminal	Standard RS-485 communication terminal, please use shield twisted pair cable.
Analog input	AI1-GND	Analog input terminal 1	1. Input voltage range: 0V~10V DC; 2. Input impedance: 22kΩ
	AI2-GND	Analog input terminal 2	1. Input range: 0~10 VDC/0/4~20 mA, decided by jumper J5 on the control board, Default: 0~10 VDC 2. Impedance: 22 kΩ (voltage input), 500 Ω (current input)
	AI3-GND	Analog input terminal 3	1. Input voltage range: -10V~+10VDC; 2. Input impedance: 22kΩ
Digital input	DI1-COM	Digital input 1	1. Optical coupling isolation, compatible with dual polarity input . Impedance: 3.3kΩ 2. Multifunctional digital input, set the functions by P05.00~P05.05 3. Internal +24V power supply by default, COM is the common terminal 4. When using external power supply, J8 should be disconnected and connect +24V to the OP terminal. COM is the common terminal. (external voltage range: +24V±10%)
	DI2-COM	Digital input 2	
	DI3-COM	Digital input 3	
	DI4-COM	Digital input 4	
	DI5-COM	Digital input 5	
	DI6-COM	Digital input 6	
	HDI1-COM	High-speed pulse input	1. When used as general digital input, the features are same to the DI1~DI6's. 2. Connection with OP terminal as the dual-polarity high-speed pulse input terminal, max. input frequency is 100kHz; 3. When using external power supply, the input voltage range is +24V±10%; 4. Impedance : 1.65kΩ

Type	Terminal	Name	Function description
Analog output	AO1-GND	Analog output terminal 1	Support 0V~10V voltage or 0/4mA~20mA current output, Voltage or current output is decided by jumper J7. Default: 0V~10V voltage output
	AO2-GND	Analog output terminal 2	Support 0V~10V voltage or 0/4mA~20mA current output, Voltage or current output is decided by jumper J6. Default: 0V~10V voltage output
Digital output	DO1-COM	Digital output 1	1. Optical coupling isolation, dual polarity open collector output 2. Voltage range: 5V~24V (resistance range: 0.48 kΩ~10 kΩ) 3. Output current range: 0mA~50mA
	HDO1-COM	Highs-speed pulse output terminal	1. When used as digital output, the feature is same to the DO1. 2. Connection with OP terminal as the dual-polarity high-speed pulse output terminal, max. input frequency is 100kHz; 3. Voltage range: 5V~24V (resistance range: 0.48 kΩ~10 kΩ) 4. Output current range: 0mA~50mA
Relay	T1/A-T1/B	NC terminal	Contact driving capacity: 250V AC, 3A, COSΦ=0.4; 30V DC, 1A
	T1/A-T1/C	NO terminal	

3. 3. 3 Jumper description

Table 3-4 Jumper description

Jumper symbol	Selection	Function description
J7	A mark	When connected here, 0/4mA~20mA DC current output is selected for AO1 terminal.
	V mark	When connected here, 0V~10V DC voltage output is selected for AO1 terminal.
J6	A mark	When connected here, 0/4mA~20mA DC current output is selected for AO2 terminal.
	V mark	When connected here, 0V~10V DC voltage output is selected for AO2 terminal.
J5	A mark	When connected here, 0/4mA~20mA DC current output is selected for AI2 terminal.
	V mark	When connected here, 0V~10V DC voltage output is selected for AI2 terminal.
J8	24V mark	When inserted here, OP terminal should be connected to +24V. At this time, HDI 1, DI 1~DI 6 become valid when connected with COM for input.
	COM mark	When inserted here, OP terminal should be connected to COM. At this time, HDI 1, DI 1~DI 6 become valid when connected with +24V for input.

4. Operation and display

4.1 Operation panel

You can modify the parameters, monitor the working status and start or stop the inverter on the operation panel, as shown in the following figure:

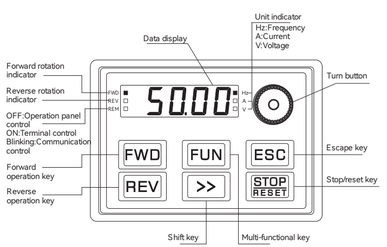


Figure 4-1 Diagram of the operation panel

4. 1. 1 Description of keys on the operation panel

The function description of six keys and one turn button on the operation panel is shown in Table 4-1.

Table 4-1 Description of keys and button on the operation panel

Symbols	Name	Function description
ESC	Edit/ESC key	Enter or exit the programming status
FWD	Forward operation key	Start the forward operation with the operation panel
REV	Reverse operation key	Start the reverse operation with the operation panel
>>	Shift	Select the displayed parameters in turn in the stop or running state, and select the digit to be modified when modifying parameters.
STOP RESET	Stop/Reset	Stop the inverter when it is in the running state and perform the reset operation when it is in the fault state. The functions of this key are restricted in P10. 00.
FUN	JOG control/ forward/reverse rotation switchover	Refer to Table 4-2 for details of multi-functional keys.
	Turn button	Increase/decrease the data of setting operation frequency and parameters. Turn left to decrease the parameter data and right to increase the parameter data. And press the button to save the setting parameters.

Table 4-2 Description of FUN(multi-functional) keys

Setting value for P10-02	FUN keys	Description
0	No function	FUN key disabled
1	Forward JOG	Forward JOG function
2	Reverse JOG	Reverse JOG function
3	Emergency stop	Press FUN key to decelerate to stop by the set time of P01-13
4	Coast stop	Coast to stop and output prohibit
5	Operation command switchover	Operation panel control →Terminal control →Communication control→Operation panel control, long-press for 2s to switch
6	Clear frequency UP/DOWN	Clear the frequency value adjusted by UP/DOWN

4.1.2 Description of indicators

Six indicators on operation panel and its description are shown as Table 4-3.

Table 4-3 Description of indicators

Indicators		Name	Description
State indicators	FWD	Forward rotation indication	ON: In the stop state, the forward rotation command has been performed In the running state, the inverter operates normally Flash: Switching from forward rotation to reverse rotation
	REV	Reverse rotation indication	ON: In the stop state, the reverse rotation command has been performed In the running state, the inverter operates normally Flash: Switching from reverse rotation to forward rotation
	REM	Operation command setting	OFF: Operation panel control ON: Terminal control Flash: Communication control
Unit indicators	Hz	Frequency indication	ON: Show the unit of frequency
	A	Current indication	ON: Show the unit of current
	V	Voltage indication	ON: Show the unit of voltage
	Hz + A	Speed indication	ON: Show the unit of speed
	Hz + V	Percentage indication	ON: Show the unit of percentage
	Hz + A + V	Time indication	ON: Show the unit "s"
	All OFF	No unit	No unit