# DFL-VF series inverter user manual (V308)

This manual provides users with installation, parameter settings, Fault diagnosis, and Routine maintenance. To ensure proper operation , please read and keep it carefully

## Warning:

1、 Please power off before wiring!

2、 Please don't insert objects into main circuit board or touch it, since the electronic components are particularly sensitive to static electricity

3、After cutting off AC power , some electronic parts may remain a residual high-voltage, touch the internal circuit or components is prohibited especially when the indicator is light on.

4、Output terminals connecting to power is absolutely prohibited!

5、Make sure the inverter terminals is properly grounded

6、If you will not use the inverter for a long time, please cut off power!

This manual is specially for DFL-VF Series, software version is :V308.9 . Since our products and specifications are constantly updated , this manual is used for software version V308.0-V308.9. The real function of your order might be different with this file .

Software version illustration:

220V series : V308.0-V308.9

V308.1 suitable for special inverter matches with single phrase motor
V308.2 suitable for constant pressure water supplying inverter
V308.3 suitable for wire cutting inverter
V308.4 suitable for electric spindle inverter
V308.5 suitable for knitting machine dedicated inverter
V308.6 suitable for terminal machine inverter
V308.7 suitable for environmental protection air conditioner inverter
V308.9 suitable for 220V universal inverter

380V series : V408.0-V408.9
V408.9 suitable for 380V universal inverter

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# Chapter 1
# Production Overview

## 1.1 Precautions on commodity inspection and storage

## Before delivery, all goods are under strictly quality control and well packed. However it may damage during the international transportation, please check them carefully:

1. Check the package condition to make sure no damage happened during transportation
2. Open the package and find out the user manual
3. Check the nameplate information on side of the inverter , be sure you get the right product or spare parts

For any problem you may have, please contact your supplier!

### STORAGE

Inverter should be packed and stored in ventilate and dry place. Keep it away from corrosive gas, liquid and stained conditions.

The relative Humidity suggest to be 0% - 95% , no condensing,

The allowed temperature range is from -25℃ **to 65**℃

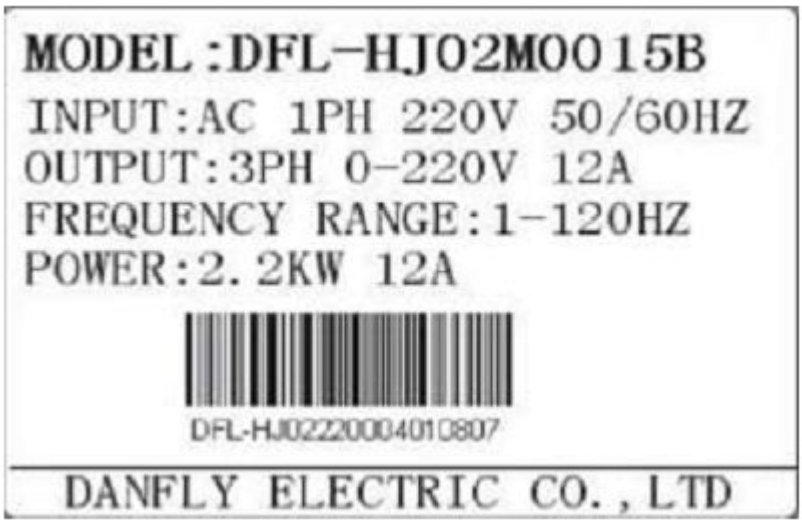
Transportation Cautions:

Temperature range is from -25℃ **to 70**℃

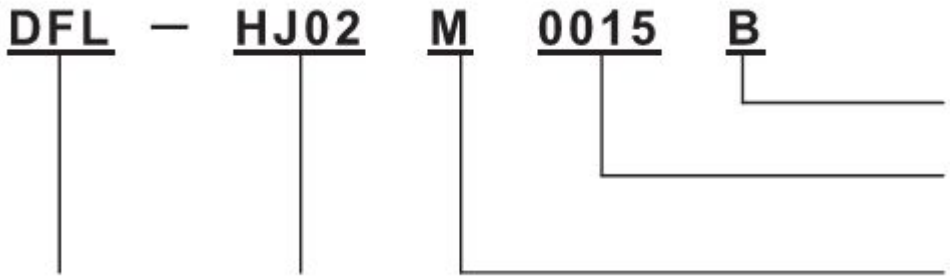
Relative Humidity is allowed to be 5% - 95%

Atmospheric pressure is allowed to be from 70kpa to 106kpa

## 1.2 Description of nameplate

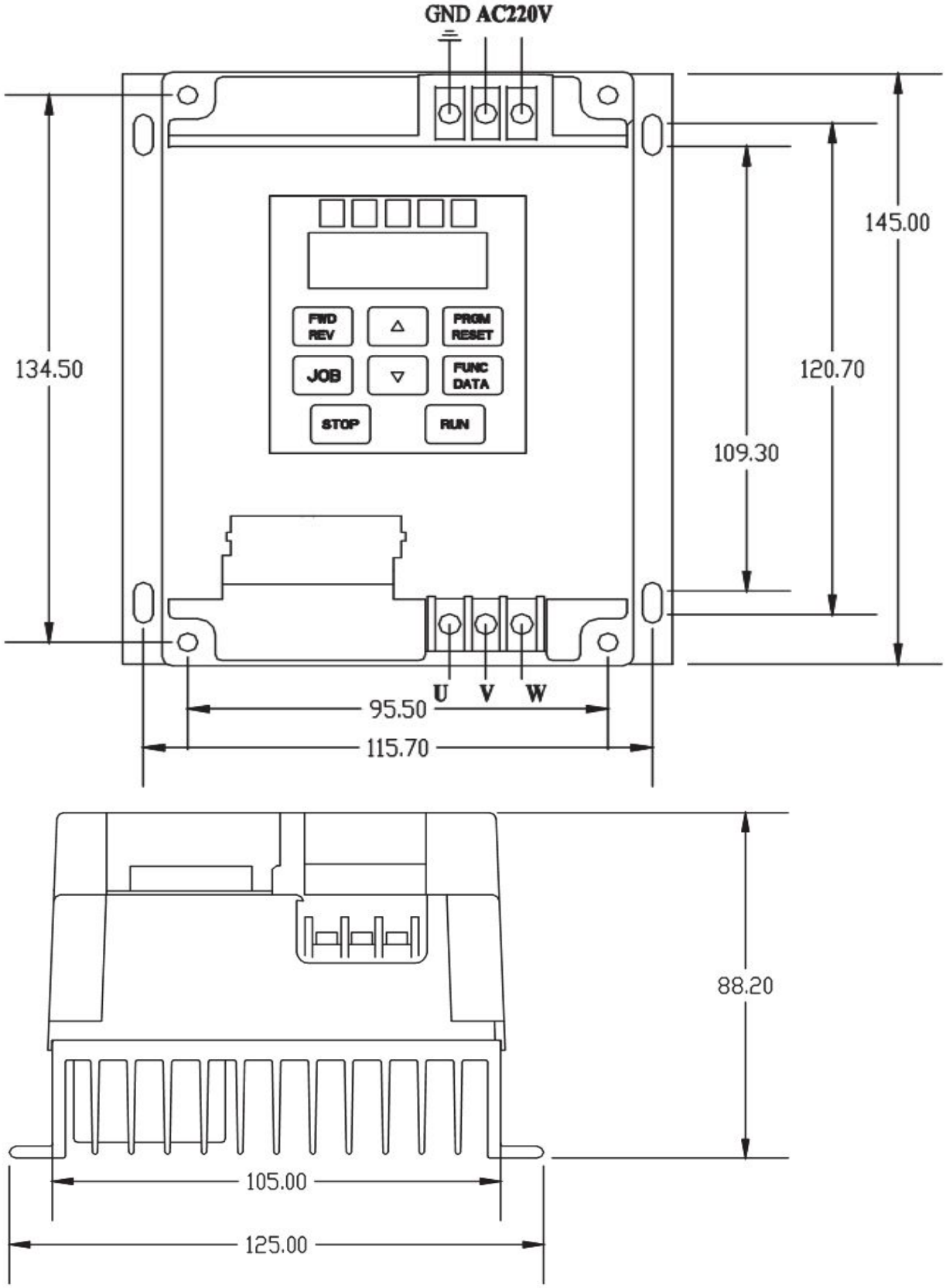



## Designation for model name information

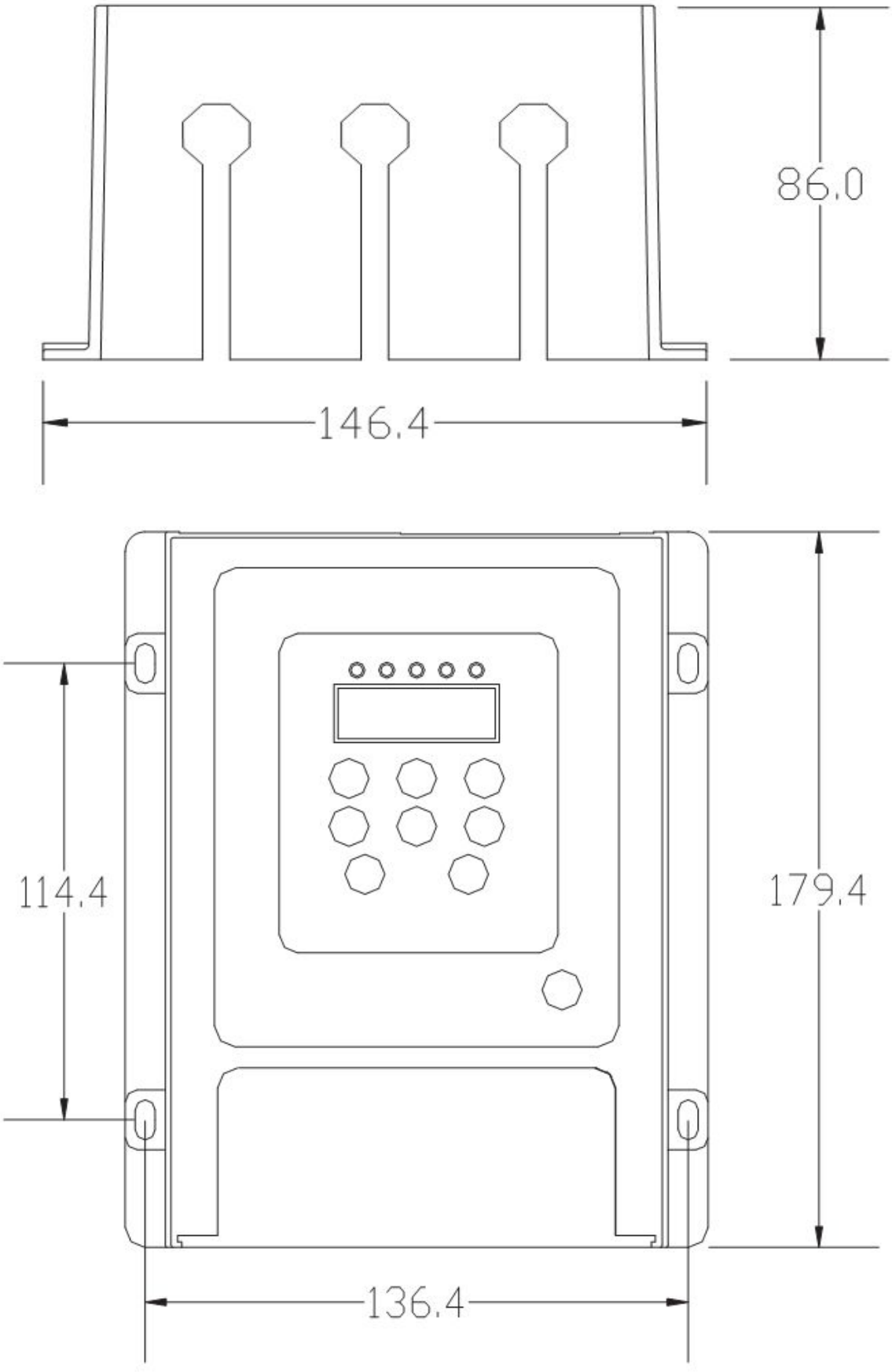



# Chapter 2 Installation and wiring

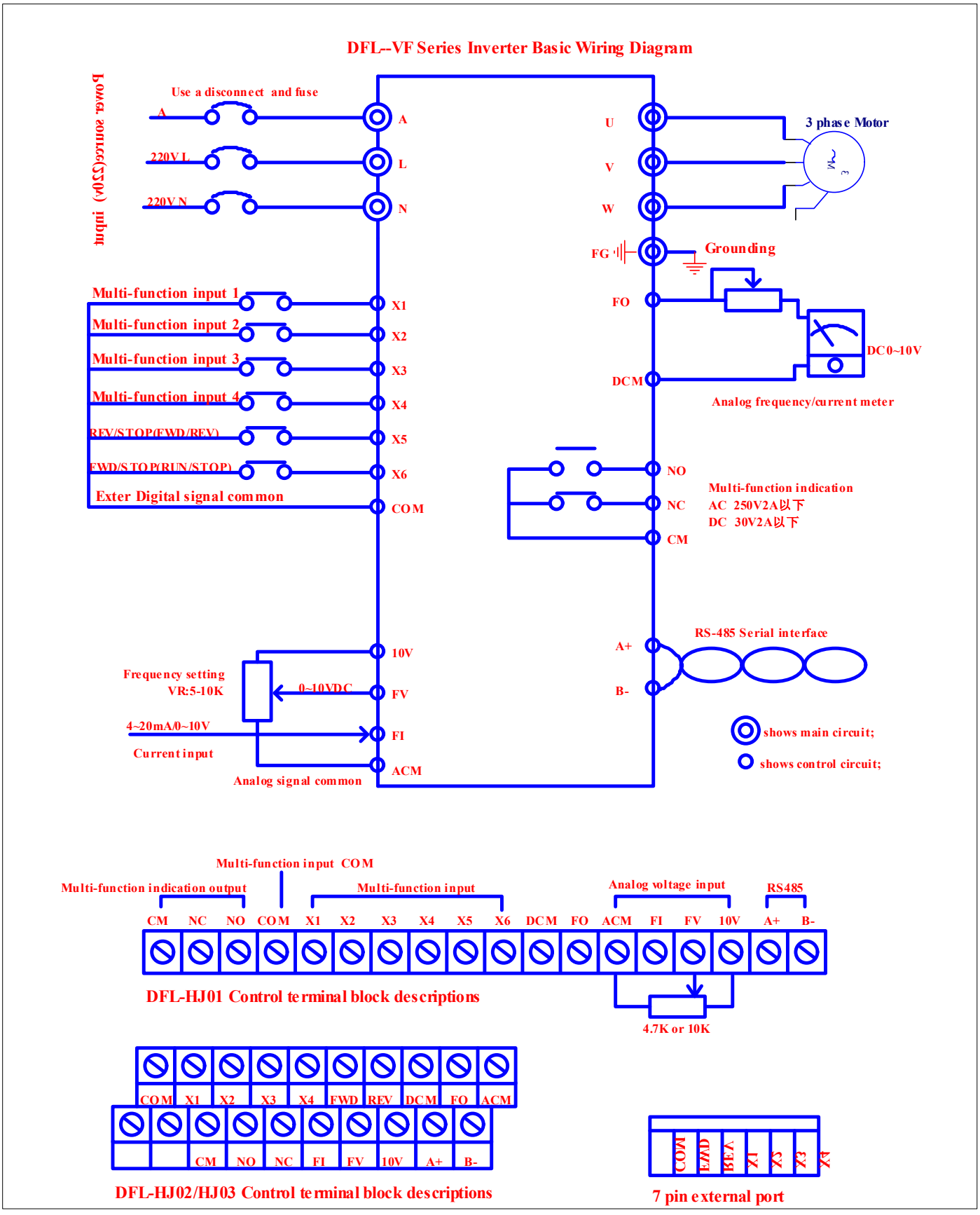
## 2.1 DFL200S Series Installation Dimension



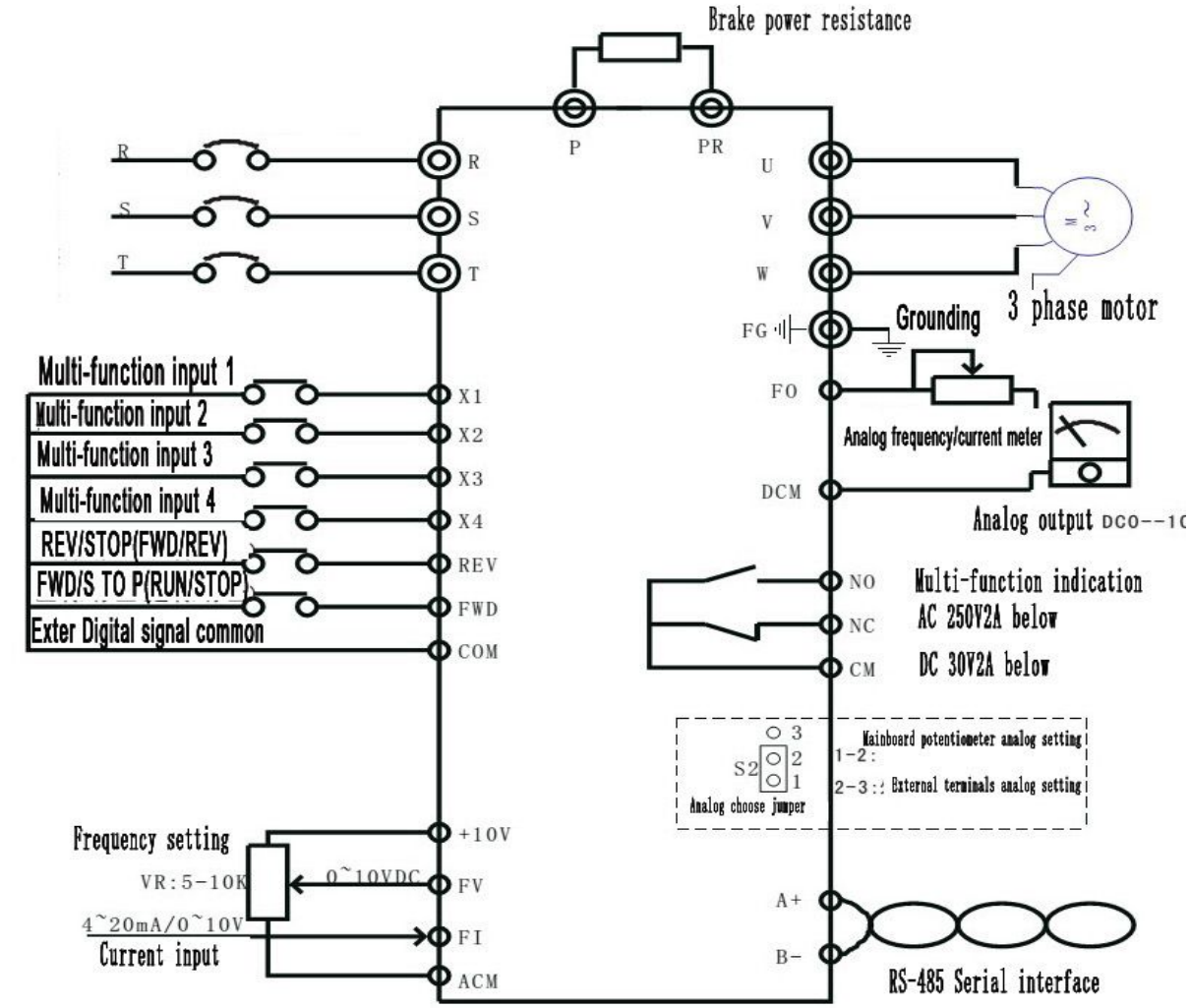

## 2.2 DFL3000A/4000A Series Installation Dimension




## 2.3 DFL200S/DFL3000A (220V) basic wiring diagram



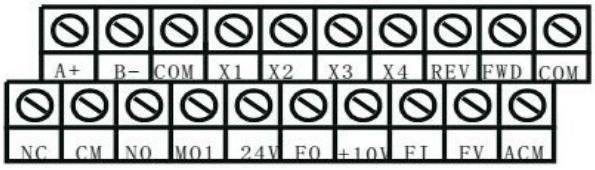

## 2.4 DFL4600S/DFL4000A (380V) basic wiring diagram



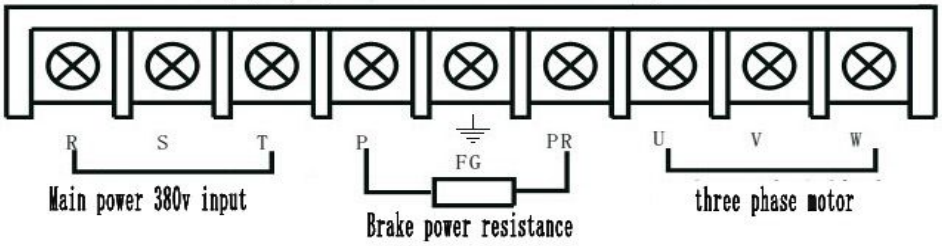

shows main circuit
shows control circuit

10 pin Display interface

DFL4000A Control terminal block descriptions




DFL4000A main input/ouput power Control terminal block descriptions




## 2.5 Control circuit wiring

**The Control circuit wiring should be separated from the main circuit wiring. Do**

**not put them together in one slot.**

**Terminal marks:**

| Terminal marks | Terminal Function | Supplement |
|---|---|---|
| COM | External multifunctional common terminal | |
| X1-COM | The first input terminal | 4 terminals can build up 16 speeds. 0000 refers first speed,0001 refers to second speed,0010 refers to third speed , 0011 refers to fourth speed…..1111 is the 16th speed |
| X2-COM | The second input terminal | |
| X3-COM | The third input terminal | |
| X4-COM | The fourth input terminal | |
| FWD-COM | Forward rotation/ Stop | Run ->Stop<br>Stop ->forward rotate |
| REV-COM | Reversion/ Stop | Run->pause Stop ->reverse |
| DCM | Digital signal | |
| FO-DCM | Analog Cymometer / galvanometer | |
| ACM | Analog signal | |
| CM | The common point of output | |

| | | |
|---|---|---|
| | instruction signal | |
| NO-CM | The open point of output instruction signal | contact output of the relay |
| NC-CM | The closed point of output instruction signal | |
| FI-ACM | Input terminal of analog current | 4 ～ 20mA |
| FV-ACM | Input terminal of analog voltage | 0 ～ +10V / Maximum output frequency |
| 10V-ACM | Power for setting speed | +10V Speed instruction power |
| A+ | Communication terminal A | RS485 |
| B+ | Communication terminal B | |

§ The control signal wire is shielded and stranded

§ Wire for RS-485 communication should be the twisted pair

### 2.4 Safety Considerations

**1.Please use right wires according to relative laws. When the distance between inverter and motor is over than 25meters, should raise wiring standard.**

**Between the three-phase AC input power and main circuit terminal (R,S,T) there must be a fuse switch. Make an electromagnetic contactor in series to cut off power before the inverter steer its protection.**

3. Ground terminal to the first grounded wiring. The ground impedance must be less than 100R. Or make the ground wire dimension is same with the main circuit wires.

4.The inverter should not joint ground with other high current loads, must be separated.

5.The ground wire should be shorter.

6.When the inverters are common ground, don't make a ground loops.

7.Confirm the voltage and maximum current.
8. The power indicator on the side of inverter shows the voltage inside the inverter.

9.When the power indicator is lighting ,do not connect or disassemble wires.
10. The DFL-VF series is not equipped with the brake resistor. In the occasion of frequently starting or stopping inverters, please install brake resistor or unit.

11.Please connect the inverter's terminal U,V,W with motors' correspondingly. If the FED lights, means the inverter is forward rotation; if the REV lights, means the inverter is reversing. When the

**inverter is forward rotation and motor is reversing ,swap any two terminals of the motor.**

**12. Do not connect the AC power with output terminals of the inverter.**

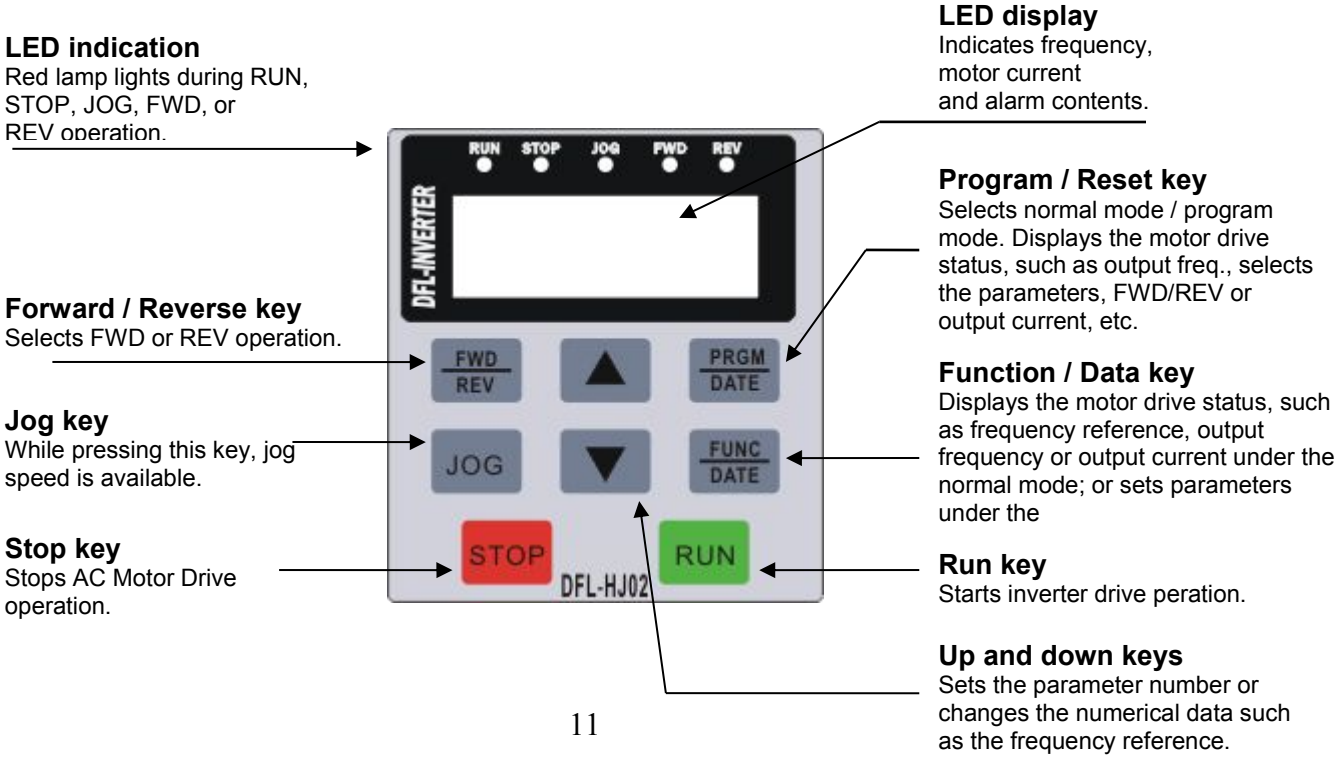
# Chapter three

# Operation Panel

### 3.1 Operation panel description( digital keypad is optional)

## 一、Digital Keypad Operation

This digital keypad module includes two parts: display panel and keypad. The display panel allows the user to program the AC drive, as well as view the different operating parameters. The keypad is the interface for user and inverter.
. The following description refers to different parts.



## 二、Digital Keypad Parts and Functions

| KEY | Functions |
|---|---|
| PRGM / DATE | For normal operating or programming mode (the key is always valid)<br>. Must select programming mode to modify parameters<br><br>If the drive is shut down due to a fault occurs, after troubleshooting, press this button will clear the error message. |
| FUNC / DATE | This is data setting key. In normal operating mode, press this button to display the drive status information, such as frequency command, output frequency and input current; in programming mode, press this key to display the parameter content. Then Press this button again will save the changed parameters to the internal memory |
| FWD / REV | Select forward or reverse operation. Press this button , the motor will decelerate to 0HZ and change direction, but motor will not restart automatically after the shutdown. An external terminal can control motor forwarding or reversing, when modify Pr.001 to "d0001" or "d0002" |
| JOG | Press this button ,the motor will run at jog frequency as set by the parameter specified under Pr.23 |
| RUN | start running key (if set to an external terminal control, press this key is invalid) |
| STOP | Stop key. |
| ▲<br>▼ | Press the “Up” and “Down” button to select or modify parameters ..<br>Note: Pressing the “Up” or “Down” button momentarily changes the parameter settings in increments. Press and hold these keys to rapidly run through the possible settings. |

## 三、Explanation of the display

| Display | Illustration |
|---|---|
|  | Display the operating frequency of inverter .The frequency instruction may from self frequency setting or from jog frequency or multifunctional terminal 1,2,3,4. If frequency originates from digital keypad, user can use UP DOWN KEY to set it and saved automatically |
|  | Display the operating frequency output to motor |
|  | Display the operating AC voltage input to inverter |
|  | Display the output current of inverter |
|  | Display the specified parameter code. The present parameter Value will be displayed by pressing the FUNC DATE key. |
|  | Display present parameters. Press the FUNC DATE key to store the modified parameters. |
|  | The parameter is accepted and stored automatically at internal memory when the “end” (as left picture) remains approximately 1 second on the display. |

3.3 LED indicators

RUN: light up means working

STOP: red light means stop working

JOG red light means operating jog command

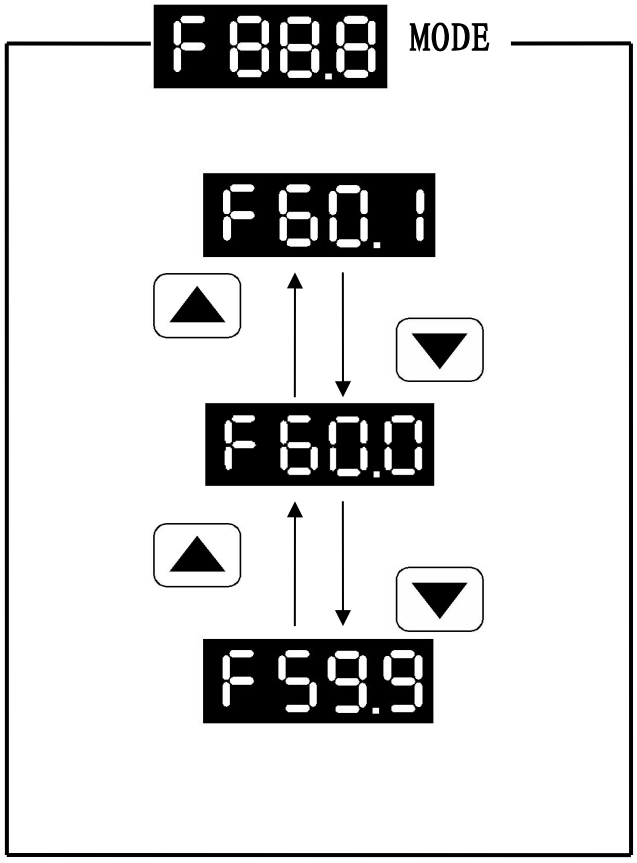
FWD red light means forward operation

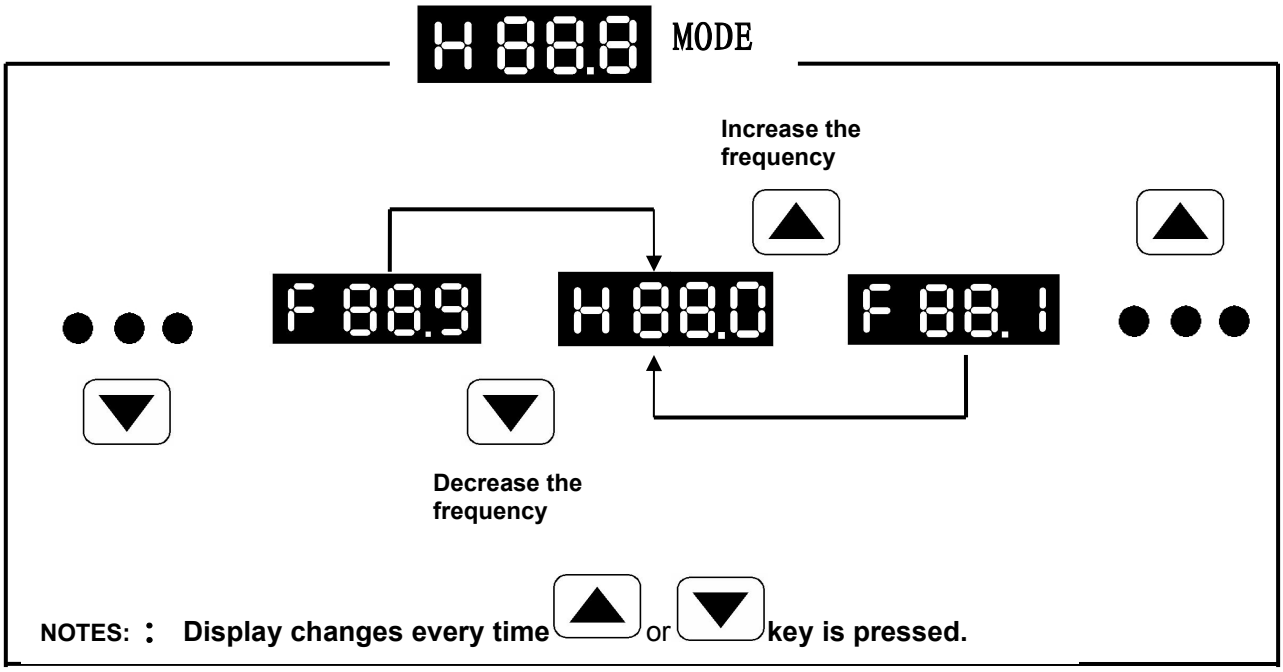
REV red light means reversal operation

3.4 Digital keypad instructions:

The keypad will display below information after power on. Press ‘RUN’ , inverter will work at 50.00hz as default ; Press ‘stop’ inverter will stop working. Abide following steps to set frequency data.

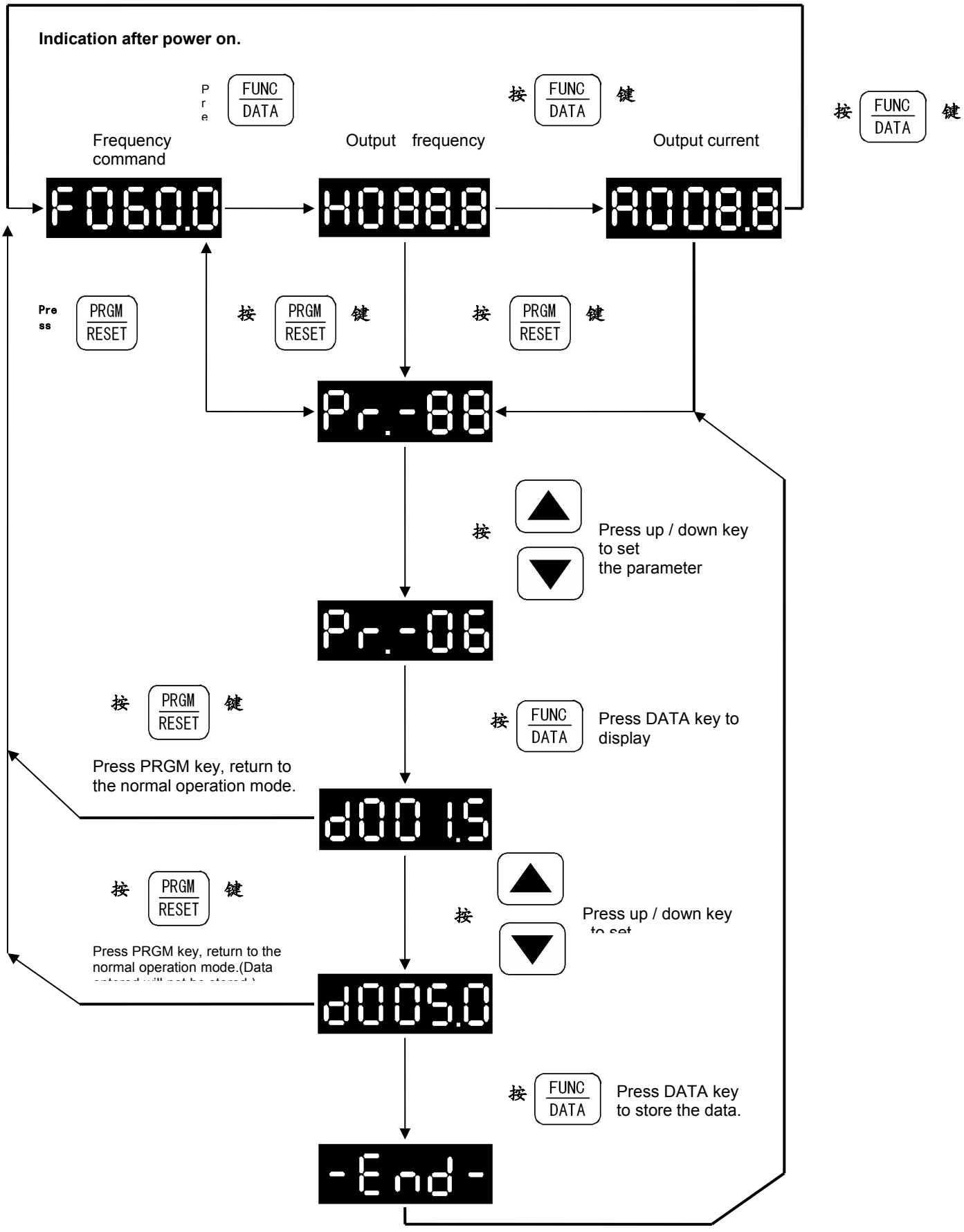
## 四、Digital Keypad Operating Modes & Programming steps



3.5

Please observe below steps to **set parameters**



## 五、Basic Wiring Diagram

# 六、Summary of Parameter Settings

| Code | Parameter | Function Explanation | Parameter Value | Factory Setting |
|---|---|---|---|---|
| Pr. 000 | Main frequency source selection setting | Select the main (first paragraph) frequency source | d0000:Main frequency (first paragraph) is determined by the digital keypad, press the up and down arrow keys to modify | d0000 |
| | | | d0001: Main frequency (first paragraph) is decided by the input analog signal (DC 0 ~ +10 V) + (DC 4 ~ 20mA); Please set the parameters Pr.28 , Pr29, Pr41, Pr.42 correctly | |
| | | | d0002:Main frequency (first paragraph) is decided by RS-485 communication interface | |
| Pr. 001 | source of run command | selection of running signal source | d0000: Run command is determined by digital operator | d0000 |
| | | | d0001: Run command is determined by external terminals .STOP key is valid | |
| | | | d0002: Run command is determined by external terminal decision, STOP key is invalid | |
| | | | d0003:Run command is determined by the RS-485 serial communication interface, STOP key is valid | |
| | | | d0004: Run command is determined by RS-485 serial communication interface, STOP | |
| Pr. 002 | selection of stop mode | selection of stop mode | d0000: RAMP stop | d0000 |
| | | | d0001: Coast to stop | |
| Pr. 003 | V / F curve setting<br>Note: curve setting conditions :<br>1. Max.operating frequency >= Mid-point frequency >= Min. output frequency; 2. Max. output voltage >= Mid-point voltage >= Min. output voltage<br>(Note : Do not modify this parameter when motor is running) | | Max. operating frequency d010.0--d400.0 Hz | d050.0 |
| Pr. 004 | | | Max. voltage frequency d010.0--d400.0 Hz | d050.0 |
| Pr. 005 | | | Max. output voltage d010.0--d250.0 V/400.0v | d220.0 |
| Pr. 006 | | | Mid-point frequency d010.0--d120.0 Hz | d001.5 |

| | | | | |
|---|---|---|---|---|
| Pr. 007 | | | Mid-point voltage d010.0--d250.0 V | d040.0 |
| Pr. 008 | | | Min. output frequency d010.0--d120.0 Hz | d001.0 |
| Pr. 009 | | | Min. output voltage | d035.0 |
| Pr. 010 | DC-BUS brake level | | 220V Series Brake Level d0260-d320V | d0280 |
| | | | 380V Series Brake Level d0440--d550V | d0480 |
| Pr. 011 | Selection of acceleration and deceleration for S curve(Note : Do not modify this parameter when motor is running) | | d0000: line Acc/Dec Mode<br>d0001: S curve Acc/Dec Mode | d0000 |
| Pr. 012 | Days of the accumulated running time | | d0000—d9999 | d0000 |
| Pr. 013 | Hours of the accumulated running time | | d0000—d0000 | d0000 |
| Pr. 014 | Jog acceleration and deceleration time settings | | d000.1—d600.0s | d015.0 |
| Pr. 015 | settings of forward and reversal frequency for JOG | | d000.1—d120.0 Hz | d015.0 |
| Pr. 016 | Prohibit reversal setting | Notes: Inverter will stop REV function without reminding when prohibit reversal is setup. | d0000:Allow Reversal | d0000 |
| | | | d0001: Prohibit reversal<br>Note: REV and FWD are relative concept. Please carefully check the motor direction in the occasion of reversing is not allowed. | |
| Pr. 017 | setting for over-voltage stall prevention | Over-voltage stall prevention setting | d0000: Over-voltage stall prevention function is invalid | d0001 |
| | | | d0001: Over-voltage stall prevention function is valid. | |
| Pr. 018 | Setting for over-current during accelerate | | d0050—d0200% | d0140 |
| Pr. 019 | Setting for over-current during running | | d0050—d0200% | d0140 |
| Pr. 020 | Setting for percentage of DC braking current | Please set 0% when don't need DC current to brake | d000.0—d050.0% | d008.0 |
| Pr. 021 | Setting the time for DC current braking on start the motor | Set up to 0 to shut down this function | d000.0—d025.0s | d0000 |
| Pr. 022 | Setting the time for DC current braking on stop the motor | Set up to 0.0s to shut down this function | d000.0—d120.0s | d001.5 |

| | | | | |
|---|---|---|---|---|
| Pr. 023 | Setting the starting frequency for the DC current braking when shut down motor | Before decelerating to stop, this parameter is the starting frequency for DC current brake. It will work when the parameter is smaller than the min. frequency(pr.008) | d000.0—d060.0 Hz | d001.0 |
| Pr. 024 | Momentary power loss protection | | d0000: Operation stops after momentary power Loss. | d0000 |
| | | | d0001: Operation continues after momentary power loss. Track down with operating frequency | |
| | | | d0002: Operation continues after momentary power loss. Track up from minimum output frequency.<br><br>d003: refer to Pr025 | |
| Pr. 025 | Setting for restarting time after momentary power loss | | d000.3—d005.0 s | d000.2 |
| Pr. 026 | Setting for the Max. tracking time when power on | | d000.3—d005.0 s | d000.5 |
| Pr. 027 | Selection of the max. current for speed tracking | | d0030 —d0200% | d0150 |
| Pr. 028 | Selection of the max. input analogy frequency | | d000.0—d120.0 Hz (when Pr.000=1) | d050.0 |
| Pr. 029 | Selection of the min. input analogy frequency | | d000.0—d120.0 Hz (when Pr.000=1) | d000.0 |
| Pr. 030 | External control terminal setting (2-wire / 3-wire operation control selection ) | | d0000:X5 FWD / STOP, X6 REV / STOP | d0000 |
| | | | d0001:X5 FWD / REV, X6 RUN / STOP | |
| | | | d0002: X4,X5,X6 is the 3-WIRE operation control mode | |
| | | | d0003 ： Shutdown , Closing X5 will FWD motor instantly; During running, closing X5 will shut down motor instantly .<br>Shutdown, closing X6 will REV motor instantly ; During running, closing X6 will shut down motor instantly | |

| | | | |
|---|---|---|---|
| | | | |
| Pr. 031 | Multi-function input terminal setting (Multi-function input 1) | d0000: Multiple speed command 1<br>d0001: Multiple speed command 2<br>d0002: Multiple speed command 3<br>d0003: Multiple speed command4<br>d0004: Jog Fwd command<br>d0005: Jog Rev command<br>d0006: External faulty reset<br>d0007: External fault, Closing operation failure<br>d0008: External Fault, Opening operation failure<br>d0009: Up command/frequency UP<br>d00010: Down command/Frequency down<br>d0011：Jog command, X5 determines direction<br>d0012：Counter function when pulse frequency is lower than 500HZ<br>d0013：Counter reset function, clear present data<br>d0014: Receive external sudden-stop signal, can reset automatic<br>d0015：0 start function timer, multi-function output action<br>d0016: X4 is the input terminal for A mode (always close)<br>d0017: AUTO RUN/PLC<br>d0018:PAUSE for PLC<br>d0019: PID is valid, connect junction, start PID<br>d0020:No function. Isolate the wrong operation from outside terminals.<br>d0021:Reserve<br>d0021: Reserve<br>d0022:Reserve<br>Notes: Do not set up several input terminals for JOG FWD or JOG REV contemporary ; several input terminals for JOG | d0000 |
| Pr. 032 | Multi-function input 2 | | d0001 |
| Pr. 033 | Multi-function input 3 | | d0002 |
| Pr. 034 | Multi-function input4 | | d0003 |

| | | | |
|---|---|---|---|
| Pr. 035 | Setting for output analogy frequency/current/voltage signal | d0000: Analog frequency meter ( 0 to Maximum Frequency )<br>d0001: Analog current meter ( 0 to 250% is associated with output current )<br>d0002: Analog voltage meter ( 0 to 250% is associated with output voltage ) | d0000 |
| Pr. 036 | Reserved | d000.1-d600.0s | d000.4 |
| Pr. 037 | Analog output gain setting | d0001-d200% | d0100 |
| Pr. 038 | Reserved | d0000-d0001 | d0000 |
| Pr. 039 | Random frequency setting | d000.0—d0120.0 Hz | d0120.0 |
| Pr. 040 | Set the delay time of relay | d000.0—d999.9S(when pr.040=0,the relay close.) | d000.0 |
| Pr. 041 | Selection the max. voltage for analogy frequency input | d00.00—d10.00 V(it's whenPr.000=1) | d10.00 |
| Pr. 042 | Selection the min. voltage for analogy frequency input | d00.00—d10.00 V(it's whenPr.000=1) | d00.00 |
| Pr. 043 | Set the rated speed for motor | d0000—d3000 | d1500 |
| Pr. 044 | Set the rated current for motor | d0030—d0120% | d0100 |
| Pr. 045 | Set the no load current for motor | d0000—d0099% | d0040 |
| Pr. 046 | Torque compensation setting | d0000—d0010 | d0000 |
| Pr. 047 | Set the torque gain at accelerating (whenPr.011=0) | d0010—d0200% | d0100 |
| Pr. 048 | Set the torque gain decelerating ((whenPr.011=0) | d0010—d0200% | d0100 |
| Pr. 049 | Set the output mode for multi-functional relay | d0000：get power at faulty, otherwise loss power<br>d0001：get power at running ,otherwise loss power<br>d0002：get power at specified frequency ,otherwise loss power<br>d0003：get power at random frequency, otherwise loss power<br>d0004：get power at specified counter, otherwise loss power<br>d0005：low voltage attained<br>d0006：over voltage attained<br>d0007：over current attained<br>d0008：non-zero speed attained<br>d0009：DC current braking attained<br>d0010：over torque attained<br>d0011: external failure attained<br>d0012: FWD attained<br>d0013: REV attained | d0000 |

| | | | | |
|---|---|---|---|---|
| | | | | |
| Pr. 050 | Setting for action of electronic thermal relay | | d0000: Active with standard motor<br>d0001: Active with special motor<br>d0002: Inactive | d0002 |
| Pr. 051 | Setting for the time of action from electronic thermal relay | | d0030—d0300 s | d0060 |
| Pr. 052 | Over-torque detection setting | Over-torque detection function setting | d0000: Over-torque no detection | d0000 |
| | | | d0001: Constant speed operation, operation halted after over-torque | |
| | | | d0002: Constant speed operation, operation continues after over-torque detection | |
| | | | d0003: Operation halted after over-torque detection | |
| | | | d0004: Operation continues after over-torque detection | |
| Pr. 053 | | Over-torque detection | d0030—d0200% | d0150 |
| Pr. 054 | | Over-torque detection time | d000.1—d010.0 s | d000.1 |
| Pr. 055 | Energy brake setting | | d0001—d9999 | d0000 |
| Pr. 056 | Count attained setting | Count attained setting | d0001—d9999 | d0000 |
| Pr. 057 | Function display | Output physical setting | d0000: Displays the actual operating freq. (H)<br><br>d0001：Displays the actual operating running speed (H)<br><br>d0002： display the user defined setting（V）<br>d0003： display the value of the internal counter（C） | d0000 |
| | | | | |
| | | | | |
| | | | | |
| Pr. 058 | Proportionality constant setting | | d000.1—d200.0 | d001.0 |
| Pr. 059 | Skip frequency setting, Skip Frequency 1 | | d000.0—d120.0 Hz | d000.0 |
| Pr. 060 | Skip frequency setting, Skip Frequency 2 | | d000.0—d120.0 Hz | d000.0 |
| Pr. 061 | Skip frequency setting, Skip Frequency 3 | | d000.0—d120.0 Hz | d000.0 |
| Pr. 062 | Skip Frequency band | | d000.1—d020.0 Hz | d000.1 |

| | | | | |
|---|---|---|---|---|
| Pr. 063 | PWM Frequency setting | | d0000： FPWM=2.9KHz,<br>d0001： FPWM=5.8KHz | d0000 |
| Pr. 064 | Auto reset after fault | | d0000—d0010 | d0000 |
| Pr. 065 | First fault record | d0000: Fault records clear (No errors occurred ) | | d0000 |
| | | d0001: Over-current (oc) | | |
| | | d0002: Over-voltage (ov) | | |
| | | d0003: Overheat (oH) | | |
| | | d0004: Overload (oL) | | |
| | | d0005: Overload 1 (oL1) | | |
| | | d0006: External fault (EF) | | |
| | | d0007: CPU failure 1 (CF1) | | |
| | | d0008: CPU Failure 3 (CF3) | | |
| | | d0009: Hardware protection failure (HPF) | | |
| | | d0010: O.C. during acceleration (ocA) | | |
| | | d0011: O.C. during deceleration (ocd) | | |
| | | d0012: O.C. during steady state operation (ocn) | | |
| | | d0013: Ground fault or fuse failure (GFF) | | |
| | | d0014-16: Reserved for manufacture diagnosis | | |
| | | d0017: External base block (bb) | | |
| | | d0018: Overload 2 (oL2) | | |
| | | d0019-20: Reserved for manufacture diagnosis | | |
| Pr. 066 | Second fault record | | | d0000 |
| Pr. 067 | Third fault record | | | d0000 |
| Pr. 068 | Parameter lock / restore setting | d0000: parameters can be written and read (need 5 to 10 minutes to reset) | | d0000 |
| | | d0001: parameters are read only | | |
| | | d0002-d0009: Reserved<br>d0010:Restore HQM when Pr.68 = 10<br>d0011: Reserved<br>d0012: Reserved | | |
| | | d0019:General modes (need 5-10s to restore) | | |
| Pr. 069 | Baud rate | | d0000—d0016 | d0002 |
| Pr. 070 | Contact address | | d0000—d0031 | d00001 |
| Pr. 071 | Exclusive mode | | d0000 HQM model<br>d0001 ZS model<br>d0002 MD model<br>d0003-d0004 reserved<br>d0009 general model | d0000 |
| Pr. 072 | AVR output function select | | d0000: disable | d0001 |
| | | | d0001: enable | |
| Pr. 073 | Acceleration time 1 | | d000.1—d99.99 s | d00.02 |

| | | | |
|---|---|---|---|
| Pr. 074 | Deceleration time 1 | d00.01—d99.99 s | d00.02 |
| Pr. 075 | Acceleration time 2 | d00.01—d99.99 s | d00.02 |
| Pr. 076 | Deceleration time 2 | d00.01—d99.99 s | d00.02 |
| Pr. 077 | Acceleration time 3 | d00.01—d99.99 s | d00.02 |
| Pr. 078 | Deceleration time 3 | d00.01—d99.99 s | d00.02 |
| Pr. 079 | Acceleration time 4 | d00.01—d99.99 s | d00.02 |
| Pr. 080 | Deceleration time 4 | d00.01—d99.99 s | d00.02 |
| Pr. 081 | Acceleration time 5 | d00.01—d99.99 s | d00.02 |
| Pr. 082 | Deceleration time 5 | d00.01—d99.99 s | d00.02 |
| Pr. 083 | Acceleration time 6 | d00.01—d99.99 s | d00.02 |
| Pr. 084 | Deceleration time 6 | d00.01—d99.99 s | d00.02 |
| Pr. 085 | Acceleration time 7 | d00.01—d99.99 s | d00.02 |
| Pr. 086 | Deceleration time 7 | d00.01—d99.99 s | d00.02 |
| Pr. 087 | Acceleration time 8 | d00.01—dd99.99 s | d00.02 |
| Pr. 088 | Deceleration time 8 | d00.01—d99.99 s | d00.02 |
| Pr. 089 | Acceleration time 9 | d00.01—d99.99 s | d00.02 |
| Pr. 090 | Deceleration time 9 | d00.01—d99.99 s | d00.02 |
| Pr. 091 | Acceleration time 10 | d00.01—d99.99 s | d00.02 |
| Pr. 092 | Deceleration time 10 | d00.01—d99.99 s | d00.02 |
| Pr. 093 | Acceleration time 11 | d00.01—d99.99 s | d00.02 |
| Pr. 094 | Deceleration time 11 | d00.01—d99.99 s | d00.02 |
| Pr. 095 | Acceleration time 12 | d00.01—d99.99 s | d00.02 |
| Pr. 096 | Deceleration time 12 | d00.01—d99.99 s | d00.02 |
| Pr. 097 | Acceleration time 13 | d00.01—d99.99 s | d00.02 |
| Pr. 098 | Deceleration time 13 | d00.01—d99.99 s | d00.02 |
| Pr. 099 | Acceleration time 14 | d00.01—d99.99 s | d00.02 |
| Pr. 100 | Deceleration time 14 | d00.01—d99.99 s | d00.02 |
| Pr. 101 | Acceleration time 15 | d00.01—d99.99 s | d00.02 |
| Pr. 102 | Deceleration time 15 | d00.01—d99.99 s | d00.02 |
| Pr. 103 | Acceleration time 16 | d00.01—d99.99 s | d00.02 |
| Pr. 104 | Deceleration time 16 | d00.01—d99.99 s | d00.02 |
| Pr. 105 | Frequency setting 2 | d000.1—d120.0Hz | d045.0 |
| Pr. 106 | Frequency setting 3 | d000.1—d120.0Hz | d040.0 |
| Pr. 107 | Frequency setting 4 | d000.1—d120.0Hz | d035.0 |
| Pr. 108 | Frequency setting 5 | d000.1—d120.0Hz | d030.0 |
| Pr. 109 | Frequency setting 6 | d000.1—d120.0Hz | d025.0 |
| Pr. 110 | Frequency setting 7 | d000.1—d120.0Hz | d020.0 |
| Pr. 111 | Frequency setting 8 | d000.1—d120.0Hz | d015.0 |
| Pr. 112 | Frequency setting 9 | d000.1—d120.0Hz | d015.0 |
| Pr. 113 | Frequency setting 10 | d000.1—d120.0Hz | d020.0 |
| Pr. 114 | Frequency setting 11 | d000.1—d120.0Hz | d025.0 |

| | | | |
|---|---|---|---|
| Pr. 115 | Frequency setting 12 | d000.1—d120.0Hz | d030.0 |
| Pr. 116 | Frequency setting 13 | d000.1—d120.0Hz | d035.0 |
| Pr. 117 | Frequency setting 14 | d000.1—d120.0Hz | d040.0 |
| Pr. 118 | Frequency setting 15 | d000.1—d120.0Hz | d045.0 |
| Pr. 119 | Frequency setting 16 | d000.1—d120.0Hz | d050.0 |
| Pr. 120 | Setting for RS485 communication data checking | d0000: ASCII(8,N,1)<br>d0001: ASCII(8,N,2)<br>d0002: ASCII(8,E,1)<br>d0003: ASCII(8,E,2)<br>d0004: ASCII(8,0,1)<br>d0005: ASCII(8,0,2)<br>d0006: RTU(8,N,2)<br>d0007:RTU(8,E.1)<br>d0008:RTU(8,0,1) | dxxx.x |
| Pr. 121 | Software version | Read only | dxxx.x |
| Pr. 122 | Produce date | Read only | dxxx.x |
| Pr. 123 | Self test | d0000—d0002 | d0000 |
| Pr. 124 | Backup | | |
| | | | |
| Pr. 130 | **Set Pressure sensor range** | d00.00- -d10.00mpa | d01.0 |
| Pr. 131 | Target value of PID (MPa) | d00.00- -d10.00mpa | d00.4 |
| Pr. 132 | Proportional constant | d0000- -d0999 | d0015 |
| Pr. 133 | Integration time | d0000- -d0999 | d0999 |
| Pr. 134 | Differential time | d0000- -d0100 | d0000 |
| Pr. 135 | Source of PID target value | d0000: by Pr200<br>d0001:by external analog(0-10V) | d0000 |
| Pr. 136 | PID upper limit | d0000:- -d0100% | d0100 |
| Pr. 137 | PID lower limit | d0000:- -d0100% | d0000 |
| Pr. 138 | Pressure level on shutdown | d0000:- -d0100% | d0095 |
| Pr. 139 | Continuing time for pressure level on shutdown | d0000:- -d1000 | d0030 |
| Pr. 140 | Wake-up level | d0001- - d0150% | d0080 |
| Pr. 141 | Sleep rates | d000.1- -d100.0Hz | d020.0 |
| Pr. 142 | Continuing time for sleep rates | d000.1- -d900.0s | d020.0 |
| Pr. 143 | running time for inverter at max. frequency | d000.1- -d900.0s | d060.0 |
| Pr. 144 | The lock time for power frequency and conversion frequency | d000.1- -d900.0s | d003.0 |
| Pr. 145 | Power frequency running time | d000.1- -d900.0s | d060.0 |
| Pr. 147 | Frequency conversion | d0000:work in frequency conversion only<br>d0001:with power frequency | d0000 |
| Pr. 148 | | | |

| | | | |
|---|---|---|---|
| Pr. 149 | | | |
| Pr. 150 | | | |
| Pr. 151 | | | |
| Pr. 152 | | | |
| Pr. 153 | AUTO PLC | d0000: internal PLC invalid<br>d0001:program operation stop after 1 week<br>d0002:cycle operation<br>d0003:Auto operation stop after 1 week<br>d0004:Auto and cycle operation | d0000 |
| Pr. 153 | PLC direction(internal 10 speed modes,0 refers FWD 1refers REV first speed is the lowest level , 1000000000 refers the 10th speed is REV ,other speed is FWD | d0000- -d1023 | d0000 |
| Pr. 154 | AUTO PLC memory function (this data determines the pause function) | d0000:no memory<br>d0001:memory | d0000 |
| Pr. 155 | Timer 1 | d000.0- -d999.9 | d000.0 |
| Pr. 156 | Timer 2 | d000.0- -d999.9 | d000.0 |
| Pr. 157 | Timer 3 | d000.0- -d999.9 | d000.0 |
| Pr. 158 | Timer 4 | d000.0- -d999.9 | d000.0 |
| Pr. 159 | Timer 5 | d000.0- -d999.9 | d000.0 |
| Pr. 160 | Timer 6 | d000.0- -d999.9 | d000.0 |
| Pr. 161 | Timer 7 | d000.0- -d999.9 | d000.0 |
| Pr. 162 | Timer 8 | d000.0- -d999.9 | d000.0 |
| Pr. 163 | Timer 9 | d000.0- -d999.9 | d000.0 |
| Pr. 164 | Timer 10 | d000.0- -d999.9 | d000.0 |

## 七、Troubleshooting and Fault Information

| Fault code | Error and solution |
|---|---|
| **Er. 0** | Input voltage is lower than 150VAC .<br>Please ensure the working voltage is 150VAC-280VAC |
| **Er. 1** | Input voltage is over than 280VAC.<br>Please ensure the working voltage is 150VAC-280VAC |
| **Er. 2** | motor is over current. The motor is short circuit or overload ,otherwise need to repair |
| **Er. 3** | PWM circuit error, should power off for one minute. Then restart motor, if same error appears ,please repair the inverter |

| | |
|---|---|
| **Er. 4** | IPM failure reasons:<br>1. Low Gate drive voltage, need repair<br>2. Over current, check the motor for short circuit or overload<br>3. Over hot, check the motor for short circuit or overload |
| **Er. 5** | Input signal is valid when external failure and motor is not working |
| **Er. 6** | Internal data storage error. Power off for 1 minute then restart motor. If same error appears ,need to repair. |
| **Er. 7** | Lifetime is finished. Please contact supplier |
| **Er. 8** | Over current at acceleration or deceleration. Please increase the deceleration time. Or change bigger power inverter. |
| **Er. 9** | Over current at running, machine is overload,please change bigger power inverter. |
| **Er. 10** | Communication code error. |
| **Er. 11** | Communication data error |
| **Er. 12** | Communication timeout |
| **Er. 13** | Communication calibration error |
| **No display ,power indicator flash** | 1. check input power, ensure the voltage is 150 to 250V AC, otherwise need to repair<br>2. internal power supply detection, need to repair. |
| **No display ,power indicator dark** | check input power, ensure the voltage is 150 to 250V AC, otherwise need to repair |

# Quality and Guarantee

Quality assurance in accordance with the following provisions:

6.1 12months warranty

6.2 Offer lifelong paid service

6.3 Below failures is not guaranteed

1. Improper operation or repair without permission
2. Man-made damage
3. Aging or failure caused by bad environment Or natural disasters.
4. damage during transportation.
5. trademark or label is damaged

Appendix: Standard specifications

| Item | | specification |
|---|---|---|
| Input | Rated voltage ,<br>frequency range | Single phase:220V 50/60Hz<br>triphase:380V 50/60Hz<br>Voltage: ±25V loss balance :<5%<br>Frequency: ±5Hz |
| Output | Rated voltage ,<br>frequency over load | 0～input voltage<br>0.01Hz- 400Hz<br>150% rated current for 60s |
| Main control function | Modulation Mode<br>control mode<br>Frequency accuracy<br>frequency resolution<br>Slip compensation<br>Torque compensation<br>Acceleration time<br>Deceleration time<br>AVR function | SVPWM<br>V/F control , free V/F control<br>0.01Hz<br>Digital setting: 0.01Hz<br>Simulation Setting : Max. frequency *0.1%<br>Slip compensation range : 0% - 10%<br>Two kinds of curves: Straight lines and arbitrary S curve<br>Output voltage at rated frequency |
| function of motion | Give operation command<br>frequency setting<br>input signal<br>output signal | Panel given; external terminals give ;485 communication given<br>Panel given; analogy voltage given ; analogy current input given ; external acceleration and deceleration given ; 485 communication given<br><br>FWD /REV command ; Multistep speed control; operating command; Error input ; reset command<br>Error alarm out( 250V/ 2A ) |
| Display | Five digital display | Display frequency; output frequency; output current; input voltage; motor speed; Load linear velocity |
| working condition | Place<br>ALT<br>Environmental temperature<br>Humidity<br>Vibration<br>Storage temperature | Interior: no direct sunlight ; no dust, no corrosive gas ,oil mist ,salt ,drip , vapour<br>Lower than 1000m<br>-10℃ ～ +40℃<br>20% ～90% RH, No condensation<br>Less than 5.9m/s2<br>-20℃ ～ 60℃ |
| Structure | IP rank<br>Cooling method | IP20<br>forced cooling, natural cooling |
| | | |
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