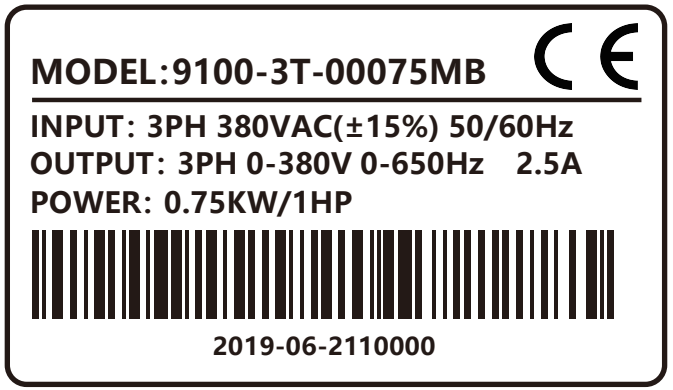
9100 series
High performance vector frequency inverter
Product instructions

CONTENTS

▶9100 series vector frequency inverter instructions

Chapter 1:Description of model



9100-3T-00075 M B

Product Series:
9000 series
9100 series
9600 series

Input Voltage:
1T: 220VAC Single Phase
2T: 220VAC Three Phase
3T: 380VAC Three Phase
1T3: 220VAC Single Phase Input And 380VAC Three Phase Output

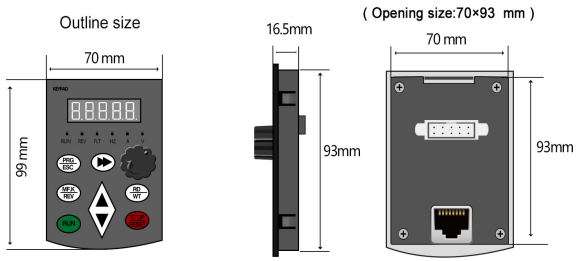
Capacity of frequency inverter
00075-63000
Representation 000.00KW
For example 00075 Means 0.75KW
00750 Means 7.5KW
07500 Means 75KW
63000 Means 630KW

G:General Type
M:Mini Type
H:Medium-frequency Type
P:Fan/pump Type
K:In jecting Air Compressor Type
Z:In jecting Molding Machine Type
D:Photovoltaic type

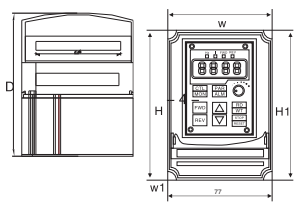
B: built-iaan brake unit
None: no brake unit

Chapter 2:Outline drawings and dimensions

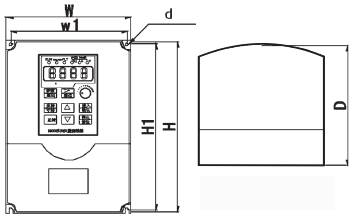
2.1 Small keyboard and mounting holes



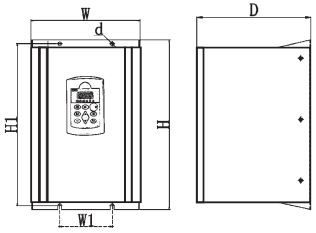
2.2 Outline drawings of products



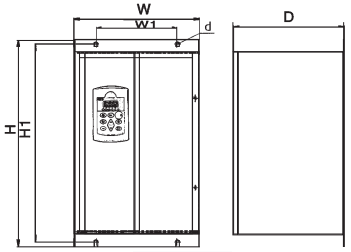
220V 0.4-1.5KW



220V 0.75KW-5.5KW
380V 0.75KW-11KW



380V 15KW-22KW



380V 30KW-187KW

2.3 Product outline dimension and installation hole position size list

Inverter Type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)
9100-1T-00075M	82	70	155	140	135
9100-1T-00150M					
9100-1T-00220M	82	70	155	140	145
9100-3T-00075M	82	70	155	140	135
9100-3T-00150M					
9100-3T-00220M					
9100-3T-00400M	82	70	155	140	145
9100-1T3-00075G	126	112	170	157	160
9100-1T3-00150G					
9100-1T3-00220G					
9100-1T3-00400G					
9100-1T3-00550G	126	112	170	157	170
9100-1T3-00750G	150	134	220	205	175
9100-1T3-01100G					
9100-1T3-01500G	222	108	353	335	220
9100-1T3-01850G					
9100-1T3-02200G					
9100-1T3-03000G	388	225	465	442	240
9100-1T3-03700G					
9100-1T3-04500G					
9100-1T-00075D	126	112	170	157	160
9100-1T-00150D					
9100-1T-00220D					
9100-1T-00400D	126	112	170	157	170
9100-1T-00550D	150	134	220	205	175
9100-1T-00750D	222	108	353	335	220
9100-1T-01100D					
9100-1T-01500D	388	225	465	442	240
9100-1T-01850D					
9100-1T-02200D					
9100-3T-00075D	126	112	170	157	160
9100-3T-00150D					
9100-3T-00220D					
9100-3T-00400D					
9100-3T-00550D	126	112	170	157	170
9100-3T-00750D	150	134	220	205	175
9100-3T-01100D					
9100-3T-01500D	222	108	353	335	220
9100-3T-01850D					
9100-3T-02200D					
9100-3T-03000D	388	225	465	442	240
9100-3T-03700D					
9100-3T-04500D					

Note:other models of product dimensions can refer to the above products.

Chapter 3:Technology standard and selection

3.1 Explanation of 9100 series technical parameter

● Input and output characteristics

Input voltage range: 380 / 220V ± 15%

Input frequency range: 47 ~ 63Hz

Output voltage range: 0 ~ rated input voltage

Output frequency range: 0 ~ 650Hz

● Peripheral interface features

Programmable digital input: 4 inputs

Programmable analog input: AI1: 0 ~ 10V input, AI2: 0 ~ + 5V or panel potentiometer input

Open collector output: 1 output

Relay output: 1 output

Analog output: 1 output, optional 4 ~ 20mA or 0 ~ 10V

● Technical performance characteristics

Control: PG-free vector control, V / F control

Overload capacity: 150% rated current 60s; 180% rated current 10s

Starting torque: without PG vector control: 0.5Hz / 150% (SVC)

Speed ratio: no PG vector control: 1: 100

Speed control accuracy: PG vector control: ± 0.5% of the maximum speed

Carrier frequency: 0.5k ~ 15.0kHz

● Features

Frequency setting mode: digital setting, analog setting, serial communication setting, multi-speed, PID setting.

PID control function

Multi-speed control function: 8-speed control

Swing frequency control function

Instantaneous power outage without stopping function

REV / JOG key function: user-defined multi-function shortcut keys

Automatic voltage adjustment function: When the grid voltage changes, the output voltage can be automatically maintained constant

Provide up to 25 kinds of fault protection: over-current, over voltage, under voltage, over temperature, phase loss, overload and other protection.

3.2 Frequency inverter selection table

Voltage(V)	220V	220V	380V	460V	575V	660V
	(1F)	(240V)	(415V)	(440V)		
Power(KW)	Current(A)	Current(A)	Current(A)	Current(A)	Current(A)	Current(A)
0.4	2.5	2.5				
0.75	4	4	2.5	2.5		
1.5	7	7	3.7	3.7		
2.2	10	10	5	5		
4	16	16	8.5	8		
5.5	20	20	13	11		
7.5	30	30	16	15		
11	42	42	25	22	17	15
15	55	55	32	27	22	18
18.5	70	70	38	34	26	22
22	80	80	45	40	33	28
30	110	110	60	55	41	35
37		130	75	65	52	45
45		160	90	80	62	52
55		200	110	100	76	63
75		260	150	130	104	86
83		320	170	147	117	98
110		380	210	180	145	121
132		420	250	216	173	150
160		550	300	259	207	175
187		600	340	300	230	198
200		660	380	328	263	218
220		720	415	358	287	240
250			470	400	325	270
280			520	449	360	330
315			600	516	415	345
375			680	600	450	390
400			750	650	520	430
450			820	720	650	465
500			900	800	700	550
560			1000	900	780	590
630			1100	1000	850	680

Note:
The common inverter, also called constant torque converter.Overload current 1.5 times of 1 minute,2 times the current instantaneous protection;Fan and water pump inverter also called load inverter,overload current 1.2 times 1 minutes, 1.5 times the current instantaneous protection;When we chooce the type of inverter,the general smaller level is of fan and water pump type.But considering the safety,we recommendations of fan and water pump also try to use common type,in order to avoid overload protection to affect production.

3.3 Guide for selection of brake components

Introduction for selection brake assemblies Under the table to guide the data, the user can choose according to the actual situation of different resistance and power,resistance must not be less than table recommended values,but the power can be enlarged,the selection of braking resistor need according to the power of motor power of the practical application of the system to determine,and system inertia,deceleration time and potential energy load energy.

Resistance selec0tion

When braking,the regenerative energy of the motor is almost completely consumed on the braking resistance.

According to the formula:U*U/R=Pb

◆The U in the formula-brake voltage of the system stable brake
(different systems are not the same,for the general choice of 380V AC system 700V)
◆Pb---brake power

Power selection of brake resistance

In theory,the braking resistance is in agreement with the power and braking power,but the reduction is 70%.According to the formula:0.7*Pr=Pb*D

◆Pr-----power of the resistance
◆D-----brake frequency
(the regeneration process accounts for the proportion of the entire working process)

▶Elevator----20%~30% ▶Winding or unwinding machine----20%~30%
▶Centrifuge----50%~60% ▶Accidental braking load----5% ▶General take 10%

Table for selection brake assemblies

Voltage(V)	Power	Resistance(Ω)	Capacity(w)	Remarks
220	0.4KW	200	80	When ordering, the built-in braking unit can be customized.
	0.75KW	200	80	
	1.5KW	100	150	
	2.2KW	60	250	
	3.7KW	40	300	
	5.5KW	30	500	
380	0.75KW	360	200	
	1.5KW	180	400	
	2.2KW	180	400	
	3.7KW	100	500	
	5.5KW	100	500	
	7.5KW	50	1000	
	11KW	50	1000	
	15KW	40	1500	
	18.5KW	40	1500	
	22KW	30	3000	
	30KW	20	5000	
	37KW	20	5000	
	45KW	15	9600	
	55KW	15	10000	

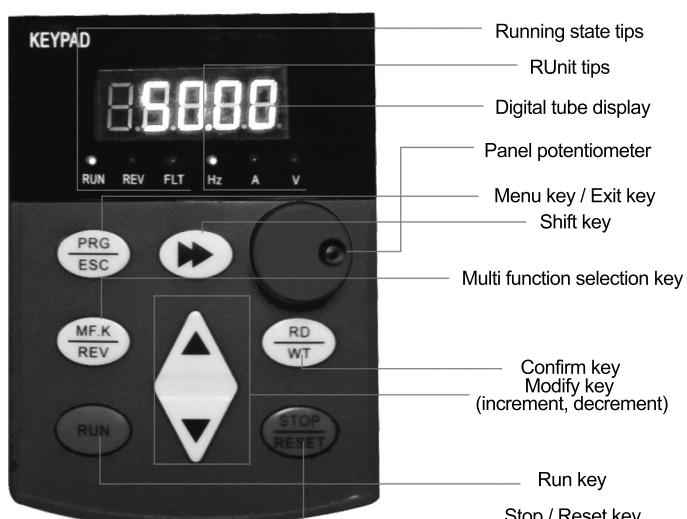
Voltage(V)	Power	Resistance(Ω)	Capacity(w)	Remarks
380	75KW	10	12000	When ordering, the built-in braking unit can be customized.
	93KW	8	20000	
	110KW	8	20000	
	132KW	6	25000	
	160KW	6	25000	
The discharge period is defined as 10%				

Remarks:

- Brake assembly be used in the consumption of certain potential large inertia load to the inverter feedback energy,avoid the cause of converter tripping over high voltage.Suitable for Large inertia load and frequent braking or fast parking.
- The discharge resistance is not directly connected to the N/P terminal,if the the terminal is P/N, must be add additional to the brake discharge module.If you need to use P/N terminal on 93KW above,please declare in order.4

Chapter 4:Operation panel instructions

4.1 Operation panel diagram and key description



4.2 The explanation of function keys

PRG/ESC	Programming key	First level menu to enter or exit.
RD/WT	Readout/writein key	For reading the parameter value or confirm the datas write-in effectly.
▲	Increasing key	Increasing of datas or parameter code.
▼	Decreasing key	Decreasing of datas or parameter code.
RD/WT + REV/JOG	Combination	Under the outage display interface and operation interface, can be left Shift cycle display parameters choice, pay attention to the operation should be according to the first RD/WT button, and then press the REV/JOG
>/SHIFT	Stop/reset key	In the shutdown display interface and operation interface, can achieve right shift cycle to display parameters and can change the parameters in the selected position.
FWD	Running key	For controlling forward running of frequency inverter.
STOP/RESET	Stop/reset key	In the running state,press this key can be used to stop running.When alarm status,all control modes are available to reset the key operation. The function code P1.10 control.
REV/JOG	shortcut multifunctional key	The function be determined by the function code "P1.09" Zero: inching operation for dynamic key point 1: forward reversal switch for dynamic key point 2: clear set UP/DOWN Clean UP by setting UP/DOWN frequency values
FWD + STOP/RESET	Combination	FWD key and STOP/RST is pressed at the same time, inverter free downtime

4.3 Parameters set instructions

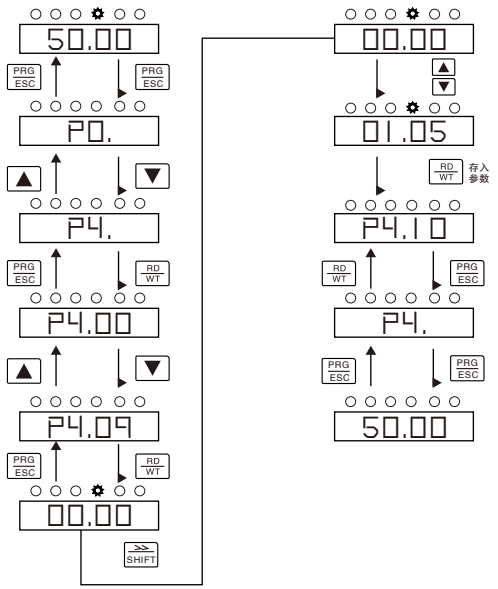
Level 3 menu, respectively

1. The function block (menu);
2. The function code label (secondary menu);
3. The function code set value (level 3) menu.

Description:In level 3 menu operation, according to these RPG/ESC or RD/WT key to return to the secondary menu. The difference between the two is: according to the RD/WT key will be deposited in the control panel set parameters, and then return to the secondary menu, and automatically move to the next function code; According to these RPG/ESC key is returned directly the secondary menu, not storage parameters, and keep stay in the current function code

Level 3 menu operation process diagram

Set the function code P4.09 from 0.00Hz to 1.05Hz



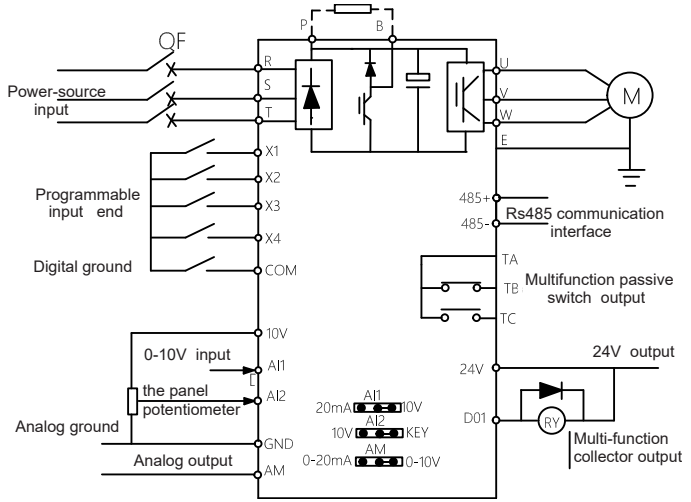
In level 3 menu state, if the parameter is not flashing, said the function code cannot be modified, possible reasons are:

(1) the function code as immutable parameters, such as the actual testing parameters, operation records parameters, etc.;

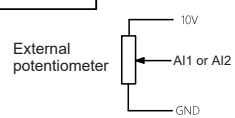
(2) the function code in the running state cannot be modified, only can be modified under stop status.

Chapter 5:Connection Diagram

The wiring diagram of 9100 series general type



When P0.01=1 or 2, the external potentiometer is selected for speed regulation, and the external potentiometer wiring diagram is as follows:

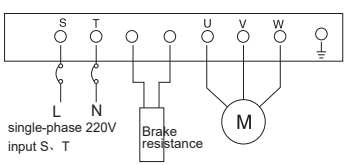


NOTE:

1. General type frequency converter only includes M-type and G-type;
2. The brake unit and RS485 communication function are optional functions. Please consult the manufacturer before purchase.
3. For solar PV VFD wiring diagram, please refer to chapter 9.2 operation examples;
4. For the wiring diagram of the 220V to 380V VFD, please refer to chapter 9.2 operation examples.

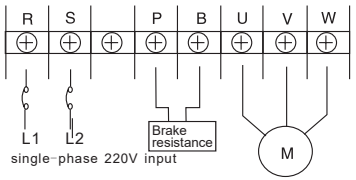
Chapter 6:Description of main loop terminal

6.1 Wiring diagram of M-type

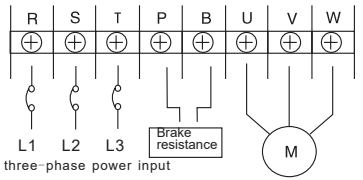


single-phase 220V 0.4-1.5KW

6.2 Wiring diagram of G-type 0.75-5.5KW

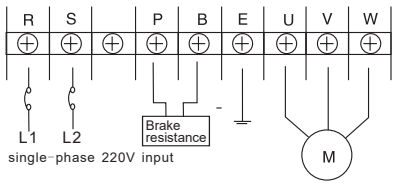


(single-phase 220V 0.75-4.0KW)

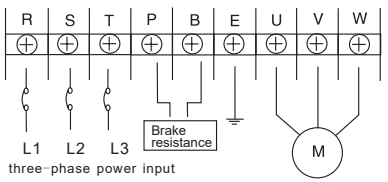


(three-phase 380V 0.75-5.5KW)
(three-phase 220V 0.75-4.0KW)

6.3 Wiring diagram of G-type 7.5-22KW

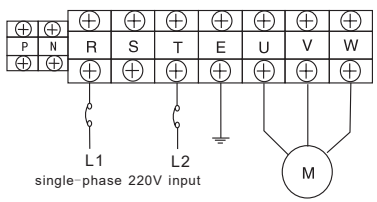


(single-phase 220V 5.5-11KW)

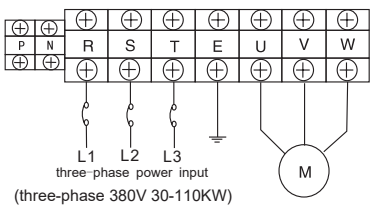


(three-phase 380V 7.5-22KW)
(three-phase 220V 5.5-11KW)

6.4 Wiring diagram of G-type 30-110KW

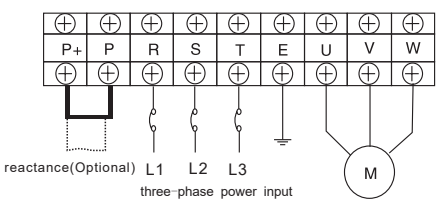


(single-phase 220V 15-75KW)



(three-phase 380V 30-110KW)
(three-phase 220V 15-75KW)

6.5 Wiring diagram of G-type 132-630KW



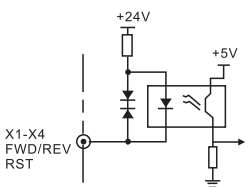
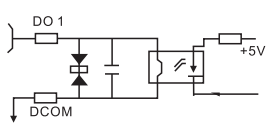
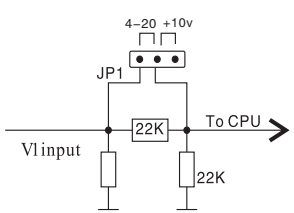
(three-phase 380V 132-630KW)

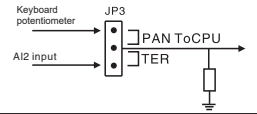
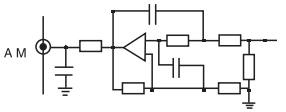
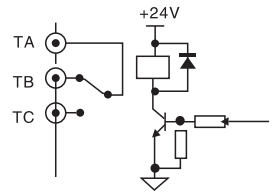
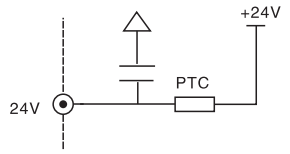
Note: other non-standard customized products, please in kind prevail mark

6.6 Identification of the main loop terminal

Terminal symbol	Function description
R、S、T	AC power input terminal, connected to three-phase 380V AC power supply
R、S、(T)	AC power input terminal, connected to single-phase 220V AC power supply
U、V、W	Frequency inverter output terminal, connected to three phase AC motor
P、P+	DC reactor connecting terminal, respectively, P and P+
P+、N	Brake unit connecting terminal, Positive and negative electrodes are connected to P+, N
P、B	External brake unit connecting terminal,respectively, P and B

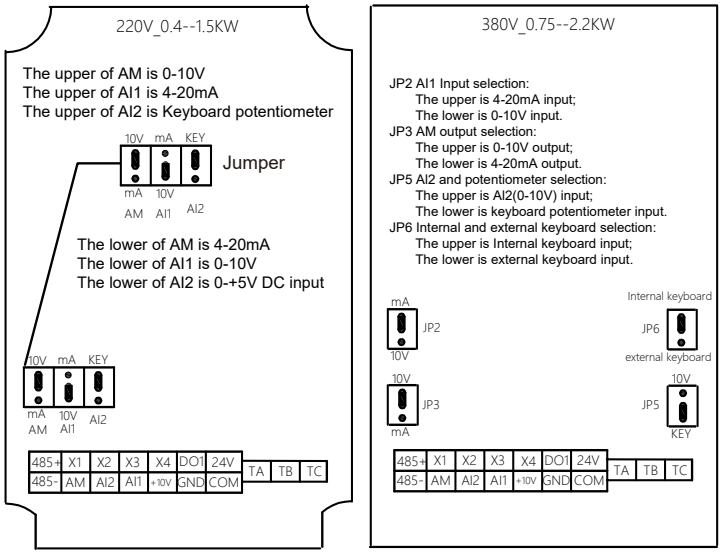
6.7 Function description of control loop terminal

Type	Terminal label	Function description	Electrical specifications	Internal circuit
Operation control terminal	X1/FWD	Forward when connect X1 to DOCM, deceleration then stop when disconnect the two	INPUT 0-24V level signal,Low level effective,5mA.	
	X2/REV	Reversal when connect X2 to DOCM, deceleration then stop when disconnect the two		
Multi function digital input terminal	X1	Be effective when connect (X1~X4) to DCOM,the function setting control by parameter P4.00-P4.05.	INPUT 0-24V level signal,Low level effective,5mA.	
	X2			
	X3			
	X4			
Digital input terminal	D01	Multi-function programmable analog voltage output.DO1 control by P3.10=0-13	OUTPUT,Maximum load current≤50mA	
Analog signal input and output terminal	AI 1	Analog signal input1, ground wire reference GND (default = 0V-10V)	Input optional 4-20mA or 0-10V voltage signal, selected by the jumper JP1.	

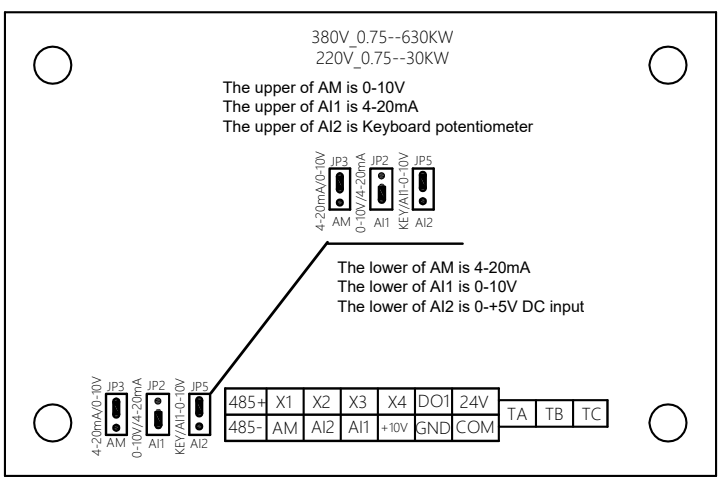
Type	Terminal label	Function description	Electrical specifications	Internal circuit
Analog signal input and output terminal	A I2	Analog signal input2, ground wire reference GND (default = Keyboard potentiometer)	Input optional 0-5V or Keyboard potentiometer, selected by the jumper JP3.	
	A M	Multi function programmable analog signal output, ground wire reference GND can choose 0-10V or 4-20mA.	Output optional 0-10V or 4-20mA signal, selected by the jumper AM.	
Relay input terminal	TA TB TC	TA and TB normal close output,TA and TC normal open output,control by P3.11=0-13.	Contact rating: 250VAC-3A 30VDC-1A.	
Power interface	24V	24V is a common power supply of digital input terminal circuit.	24VDC-100mA	
	COM	COM is the ground terminal of digital signal input and output terminals.		
	10V	10V power output,can be used as an external potentiometer for a given power.	Factory default settings:10VDC	
	GND	GND is the ground terminal of programmable system power supply.		

6.8 Schematic diagram of control loop terminal

6.8.1、9100 series 0.4-1.5KW



6.8.2、9100 series 2.2-630KW



Chapter 7:Function Code Table

7.1 Function parameters instruction

Function parameter of Frequency inverter use level 3 menu,such as “P8.08”express 8th function code of P8 groups function,PF is manufacturers function parameters,user have no right to access.To convenient set function code,when opearating panles,function groups correspond level 1 menu ,function number correspond level2 menu ,function code setting correspond level 3 menu.

1.Function chartcontent as follows：

Function groups：P0～PF group total 14 groups.

The first column“function code”：function parameters groups and the series number of parameter；

The second column “name”：the full name of function parameters；

The third column “parameter detailed instruction”：The detailed instruction of function parameter；

The forth column “default”：The original setting of function parameters；

The fifth column“change”：The change attribute（if allow to change or not and change condition），

2.Parameter system”is decimalism，if parameters use hexadecimal，every date is independent of each other when editing，the scope of some part can be hexadecimal（0～F）。

3.The default”is the value after function was refreshed when reset to factory setting ,but the actual value could’t be refreshed。

4.To effectively protect parameters，frequency inverter protected the function code，set user password（user password P1.32 not 0），when user press PROG to enter to edit function code status，the system will enter user password verifying status，express“0.0.0.0.0”，

User must input the correct password，or can’t enter，as for the factory settings，need input correct the original password（remind user，don't try to revise factory password，if set incorrect, easily lead to abnormal or damage）。You can modify the password before password protect haven’t locked,，User password will be subject to the last input values。

5.Using series communication function code,User passwords also follows as before.

7.2 Function Code Table

○--- The parameter can be modified when the AC drive is in either stop or running state.
◎---The parameter cannot be modified when the AC drive is in the running state.
●---The parameter is the actually measured value and cannot be modified.

Function Code	Parameter Name	Setting Range	Default	Property
GroupP0: Standard Function Parameters				
P0.00	Speed control mode	0: Vector control without PG 1: V/F control 2: Constant power control (Applies to version 2.1 and above.) 3: Synchronous motor （（Applies to version 2.2 and above.） 4: Vector control with PG	1	◎
P0.01	Frequency command selection	0: Keypad setting 1: Analog AI1 setting 2: Analog AI2 setting (Panel potentiometer setting) 3: AI1 + AI2 4: Max (AI1、AI2) 5: Multi-step running setting 6: PID control setting 7: Remote communication setting	0	○
P0.02	Run command channel	0:Keypad command channel (LED goes off) 1:Terminal command channel (LED flashes) 2:Communication command channel (LED lights up)	0	◎
P0.03	Keypad setting frequency	0.0Hz～P0.13（(upper operating frequency limit)）	50.00Hz	○
P0.04	Acceleration time 1	0.1～3600.0s	Model dependent	○
P0.05	Deceleration time 1	0.1～3600.0s	Model dependent	○
P0.06	Carrier frequency setting	1.5～15.0kHz	Model dependent	○
P0.07	V/F curve setting	0: Linear V/F 1: Square V/F 2: Reserved； 3: Reserved ； 4: Multi-point V/F	0	◎
P0.08	Torque boost	0.0%: （automatic）0.1%～30.0%	2.0%	○
P0.09	torque boost cutoff	0.0%～50.0%（corresponding to rated frequency of the motor）	50.0%	◎
P0.10	V/FSlip compensation limit point	0.0～200.0%	0.0%	○
P0.11	Running direction selection	0: Running in default direction 1: Running in opposite direction 2: Reverse running prohibited	0	◎
P0.12	Forward/Reverse rotation dead-zone time	0.0～3600.0s	1.0s	○
P0.13	Maximum output frequency	10.00～650.00Hz	50.00Hz	◎

Function Code	Parameter Name	Setting Range	Default	Property
P0.14	Upper operating frequency limit	P0.15～P0.13（maximum frequency）	50.00Hz	○
P0.15	Lower operating frequency limit	0.00Hz～P0.14（upper operating frequency limit)）	0.00Hz	○
P0.16	Frequency command selection	0: Keypad setting 1: Analog AI1 setting 2: Analog AI2 setting (Panel potentiometer setting) 3: AI1 + AI2 4: Max (AI1、AI2) 5: Multi-step running setting 6: PID control setting 7: Remote communication setting	0	○
P0.17	Run command channel 2	0:Keypad command channel (LED goes off) 1:Terminal command channel (LED flashes) 2:Communication command channel (LED lights up)	0	◎
P0.18	Multi-point V/F frequency3	P0.20～P0.14	0	◎
P0.19	Multi-point V/F voltage 3	P0.21～100%	0.0%	◎
P0.20	Multi-point V/F frequency 2	P0.22～P0.18	0	◎
P0.21	Multi-point V/F voltage 2	P0.23～P0.21	0.0%	◎
P0.22	Multi-point V/F frequency 1	0～P0.20	0	◎
P0.23	Multi-point V/F voltage 1	0～P0.21	0.0%	◎
P0.24	Run time delay	0—3600S	0	◎
Group P1 Auxiliary parameter group				
P1.00	AVR function selection	0: Invalid 1: Full-range enabled 2: Disabled upon deceleration	0	○
P1.01	Action judging voltage at instantaneous power failure	115.0～140.0% ((standard bus voltage)220V series 115.0～140.0% ((standard bus voltage)380V series	120.0% 130.0%	○
P1.02	Heatsink temperature	0～100.0° C	0	●
P1.03	inverter module temperature	0～100.0° C	19.4	●
P1.04	JOG running frequency	0.00～P0.13（maximum frequency）	5.00Hz	○
P1.05	JOG acceleration time	0.1～3600.0s	Model dependent	○
P1.06	JOG deceleration time	0.1～3600.0s	Model dependent	○
P1.07	Acceleration time 2	0.1～3600.0s	10s	○
P1.08	Deceleration time 2	0.1～3600.0s	10s	○
P1.09	Acceleration time 3	0.1～3600.0s	5s	○
P1.10	Deceleration time 3	0.1～3600.0s	10s	○
P1.11	Acceleration time 4	0.1～3600.0s	5s	○
P1.12	Deceleration time 4	0.1～3600.0s	10s	○
P1.13	Acceleration time 5	0.1～3600.0s	5s	○
P1.14	Deceleration time 5	0.1～3600.0s	10s	○
P1.15	Acceleration time 6	0.1～3600.0s	5s	○
P1.16	Deceleration time 6	0.1～3600.0s	10s	○
P1.17	Acceleration time 7	0.1～3600.0s	5s	○

Function Code	Parameter Name	Setting Range	Default	Property
P1.18	Deceleration time 7	0.1～3600.0s	10s	○
P1.19	Acceleration time 8	0.1～3600.0s	5s	○
P1.20	Deceleration time 8	0.1～3600.0s	10s	○
P1.21	REV/JOG function selection	0: JOG running 1: Reverse action 2: Clear UP/DOWN settings	1	◎
P1.22	STOP/RESET stop function selection	0: Valid only for panel control 1: Valid for panel and terminal control 2: Valid for panel and communication control 3: Valid for all control modes	0	◎
P1.23	Keypad and terminal UP/DOWN setting	0: Enabled, and stored upon inverter power-off 1: Enabled, and not stored upon inverter power-off 2: Invalid	0	○
P1.24	LED display stop parameter 1	0～FFFF BIT0: Running frequency BIT1: Set frequency BIT2: Bus voltage BIT3: Output voltage BIT4: Output current BIT5: Running speed BIT6: Output power BIT7: Output torque BIT8: PID setting changes BIT9: PID feedbacks BIT10: Input terminal status BIT11: Output terminal status BIT12: Analog AI1 value BIT13: Analog AI2 value BIT14: Current number of multi segment speed BIT15: Reserved	0013	○
P1.25	LED display running parameter 2	0～FFFF BIT0: Count value BIT1: Length value BIT2～BIT15: Reserved	0000	○
P1.26	LED display stop parameter	1～1FFF BIT0: Set frequency BIT1: Bus voltage BIT2: Input terminal status BIT3: Output terminal status BIT4: PID setting changes BIT5: PID feedbacks BIT6: Analog AI1 value BIT7: Analog AI2 value BIT8: Current number of multi segment speed BIT9: Torque setting value BIT10: Count value BIT11: Length value BIT12: Display speed value BIT13～ BIT15: Reserved	0043	○
P1.27	Reserved		0	○
P1.28	running time	0～9999(h)		●
P1.29	Functional parameter recovery	0: No operation 1: Recover default value 2: Clear fault files	0	◎

Function Code	Parameter Name	Setting Range	Default	Property
P1.30	Software version number	2: General 4: High frequency	2	●
P1.31	User password	0～9999	*****	●
P1.32	X1-X4 input terminal status	0000～1111	0000	○
P1.33	X5-X6 input terminal status	00～11	00	○
P1.34	DO1、DO2、TATBTC output terminal status	000～111	000	○
Group P2 Analog terminal parameters				
P2.00	Upper AI1 limit	0.00V～10.00V	10.00V	○
P2.01	Corresponding setting of upper AI1 limit	-100.0%～100.0%	100.0%	○
P2.02	Lower AI1 limit	0.00V～10.00V	0.00V	○
P2.03	Corresponding setting of lower AI1 limit	-100.0%～100.0%	0.0%	○
P2.04	AI1 input filter time	0.00s～10.00s	0.10s	○
P2.05	Upper AI2 limit	0.00V～10.00V	10.00V	○
P2.06	Corresponding setting of upper AI2 limit	-100.0%～100.0%	100.0%	○
P2.07	Lower AI2 limit	0.00V～10.00V	0.00V	○
P2.08	Corresponding setting of lower AI2 limit	-100.0%～100.0%	0.0%	○
P2.09	AI2 input filter time	0.00s～10.00s	0.10s	○
P2.10	AM function selection	0: Running frequency 1: Set frequency 2: Running speed 3: Output current 4: Output current 5: Output power 6: Output torque 7: Analog AI1 input value 8: Analog AI2 input value 9: 0-1000 bus voltage corresponding to 0-10V output 10: Reserved	00	○
P2.11	AM output upper limit	0.0%～100.0%	100.0%	○
P2.12	Upper limit corresponds to AM output	0.00V ～10.00V	10.00V	○
P2.13	AM lower output limit	0.0%～100.0%	0.0%	○
P2.14	Lower limit corresponds to AM output	0.00V ～10.00V	0.00V	○
P2.15	Output bus voltage reaches the upper limit voltage	0～1000V 220V system for 400V 380V system for 800V	800V	○
P2.16	Selection of the output bus voltage reaching set value	0: No action 1: Stop the output,resume to the set value,do not work. 2: Stop the output,resume to the set value,continue work.	0	○
P2.17	Output bus voltage reaches the lower limit voltage	0-1000V 220V system for 260V 380V system for 350V	0.00V	○

Function Code	Parameter Name	Setting Range	Default	Property
P2.18	Selection of the output bus voltage reaching set value	0: No action 1: Stop the output,resume to the set value,do not work. 2: Stop the output,resume to the set value,continue work.	0	○
Group P3 Digital terminal parameter group				
P3.00	Selection of terminal function detection on power up	0: Invalid command for terminal operation on power up 1: Valid command for terminal operation on power up	1	○
P3.01	X1 terminal function selection	0: No function 1: Forward running 2: Reverse running 3: 3-wire run control 4: Forward jogging 5: Reverse jogging 6: Free stop 7: Fault reset 8: External fault input 9: Frequency setting increment (UP) 10: Frequency setting decrement (DOWN) 11: Frequency increase/decrease setting clear 12: Multi-step speed terminal 1 13: Multi-step speed terminal 2 14: Multi-step speed terminal 3 15: Acceleration/deceleration time selection 1 16: Acceleration/deceleration time selection 2 17: Acceleration/deceleration time selection 3 18: PID control pause 19: Wobble frequency pause (stop at the current frequency) 20: Wobble frequency reset (return to center frequency) 21: Acceleration/deceleration disabled 22: Torque control disabled 23: The frequency Change settings temporarily removed 24: Command switchover 25: frequency switchover 26: Count input enable (Valid only for X3) 27: Count reset enable (Valid only for X3) 28: Length input enable (Valid only for X3) 29: Length reset enable (Valid only for X3) 30: Dormancy enable 31: PLC multi-reference Run pause enable	1	◎
P3.02	X2 terminal function selection		2（Default value）	◎
P3.03	X3 terminal function selection		0	◎
P3.04	X4 terminal function selection		26	◎
P3.05	X5 terminal function selection		0	○
P3.06	X6 terminal function selection		0	○
P3.07	Count of digital input filter	1～10	5	○
P3.08	Terminal control run mode	0: Two-wire control 1 1: Two-wire control 2 2: Three-wire control 1 3: Three-wire control 2	0	◎
P3.09	Terminal UP/DOWN Frequency increment change rate	0.01～50.00Hz/s	0.50Hz/s	○

Function Code	Parameter Name	Setting Range	Default	Property
P3.10	DO1 output function selection	0: No output 1: The motor is running forward 2: The motor is running reversely 3: Fault output 4: Frequency-level detection FDT output 5: Frequency reached 6: Zero-speed running 7: Frequency upper limit reached 8: Frequency lower limit reached 9: Non Zero run 10: Auxiliary pump 1 power-on 11: Auxiliary pump 1 off 12: Auxiliary pump 2 power-on 13: Auxiliary pump 2 off 14: Count value 1 reached 15: Count value 2 reached 16: Length 1 reached 17: Length 2 reached 18: Bus voltage reaches the upper limit voltage 19: Bus voltage reaches the lower limit voltage 20: Current comparator output 21: Pipeline leak identification output 22: Pipeline blockage identification output 23: Reserved	1	○
P3.11	Relay TA-TB-TC function		3	○
P3.12	DO2 output function selection（extend）		2	○
P3.13	FDT electrical level detection value	0.00～ P0.13(Maximum frequency)	50.00Hz	○
P3.14	FDT delay detection value	0.0～100.0%（FDT electrical level）	5.0%	○
P3.15	Detection range of frequency reache	0.0～100.0%(Maximum frequency)	0.0%	○
F3.16	Percentage of current comparator output	0.0～300.0%（Rated current）	0.0%	○
Group P4 Start stop parameter group				
P4.00	Stop mode	0: Decelerate to stop 1: Coast to stop	0	○
P4.01	Waiting time of stop braking	0.0～50.0s	0.0s	○
P4.02	Stop DC braking time	0.0～50.0s	0.0s	○
P4.03	Stop DC braking current	0.0～150.0%	0.0%	○
P4.04	Initial frequency of stop brakin	0.00～P0.13（Maximum frequency）	1.00Hz	○
P4.05	Start mode	0: Direct start 1: DC braking first and then start 2: Rotational speed tracking restart (5.5KW以上)	0	◎
P4.06	Startup frequency holding time	0.0～50.0s	0.0s	○
P4.07	Startup frequency holding time	0.0～50.0s	0.0s	○
P4.08	Startup DC braking current/ Pre-excited curren	0.0～150.0%	0.0%	○
P4.09	Startup frequency	0.00～10.00Hz	0.00Hz	○

Function Code	Parameter Name	Setting Range	Default	Property
P4.10	Jump frequency	0.00～P0.13（Maximum frequency）	0.00Hz	○
P4.11	Frequency jump amplitude	0.00～P0.13（Maximum frequency）	0.00Hz	○
P4.12	Ramp mode	0: Straight-line ramp 1: S-curve ramp	0	○
Group P5 Swing Frequency parameter group				
P5.00	Swing frequency enable	0: Disable 1: enable	0	○
P5.01	Jump frequency amplitude	0.0～50.0%（Relative swing frequency amplitude）	0.0%	○
P5.02	Swing frequency amplitude	0.0～100.0%（Relative setting frequency）	0.0%	○
P5.03	Swing frequency up time	0.1～3600.0s	10.0s	○
P5.04	Swing frequency down time	0.1～3600.0s	10.0s	○
P5.05	meter-count mode	0: Start meter-counting from 0 when power-on 1: Start meter-counting from power down save value	0	○
P5.06	Bidirectional meter-count	0:The motor stops When the reverse meter-count is 0. 1: The motor runs when the reverse meter-count is 0.	0	○
P5.07	The number of pulses per meter	0-9999个（200 per second）	0	○
P5.08	Set detection value	0～9999	0.0	○
P5.09	Set detection value reached	0: invalid 1: Inverter speed down to P5.11 setting speed. Set detection value is less than meter-count set value 2	0	○
P5.10	Set detection value reached set frequency	0-650HZ	0	○
P5.11	Actual meter-count setting value	0～9999	0.0	○
P5.12	meter-count set value 2 reached	0: Motor stop. 1: Motor running.	0	○
P5.13	Display actual meter-count value	0M	0	○
P5.14	Unit of meter-count	1-100 1: Actual length= Display value* 1M 2: Actual length= Display value* 2M 3: Actual length= Display value* 2M N: Actual length= Display value* N	1	○
P5.15	Clear meter-count value	0～1	0	○
P5.16	Count mode	0: Start counting from 0 when power-on 1: Start counting from power down save value	0.0	○
P5.17	Set detection value	0-9999（The count setting detection value is less than the actual meter-count setting value）	0.0	○
P5.18	Set detection value reached	0: invalid 1: Set the detection value is reached, the inverter speed down to P5.19 set speed value	0	○
P5.19	Set detection value reached set frequency	0-650Hz	0.0	○
P5.20	Actual count setting value	0～9999	0.0	○
P5.21	Count set value 2 reached	0: Motor stop. 1: Motor running.	0	○

Function Code	Parameter Name	Setting Range	Default	Property
P5.22	Actual count value	0	0.0	○
P5.23	Clear count value	0: Do not clear 1: Clear	0	○
Group P6 Protection function parameter group				
P6.00	Overvoltage stall speed protection	0: protection disabled 1: protection enabled	0	○
P6.01	Overvoltage stall speed protection voltage	110～150%（380V series） 110～150%（220V series）	120.0% 115.0%	○
P6.02	Motor overload protection selection	0: Not protected 1: Common motor (with low-speed compensation) 2: Variable frequency motor (without low-speed compensation)	1	◎
P6.03	Motor overload protection current	20.0%～120.0%（rated current of the motor）	100.0%	○
P6.04	Automatic current limiting amplitude	100～200%	160.0%	○
P6.05	Frequency drop rate when current limiting	0.00～50.00Hz/s	10Hz/s	○
P6.06	Frequency decrease point upon instantaneous power failure	70.0～110.0%（(standard bus voltage）	80.0%	○
P6.07	Frequency decrease rate upon instantaneous power failure	0.00Hz～P0.13(maximum frequency)	0.00Hz	○
P6.08	Output phase failure protection	0: protection disabled 1: protection enabled	0	◎
P6.09	Type of previous two faults	0: Not fault 1: Phase U protection of inverter unit (OUT1) 2: Phase V protection of inverter unit (OUT2) 3: Phase W protection of inverter unit (OUT3) 4: Acceleration overcurrent (OC1) 5: Deceleration overcurrent (OC2) 6: Constant overcurrent (OC3) 7: Acceleration overvoltage (OV1) 8: Deceleration overvoltage (OV2) 9: Constant overvoltage (OV3) 10: Bus under-voltage fault (UV)	-	●
P6.10	Previous fault type	11: Motor overload (oL1) 12: Inverter overload (oL2) 13: Input phase failure (SPI) 14: Output phase failure (SP0) 15: Overheat fault of rectifier module (OH1) 16: Overheat fault of inverter module (OH2) 17: External fault (EF) 18: Communication fault (CE) 19: Current detection fault (ITE) 20: Motor self-learning fault (TE) 21: FEPROM operation fault (EEP)	-	●

Function Code	Parameter Name	Setting Range	Default	Property
P6.11	Current fault type	22: PID feedback disconnection fault (PIDE) 23: Brake unit fault (BCE) 24: Hardware over-current protection (OCH) 25: Pipeline leakage: LEA 26: Pipeline blockage: CHo	-	●
P6.12	Current fault run frequency		0.00Hz	●
P6.13	Current fault output current		0.0A	●
P6.14	Current fault bus voltage		0.0V	●
P6.15	Current fault input terminal state		0	●
P6.16	Current fault output terminal state		0	●
P6.17	Auto fault reset interval setting	0.1～100.0s	1.0s	○
P6.18	Number of automatic fault reset operations	0～10	0	○
Group P7 PID function parameter group				
P7.00	PID feedback source	0: AI1 1: AI2 2: AI1+AI2 3: Communication setting	0	○
P7.01	PID setting source	0: P7.02 1: AI1 2: AI2 3: Communication setting 4: Multi-reference 5: Keyboard up and down keys setting	0	○
P7.02	Keyboard preset PID setting	0.0%～100.0%	0.0%	70○
P7.03	PID output characteristic selection	0: PID output is positive 1: PID output is negative	0	○
P7.04	Proportional gain（Kp）	0.00～100.00	1.00	○
P7.05	Integral time（Ti）	0.01～10.00s	0.10s	○
P7.06	Differential time（Td）	0.00～10.00s	0.00s	○
P7.07	sampling period（T）	0.01～100.00s	0.10s	○
P7.08	PID deviation limit	0.0～100.0%	0.0%	○
P7.09	Detection value of PID feedback loss	0.0～100.0%	0.0%	○
P7.10	Detection time of PID feedback los	0.0～3600.0s	1.0s	○
P7.11	The number of auxiliary pump	0～2	0	○
P7.12	Wakeup pressure	0～100.0%	20.0%	○
P7.13	Dormant enable	0: OFF 1: ON	0	○
P7.14	Dormant pressure	0～100.0%	80.0%	○
P7.15	Dormant delay time	0.0～6000.0s	0.0	○
P7.16	Wakeup delay time	0.0～6000.0s	0.0	○
P7.17	range	0～100	10	○
P7.18	Range error	-30～30	0	○

Function Code	Parameter Name	Setting Range	Default	Property
P7.19	PID up and down keys setting value	0～P7.17	0	○
P7.20	The pressure of auxiliary pump 1 turn on	0~100.0%	0.0%	○
P7.21	The pressure of auxiliary pump 1 turn off	0~100.0%	0.0%	○
P7.22	The pressure of auxiliary pump 2 turn on	0~100.0%	0.0%	○
P7.23	The pressure of auxiliary pump 2 turn off	0~100.0%	0.0%	○
P7.24	Auxiliary pump 1 turn on delay time	0.0～6000.0s	0.0	○
P7.25	Auxiliary pump 1 turn off delay time	0.0～6000.0s	0.0	○
P7.26	Auxiliary pump 2 turn on delay time	0.0～6000.0s	0.0	○
P7.27	Auxiliary pump 2 turn off delay time	0.0～6000.0s	0.0	○
P7.28	Pipeline leakage Identification standard	0.0～6000.0s	0.0	○
P7.29	Pipeline blockage Identification standard	0.0～100.0%	0.0%	○
P7.30	Pipeline fault selection	0-2 0: No action 1: Stop 2: Fault alarm	0	○
Group P8 Multi-Reference parameter group				
P8.00	Multi-Reference mode	0: Setting frequency and direction 1: Only setting frequency , the direction is determined by the operating terminal	0	○
P8.01	Reference 0	-100.0～100.0%	0.0%	○
P8.02	Reference 1	-100.0～100.0%	0.0%	○
P8.03	Reference 2	-100.0～100.0%	0.0%	○
P8.04	Reference 3	-100.0～100.0%	0.0%	○
P8.05	Reference 4	-100.0～100.0%	0.0%	○
P8.06	Reference 5	-100.0～100.0%	0.0%	○
P8.07	Reference 6	-100.0～100.0%	0.0%	○
P8.08	Reference 7	-100.0～100.0%	0.0%	○
Group P9 RS485 communication parameter group				
P9.00	Local address	0: Broadcast address 1–247	1	○

Function Code	Parameter Name	Setting Range	Default	Property
P9.01	Baud rate	0: 1200bps 1: 2400bps 2: 4800bps 3: 9600bps 4: 19200bps 5: 38400bps	3	○
P9.02	Data bit check setting	0: No check (N , 8 , 1) for RTU 1: Even parity check (E , 8 , 1) for RTU 2: Odd parity check (O , 8 , 1) for RTU 3: No check (N , 8 , 2) for RTU 4: Even parity check (E , 8 , 2) for RTU 5: Odd parity check (O , 8 , 2) for RTU 6: No check (N , 7 , 1) for ASCII 7: Even parity check (E , 7 , 1) for ASCII 8: Odd parity check (O , 7 , 1) for ASCII 9: No check (N , 7 , 2) for ASCII 10: Even parity check (E , 7 , 2) for ASCII 11: Odd parity check (O , 7 , 2) for ASCII 12: No check (N , 8 , 1) for ASCII 13: Even parity check (E , 8 , 1) for ASCII 14: Odd parity check (O , 8 , 1) for ASCII 15: No check (N , 8 , 2) for ASCII 16: Even parity check (E , 8 , 2) for ASCII 17: Odd parity check (O , 8 , 2) for ASCII	0	○
P9.03	Response delay	0～200ms	5ms	○
P9.04	Communication time out	0.0（invalid），0.1～100.0s	0.0s	○
P9.05	Transmission error selection	0: Alarm and coast to stop 1: Do not alarm and continue to run 2: Do not alarm and stop by stop mode (Only under the control mode of communication) 3: Do not alarm and stop by stop mode (Under all control modes)	1	○
P9.06	Transmission response selectio	0: Write operations and respond 1: Write operation and no response	0	○
P9.07	Communication selection	0: Valid，DO2 and X5 X6 terminals are invalid 1: Invalid，DO2 and X5 X6 terminals are valid	0	◎
Group PA PLC control parameter group				
PA.00	PLC running mode	0: PLC function switch 1: Repeat after the AC drive runs one cycle 2: Stop after the AC drive runs one cycle 3: Keep final values after the AC drive runs one cycle	0	○
PA.01	PLC retentive selection	0: No 1: Yes	0	○
PA.02	Time unit of PLC running	0: s 1: min	0	○
PA.03	Running time of PLC reference 1	0～6000.0	2.0	○
PA.04	Running time of PLC reference 2	0～6000.0	2.0	○
PA.05	Running time of PLC reference 3	0～6000.0	2.0	○
PA.06	Running time of PLC reference 4	0～6000.0	2.0	○

Function Code	Parameter Name	Setting Range	Default	Property
PA.07	Running time of PLC reference 5	0～6000.0	2.0	○
PA.08	Running time of PLC reference 6	0～6000.0	2.0	○
PA.09	Running time of PLC reference 7	0～6000.0	2.0	○
PA.10	Running time of PLC reference 8	0～6000.0	2.0	○
PA.11	The program runs normally, and it is running again when it is suspended by the terminal	0: Pause at current speed and then run at the first reference speed 1: Pause at current speed and then run at the reference speed before the pause 2: Pause at 0 speed and then run at the first reference speed 3: Pause at 0 speed and then run at the reference speed before the pause	0	○
PA.12	Program running abnormal stop,automatic reset , then	0: Run at the first reference speed 1: Run at the reference speed before the pause	0	○
Group PB Motor parameter group				
PB.00	Motor Auto-tuning	0: No action 1: Complete auto-tuning 2: Static auto-tuning	0	◎
PB.01	Inverter type	0: G type 1: P type	Model dependent	◎
PB.02	Rated motor power	0.4～900.0kW	Model dependent	◎
PB.03	Rated motor frequency	0.01Hz～P0.13（Parameter must be reset）	50.00Hz	◎
PB.04	Rated motor rotational speed	0～36000rpm	Model dependent	◎
PB.05	Rated motor voltage	0～460V	Model dependent	◎
PB.06	Rated motor current	0.1～2000.0A	Model dependent	◎
PB.07	Stator resistance	0.001～65.535Ω	Model dependent	◎
PB.08	Rotor resistance	0.001～65.535Ω	Model dependent	◎
PB.09	Stator and rotor inductance	0.1～6553.5mH	Model dependent	◎
PB.10	Stator and rotor mutual inductance	0.1～6553.5mH	Model dependent	◎
PB.11	No-load current	0.01～655.35A	Model dependent	◎
PB.26	Speed gain coefficient	0-200%	0	◎
Group PC Vector control parameter group				
PC.00	Speed loop proportional gain 1	0～100	15	○
PC.01	Speed loop integral time 1	0.01～10.00s	2.00s	○

Function Code	Parameter Name	Setting Range	Default	Property
PC.02	Low switchover frequency	0.00Hz～F04.05	5.00Hz	○
PC.03	Speed loop proportional gain 2	0～100	10	○
PC.04	Speed loop integral time 2	0.01～10.00s	3.00	○
PC.05	High switchover frequency	PA.02～P0.13（Maximum frequency）	5.00Hz	○
PC.06	slip gain	50%～200%	100.0%	○
PC.07	Torque upper limit setting	0.0～200.0%（Rated current）	150.0%	○
PC.08	No-load current gain	0～9.999	0.5	○
PC.09	Oscillation suppression low frequency threshold	0～500	15	○
PC.10	Oscillation suppression high frequency threshold	0～500	15	○
PC.11	Oscillation suppression range value	0～100	20	○
PC.12	Oscillation suppression high and low frequency dividing frequency	0～400.00	12.5	○
PC.13	Torque setting source	0-6 0: Keyboard setting 1: AI1 2: AI2 3: AI1 + AI2 4: MAX (AI1, AI2) 5: Multi-reference setting 6: PID control setting 7: Communication setting 100% corresponds to 2 times the rated current	0	○
PC.14	Keyboard setting torque	-200%-200% （Rated current）	0	○
PC.15	Low speed torque gain	0.000-1.000	0.050	○
PC.16	High speed torque gain	0.000-1.000	0.000	○
PC.17	Oscillation suppression enable	0: Yes 1: No	1	○
PC.18	PWM mode	0～122	0	◎
Group PF Manufacturers function parameter group				
PF.00	Manufacturer password	0～65535	*****	◎
PF.01	Type selection	0: G type 1: P type	0	◎
PF.02	Inverter type	0～26 （Inverter power setting）	3	◎
PF.03	Inverter rated power	0.4～900.0	2.2	◎
PF.04	Inverter rated voltage	220V、380V	380	◎
PF.05	Inverter rated current	0.0～900.0	5.0	◎
PF.06	Dead-zone time	2.0～10.0	5.0	◎
PF.07	Program overvoltage	300～800	800	◎
PF.08	Program undervoltage	0～500	350	◎
PF.09	Program overcurrent	0.1～2000.0	10.0	◎
PF.10	Voltage regulation factor	0～10.00 （The displayed bus voltage is adjusted to be consistent with the actual）	1.00	◎

Function Code	Parameter Name	Setting Range	Default	Property
PF.11	Current regulation factor	0～10.00 （The displayed current is adjusted to be consistent with the actual）	1.00	◎
PF.12	Dead zone compensation factor	0～2.00 （Without adjustment）	1.00	◎
PF.13	IGBT over hotspot	0～120.0	85.0	◎
PF.14	reaction time	More than the reaction time will alarm and stop, set to 0 invalid	0	◎
PF.15	Overload protection	0: valid 1: invalid	0	◎
PF.16	All parameters restore factory value	Modified to any value, re - power, all parameters to restore, including the inverter manufacturers parameters PF group	5a5a	◎
PF.17	Reserved		0	◎

Chapter 8:Function Code Table

8.1 Function parameters instruction

Display	Fault Name	Possible Causes	Solutions
OUT1	Inverter unit protection	1.The acceleration time is too short. 2.The inverter module is faulty. 3.Misoperation by external interference caused 4.The output circuit is grounded	1. Increase the acceleration time. 2.Contact technical support 3.Check the peripheral equipment 4.Eliminate external faults
OC1	Overcurrent during acceleration	1.The acceleration time is too short. 2.The voltage is too low. 3.The AC drive model is of too small power class.	1. Increase the acceleration time. 2. Adjust the voltage to normal range. 3. Select an AC drive of higher power class.
OC2	Overcurrent during deceleration	1. The deceleration time is too short. 2.Large inertia load 3.The AC drive model is of too small power class.	1.Increase the deceleration time. 2. Install the braking unit and braking resistor. 3. Select an AC drive of higher power class.
OC3	Overcurrent at constant speed	1.A sudden load is added during operation. 2.The voltage is too low. 3.The AC drive model is of too small power class.	1. Remove the added load. 2. Adjust the voltage to normal range. 3. Select an AC drive of higher power class.
OV1	Overvoltage during acceleration	1.The input voltage is too high. 2.After the instantaneous power cut, the rotating motor is restarted	1.Adjust the voltage to normal range. 2. Avoid stop and restart
OV2	Overvoltage during deceleration	1.The deceleration time is too short. 2.Large inertia load 3.The input voltage is too high.	1.Increase the deceleration time. 2. Install the braking unit and braking resistor. 3.Adjust the voltage to normal range.

Display	Fault Name	Possible Causes	Solutions
OV3	Overvoltage at constant speed	1.The input voltage is too high. 2.An external force drives the motor during deceleration.	1. Adjust the voltage to normal range. 2.Cancel the external force or install the braking resistor.
UV	Undervoltage	The AC drive's input voltage is not within the allowable range.	Adjust the voltage to normal range.
Ol1	Motor overload	1.The input voltage is too low. 2.The motor rated current setting error 3.The load is too heavy or lockedrotor occurs on the motor. 4.Motor capacity does not match the capacity of the AC drive	1.Adjust the voltage to normal range. 2.Reset motor rated current 3.Reduce the load and check the motor and the mechanical condition. 4.Select the appropriate AC drive or motor
OL2	AC drive overload	1.The acceleration time is too short. 2.After the instantaneous power cut, the rotating motor is restarted 1.The input voltage is too low. 4.The load is too heavy	1. Increase the acceleration time. 2. Avoid stop and restart 1.Adjust the voltage to normal range. 4.Select an AC drive of higher power class.
SP1	Power input phase loss	The three-phase power input is abnormal.	Eliminate external faults.
SPO	Power output phase loss	1: The cable connecting the AC drive and the motor is faulty. 2: The AC drive's three-phase outputs are unbalanced when the motor is running.	1. Eliminate external faults. 2.Check whether the motor three-phase winding is normal.
OH1	Module overheat	1.AC drive instantaneous overheating 2Output three-phase with interphase or ground short circuit 3.The air filter is blocked. Or the fan is damaged. 4.The ambient temperature is too high.	1.Countermeasures for the reference of overcurrent fault 2.Rewiring 3.Clean the air filter.Or replace the damaged fan. 4. Lower the ambient temperature.

Display	Fault Name	Possible Causes	Solutions
OH2	The inverter module overheat	5.Control board connection or plug loose	5.Check and reconnect
		6.Auxiliary power supply damage, drive circuit undervoltage	6.Contact technical support
		7.The inverter module is damaged.	7.Contact technical support
		8.Control panel is abnormal	8.Contact technical support
EF	External equipment fault	External fault signal is input via X1	Reset the operation.
CE	Communication fault	1.Baud rate setting error	1.Set the correct baud rate
		2.Serial communication error	2.Press the stop button to reset and contact technical support.
		3.The communication cable is faulty.	3. Check the communication cabling.
ITE	Current detection fault	1.Control board connection abnormal	1.Check and re insert
		2.Auxiliary power supply damage	2.Contact technical support
		3.The HALL device is faulty.	3.Contact technical support
		4.The drive board is faulty.	4.Contact technical support
TE	Motor auto-tuning fault	1.Motor capacity does not match the capacity of the AC drive	1.Replace inverter type
		2.The motor parameters are not set according to the nameplate.	2.Set the motor parameters according to the nameplate properly.
		3.Motor auto-tuning parameters and standard parameters do not match	3.To make the motor no-load, re identification
		4. The motor auto-tuning times out.	4.Check the cable connecting the AC drive and the motor.
EEP	EEPROM readwrite fault	1.Error reading and writing control parameters	1.Press the stop button to reset and contact technical support
		2.The EEPROM chip is damaged.	2.Contact technical support

Display	Fault Name	Possible Causes	Solutions
PIDE	PID feedback lost during running	1.PID Feedback line disconnection	1.Check PID feedback signal line
		2.PID feedback source disappears	2.Check PID feedback source
BCE	Brake unit fault	1.Brake line fault or brake device damage	1.Check the brake unit and replace the brake device
		2.The resistance of the external braking resistor is too small	2.With greater braking resistance
LEA	Pipeline leakage fault	Pipeline leakage	Check pipeline leakage
CHo	Pipeline blockage fault	Pipeline blockage	Check pipeline blockage

8.2 The common faults and processing methods

Frequency converter may encounter the following fault conditions in the process of using please refer to the following simple method for fault analysis：

Electricity no display:

a) Using a multimeter to check if the inverter input power and frequency converter rated voltage is consistent, please check if the power problem and ruled out.

b) Check whether the three-phase rectifier bridge is in good condition. If the rectifier bridge has blasted, please seek service.

c) Check whether the CHARGE lamp is lit, if the light is not bright, the fault generally focus on the rectifier bridge or buffer resistance, if the light is bright, the fault may be in switching power supply section, please seek service

Jumped on the electric power supply air switch after:

a) Check whether there is between the input power grounding or short circuit. Eliminate problems.

b) Check to see if the rectifier bridge has been the breakdown, if damaged, for the service.

Frequency converter running after motor rotation:

a) Check whether there is a balance between the U, V, W three-phase output, if any, are for motor line or itself is damaged, or motor blocked due to mechanical trouble, please.

b) But the output three-phase imbalance, should for inverter drive board or output module is damaged,

c) If there is no output voltage, output module is likely to be driven plate or damaged, please seek service.

On electrical inverter show normal, jumped after the operation power supply air switch:

a) Check whether there is a short circuit between the output module, if so, please seek service.

b) Check whether there is a short circuit between motor fuses or ground, if yes, please seek service.

c) If the trip is occasional and relatively far distance between motor and frequency converter, consider to add the output ac reactor.

Chapter 9 Operation samples

9.1 Terminals forward and reverse +external potentiometer set samples

P0.01=1: external potentiometer adjust speed；

P0.02=1:external terminal forward and reverse running；

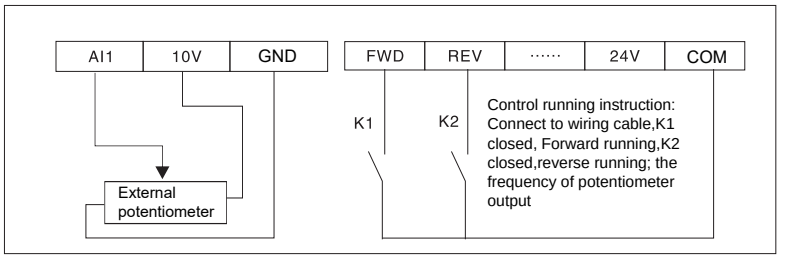
P3.01=1: forward running,the factory value set；

P3.02=2:reverse running，factory value set.

Parameters set P0.02 as examples

Operation steps	LED display	status
Stop mode	50.00	HZ light on、50.00 flash
Press PRG/ESC once，parameter set mode	P0	0 flash
press RD/WT to P0.00	P0.00	0 character flash
Press ▲ twice（read）P0.02	P0.02	2 character flash
press RD/WT，express 0	0	0 character flash
press ▲，set 1	1	1character flash
Press RD/WT，confirm	P0.03	3 character，set succssfully

Operation steps	LED display	status
press PRG/ESC，back to control running mode	P0	0 character
press PRG/ESC，back to stop mode	50.00	HZlight on、50.00 flash



9.2 keyboard forward and reverse + potentiometer adjust speed set exmples

P0.01=2 keyboard potentiometer adjust output frequency；

P0.02=0 keyboard control running，REV/JOG（P1.21=1）control forward and reverse direction；

Parameter set P0.01=2as examples

Operation steps	LED display	status
Stop mode	50.00	HZ light on、50.00 flash
press PRG/ESC once，parameter set mode	P0	0 flash
press RD/WT to P0.00	P0.00	0character flash
press ▲ once（read）P0.01	P0.01	1character flash

Operation steps	LED display	status
press RD/WT, express 0	0	0 character flash
press ▲, set 2	2	2character flash
press RD/WT, confirm	P0.02	2character , set succssfully
press PRG/ESC, back to control running mode	P0	0 flash
press PRG/ESC, back to stop mode	50.00	HZlight on、50.00flash

Note：Press RUN after parameter set ,the indicator on，rotate panel potentiometer.

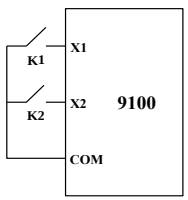
The inverter running。By REV/JOG , can switch forward or reverse。

9.3 Terminals three line wiring instruction

Function code	name	instruction	Set range	Default value
P3.08	terminal control running mode	0:two line control 1 1:two line control 2 2:two line control 1 3:two line control 2	0-3	

This parameter defines four different ways of the external terminal control frequency converter running.

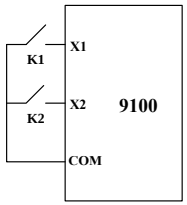
0: two line control 1 by X1, X2 terminals command determined the forward or reverse of motor.



K1	K2	command
OFF	OFF	stop
ON	OFF	FWD
OFF	ON	REV
ON	ON	stop

Setting:
P0.02=1 Terminal control
P3.01=1 Forward
P3.02=2 Reverrse
P3.08=0 Two line control 1

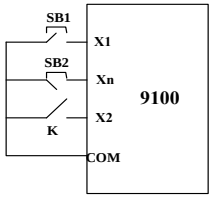
1: two line control 2, when use this mode ,X1 is enable terminals. Direction determined by the status of X2.



K1	K2	command
OFF	OFF	stop
ON	OFF	FWD
OFF	ON	stop
ON	ON	REV

Setting:
P0.02=1 Terminal control
P3.01=1 Forward
P3.02=2 Reverrse
P3.08=1 Two line control 2

2: Three line control, X4 is enable terminals. Running command generated by the X1,the direction command by X2,X4 input is normally closed.

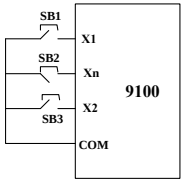


K	command
OFF	FWD
ON	REV

Setting:
P0.02=1 Terminal control
P3.01=1 Forward
P3.02=2 Reverrse
P3.04=3 Three line control
P3.08=2 Three line control 1

note：K:forward or reverse switch SB1：running button; SB2：stop button.

3: Three line type control 2, the model X4 is the enable terminal. Running command by the SB1 or SB3, and control direction at the same time, the shutdown command is produced by the normally closed type of SB2.



Setting:
P0.02=1 Terminal control
P3.01=1 Forward
P3.02=2 Reverrse
P3.04=3 Three line control
P3.08=3 Three line control 2

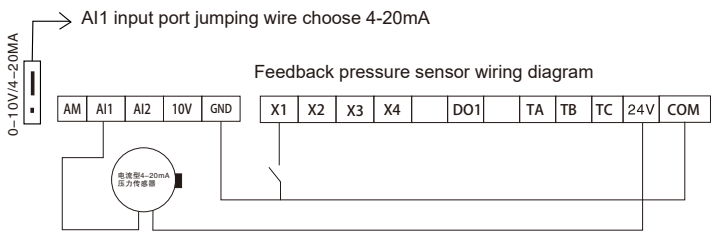
Note： SB1: running button SB2: stop button forward rotate SB3: reverse button

Note：For two line operation mode, when the X1 X2 / terminal effective, halt command generated by the other sources and make the inverter when stop, even if the control terminal X1 X2 / remain effective, inverter will not run after the stop command to disappear. If you want to make the frequency converter operation, need again send X1 and X2.

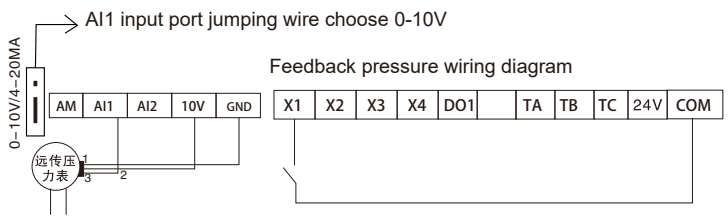
9.4 PID constant voltage control set examples

control terminals wiring diagram

4-20MA two wires pressure wiring diagram



Remote pressure gauge wiring diagram



Basic PID running parameters set as belows：
P0.01=6 choose output frequency determined by PID;
P0.02=0 choose keyboard control;
P0.02=1 choose terminals running;
P7.00=1 Feedback pressure input by AI1;
P7.00=5 Set Voltage determined by up or down keyborad.

Such as: 16kg pressure chart, P7.17set 16 is 16kg;
P7.03=0 constant voltage set as positive character;
P7.04=50 PID P set range 0-100%;
P7.05=10S PID integral I set range 0-6553.0S;
P7.06=0.1S PID calculus D set range 0-6553.0S;
P7.17 Set Maximum mileage, set range 0-100kg;
P7.19 set pressure, set as per actual condition;

On site operate instruction:
It will express P7.19 set pressure value,just set pressure by keyboard up or down.

On site PID adjust instruction:
P gain set methods：set gain about 50% first， For the change to the size of the quantitative, watching the stability of the feedback signal and given quantitative deviation (static), if the static differential in direction to the quantitative change (increase to quantitative, for example, system stability feedback quantity is always less than given quantitative), continued to increase P7.04 proportional gain value, reduce the proportional gain, conversely, repeat the above process until the static difference is small, it's hard to do no static difference).

P7.05 PID integral I gain，set range 0-6553.0S.

Integral time parameter adjustment, generally from major to minor, gradually adjust the integration time, observe the effect of the system to adjust, until the system steady rate up to par. Determining PID feedback and give quantitative deviation integral regulation speed. Integration time is when the PID feedback quantity deviation was 100%, and give quantitative points regulator (ignoring proportional action and calculus) after the time continuous adjustment, adjust the amount of maximum frequency, the shorter the integration time adjustment intensity. Integral regulation can effectively eliminate the static error. Integral regulation strong repeatedly will appear overshoot, the system has been unstable, until the oscillation. Due to the too strong of integral action of the oscillation characteristics are, feedback signal to quantitative bobbing up and down, swing gradually increased. Differential D P7.06 PID gain setting range 0-6553.0 S.

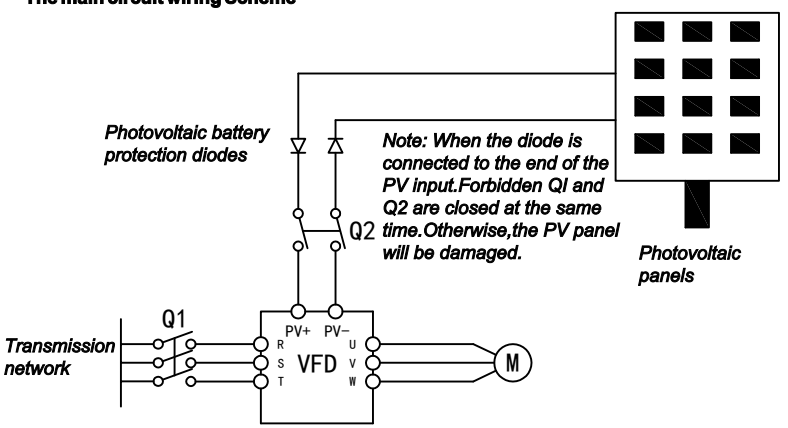
According to the actual situation to adjust. Differential time parameter adjustment in general from small to large adjustment, differential adjustment

Please use caution, thought differential adjustment easy amplification system, generally do not use.

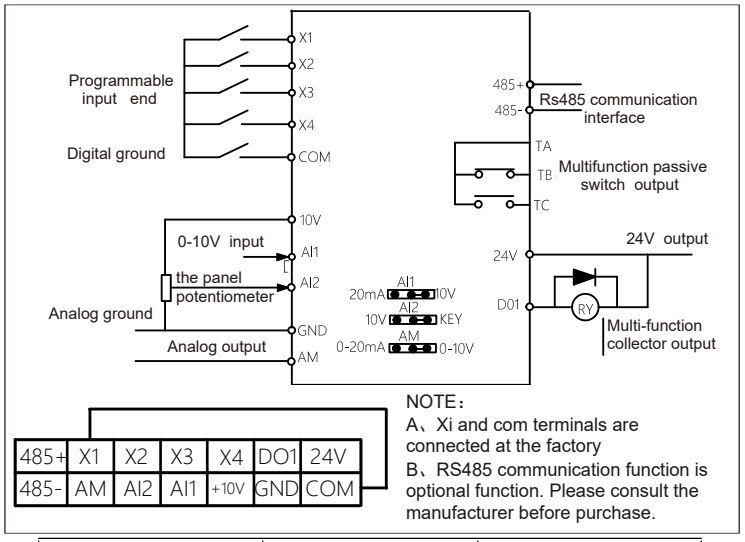
9.5 Automatic operation control scheme of PV VFD

9100 series photovoltaic inverter for non-standard products, wiring and debugging, please specify the data as this standard.

The main circuit wiring Scheme



Control terminals Wiring Scheme and the basic parameter settings



NOTE：
A、Xi and com terminals are connected at the factory
B、RS485 communication function is optional function. Please consult the manufacturer before purchase.

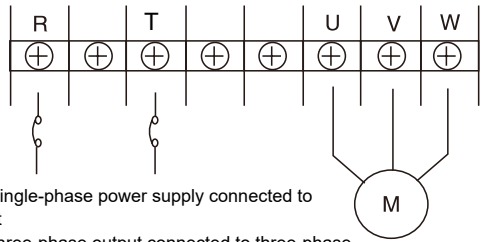
Parameter settings	2T(220V Output)	3T(380V Output)
P0-02	1，Terminal control	1，Terminal control
P0-02	0，Keyboard start	0，Keyboard start
P2-15	400	700
P2-16	2	2
P2-17	190	290
P2-18	2	2

It has been set at the factory, and the above parameters need to be reset after the factory settings are restored.

Note:
1. The DC voltage range of 220V (2T) PV VFD input is 200v-400v, and the best range is 300v-320v;
2. The DC voltage range of 380V (3T) PV VFD input is 300v-700v, and the best range is 530v-550v;
3. The PV VFD is equipped with MPPT function. If the input terminal exceeds the allowable voltage range, it will stop automatically and start automatically after the voltage is restored.
4. In order to ensure the best voltage range of the input terminal, it can be achieved by changing different combinations of photovoltaic panels in series and parallel;
5. When the main circuit inputs AC power, the photovoltaic DC input must be disconnected, otherwise the PV VFD will be damaged.

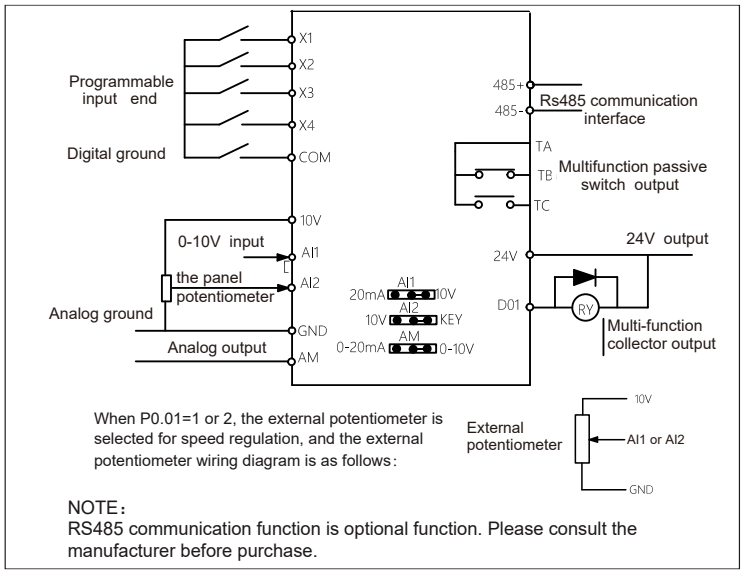
9.6 Automatic operation control scheme of 220V to 380V VFD

The main circuit wiring Scheme



220V single-phase power supply connected to R and t
380V three-phase output connected to three-phase motor

The control terminals Wiring Scheme



NOTE：
RS485 communication function is optional function. Please consult the manufacturer before purchase.

Note:
1. This frequency converter is special for ordinary three-phase 380V AC motor and cannot be used as power supply for other equipment;
2. The frequency converter can not be used in the situation where the load can be placed and fast start and stop is required (such as crane).

Product Warranty Card

<table>
<tr><td rowspan="3">Customer information</td><td colspan="2">Add. of unit:</td></tr>
<tr><td rowspan="2">Name of unit:
P.C.:</td><td>Contact person:</td></tr>
<tr><td>Tel.:</td></tr>
<tr><td rowspan="3">Product information</td><td colspan="2">Product model:</td></tr>
<tr><td colspan="2">Body barcode (Attach here):</td></tr>
<tr><td colspan="2">Name of agent:</td></tr>
<tr><td>Failure information</td><td colspan="2">(Maintenance time and content):

Maintenance personnel:</td></tr>
</table>