Manual of HT2000A VFD

Complete list:

一.Warning

1. Input power of this VFD is :single phase 220V AC AC end （AC AC end no sequence of phase），but never connect power of 220V with U、V、W end !Too high input voltage will make the inverter damaged thoroughly ！
2. If you buy a converter without a cooling fan,you should ensure good ventilation and heat dissipation conditions,in order to prevent converter damaged due to poor heat dissipation！
3. FG/E terminal of converter ,must connect to the ground rely ,or it there maybe induced voltage,even have the risk of electric shock!
4. This product can not be used in place of life support system、cause a significant loss of life and property when fault ！

Thank you for choosing HT2000A ,please read this manual in detail before use the inverter.The product and data are constantly updating and upgrading,when it updating, we cannot guarantee to notice you or update for your inverter.This manual only fit HT2000A, hardware version of 220V, the actual function of VFD you buy may be doesn’t match this manual.

二.contact us

When using HT2000A ， if you have questions or special application requirements,please look up this manual about related information.Contact us if you still can’t solute the problem.

三.Description of Brand

HT2000Aserials
high performance inverter
input :single phase AV 220V 50HZ / 60HZ

Output: triple phase0-220V
0.5-400HZ MAX 4.0A

Three phase AC motor delta connection
Frequency :100W-750W

四. Description of button function

button display	Description of function
编程 复位	编程programme/复位键reset. programme under state of inverter running or stop, you can press this key , when modifying parameter, must press this button into programme mode. If inverter stop cause of fault, after removing fault, press this button can clear fault information.
确认 监视	功能数据确认键(Ensure function data). Under the normal operating mode, press this button can display all information of inverter, such as set frequency、output frequency and input voltage. Press this button under programming mode, can display parameter, press this button again can store changed parameter.
运行	变频器启动运行键(start/run). Press this button , inverter start Press this button is effective when P001=0. When P001=1, controlled by external terminal, press this button is invalid.
停止	变频器停止键(stop)。Press this button, inverter will deceleration to stop as P074 first deceleration time. When P002=1, press this button , inverter cut off output directly. When P001=0, press this button is effective.
▲	上升键(up). Adjust frequency or change parameter. Tips : if press this button for a short time then release, the values have changed will change step by step. If press this button for a long time , the values have changed will change quickly.
▼	下降键(down). Adjust frequency or change parameter. Tips : if press this button for a short time then release, the values have changed will change step by step. If press this button for a long time , the values have changed will change quickly.

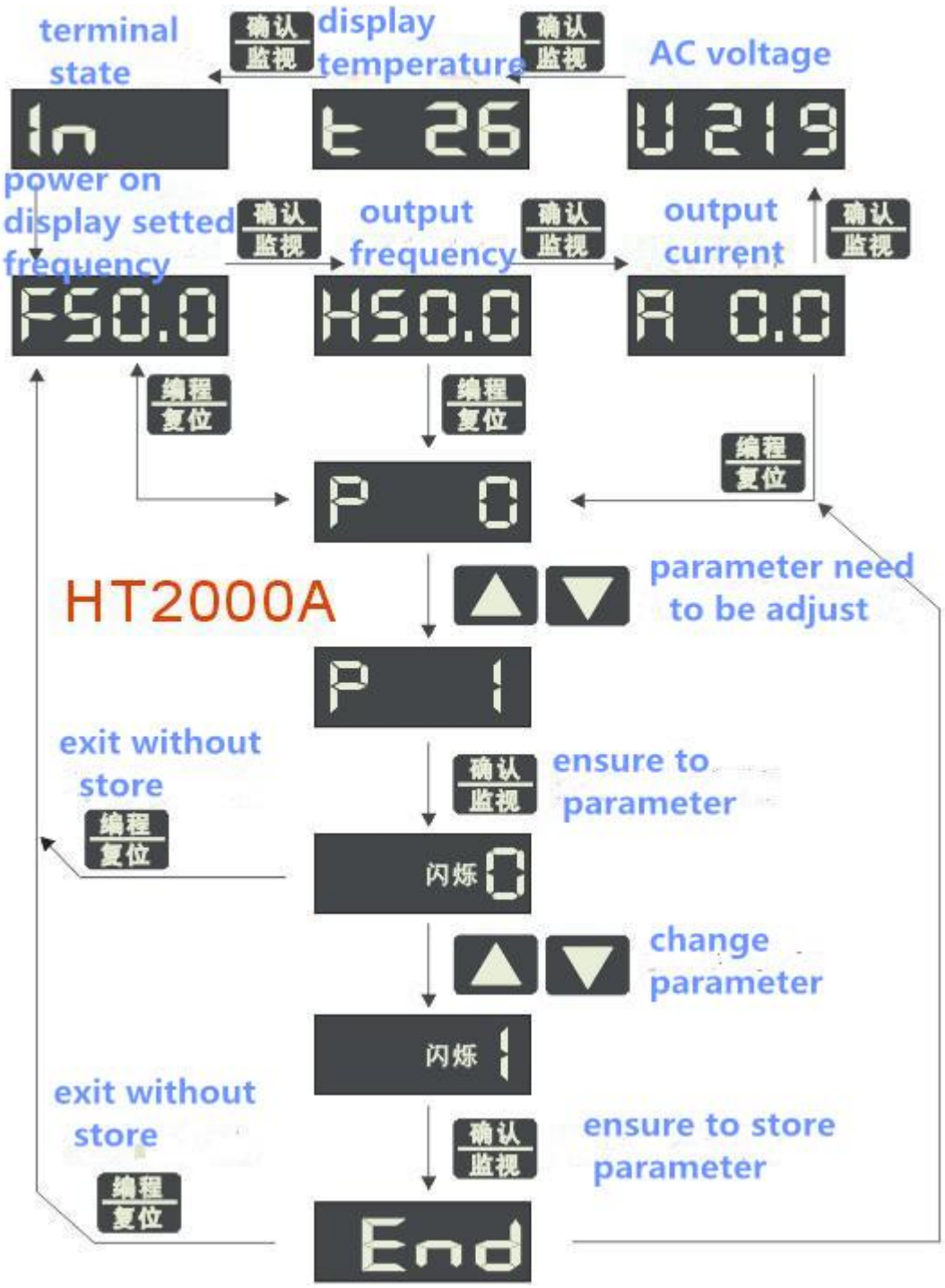
HT2000A keyboard interface

五.Description of content displaying (fit HT2000A serials)

Display content	Description
	Display the current target given frequency of converter.This frequency maybe come from main first spectrum ,setting frequency or inching frequency or multi section order 1-16 controlled by multifunctional input terminal 1-4.If frequency come from digital panel, can press ▲ or ▼ to set frequency directly, and settings will be automatically saved.
	Display actual output frequency of converter (HZ) 确认 监视 *ensure monitor* can switch the content what you monitor by this button
	Display actual AC value of voltage AC input converter (V) Voltage value varies with the input voltage changes。 确认 监视 *ensure monitor* can switch the content what you monitor by this button
	Display output current of converter(A) Current value changes with the motor current change. 确认 监视 *ensure monitor* can switch the content what you monitor by this button
	Display the actual speed of motor (RPM) ,for example , converter 50HZ corresponding factory speed is 1450 rpm. Can by adjusting parameter P058 motor rated speed ratio : fourth grade motor 1450 rpm /50HZ=d29.0 Need power display can by adjust parameter P057=d0001 is actual output motor speed.
	Display temperature of radiator When the temperature is higher than 75 ℃, converter will Er. 7 alarm.
	 display IO terminal input state
	Display serial number of parameter.Press ▲ or ▼ adjust to the parameter you want Pr.000-Pr.123. If press 确认 监视 *ensure monitor* can display this parameter.
	Display parameter,if switch will winkle,press ▲ or ▼ to set parameter.

	Press 确认 监视 *ensure* *monitor* again to store the parameter changed.
	If you see -End- after 1 s , indicate the data has be accepted, and store to inner memory automatically.

六.Please read/ set parameter according to the process bellow.



The process in picture as an example of: running mode from controlled by panel adjust to controlled by external terminal .
P001=d001

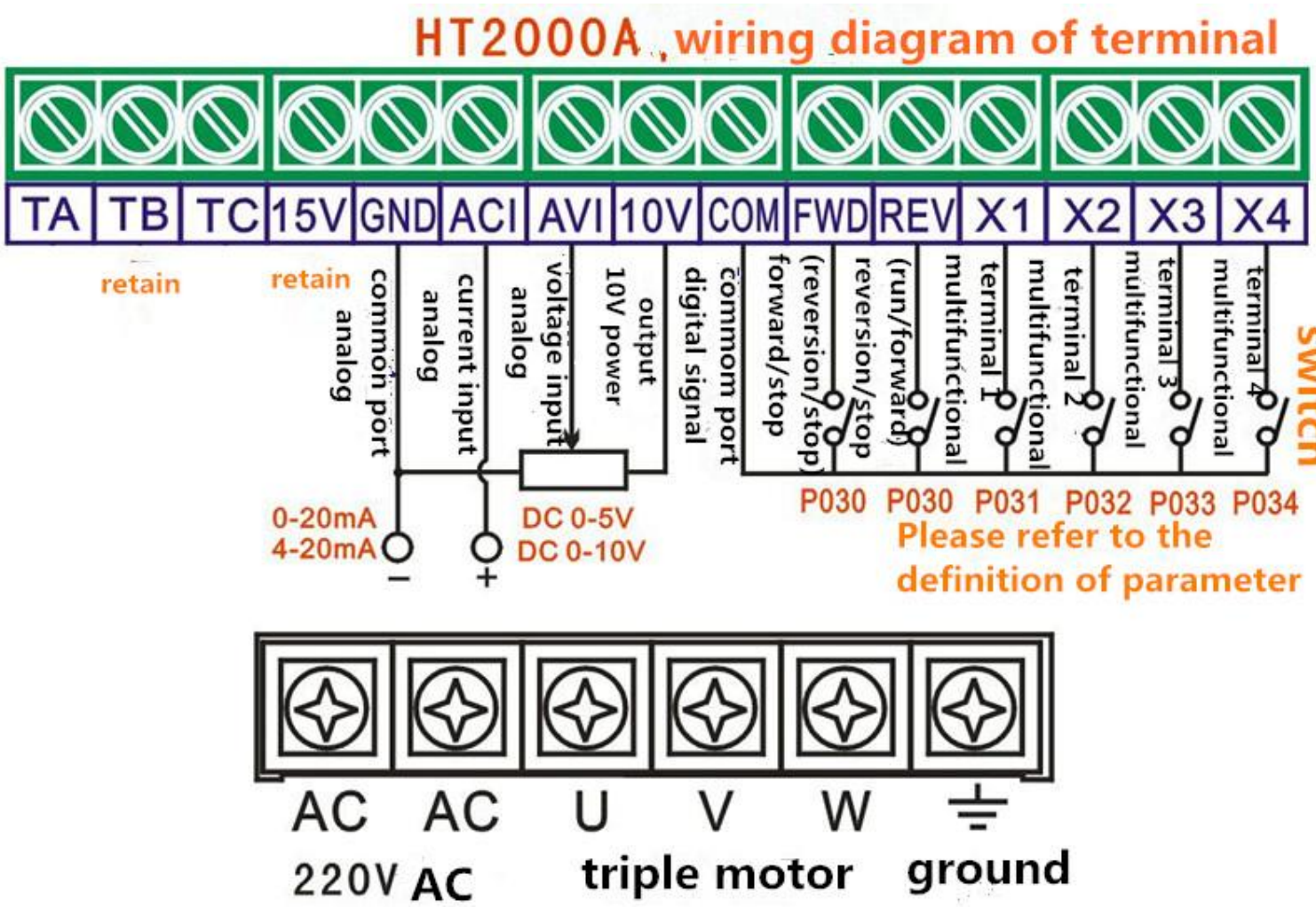
七.Basic wiring diagram

Analog frequency signal source, when parameter pr.000=d0001, it is effective.

Notes:

1. Input power

o



f this product is : single 220V AC (no sequence) connect with 220V end. Never connect power 220V with U,V,W end, or the converter will be burn, Please do not contact capacitance or contactor between U ,V ,W output end and middle of motor!

2. when installing or disassembling wire, At least wait 30 seconds after removing power, or will have risk of getting electronic shock!
3. If you buy a converter without a cooling fan, you should ensure good ventilation and heat dissipation conditions, in order to prevent converter damaged due to poor heat dissipation !
4. FG/E terminal of converter ,must connect to the ground rely ,or it there maybe induced

voltage,even have the risk of electric shock!

5. Users should install the short circuit, leakage protection device in end of input power of converter !

6. Output end of converter (U,V,W)connect with three phase asynchronous motor in delta connection.

7. Never connect COM/GND with FG/ground /machine shell /zero line,or will damage converter !

八. table of function parameter (Some versions / batch products, practical function/factory value may not match the table)

Parameter number	Parameter name /description of function	Description of arrange can be setted	Factory set
P000	Select the main first frequency source	d000 : Main first section)frequency controlled by digital operator,can be changed by pressing up and down button, and will store automatically after changed; d001: Main first section) frequency controlled by external analog input signal 1 AVI ACI (DC 0-10V)/DC 0-20mAinput impedance is 500 ohm);at this time should set Pr28, Pr29, Pr41, Pr42 correctly. d002: Main first section)frequency controlled by order of RS-485 (this function retain) d003: Main first section)frequency controlled by external analog input signal 2 AVI ACI(DC 0-10V)/DC 0-20mAinput impedance is 500 ohm);at this time should set Pr28, Pr29, Pr41, Pr42 correctly. d004: Input end X1-X4 choose one from two external analog signal as Main first section)parameter input according to P031-P034) d005: Main first section)frequency adjust by Potentiometer of panel operator,can be adjusted between the maximum output frequency P028) and the minimum running frequency P029).	d0005
P001	Choose start/stop signal source	d000:run order comes from digital operator(panel start stop button control) d001: run order comes from external terminal (external FWD REV control) d002: run order comes from RS-485 (this function retain) d003: run order comes from digital operator:3 button control motor only specific models have this function)	d0000
P002	Select motor parking mode	d000 : as deceleration braking to shutdown d001: as run freely to shutdown d002: shutdown mode decided by RS-485	d0000

			d003 : no reduction process when stop , Immediately DC brake to shutdown.	
P003	V/F Curve setting attention: Curve setting need to meet the condition belows:1.the maximum operating frequency>=middle frequency>=minimum output frequency; 2.maximum voltage>=middle voltage>=minimum output voltage. Attention:when motor is running ,do not change these parameter!		Maximum running frequency selection d010.0—d400.0 Hz	d050.0
P004			Maximum voltage frequency selection d010.0—d400.0 Hz	d050.0
P005			Maximum output voltage selection d010.0—d250.0 V	d220.0
P006			Middle frequency selection d010.0—d400.0 Hz	d005.0
Pr007			Middle voltage selection d010.0—d250.0 V	d040.0
P008			Minimum output frequency selection d001.0—d400.0 Hz	d000.4
P009			Minimum output voltage selection d010.0—d250.0 V	d012.0
P010	use the external analog potentiometer unified control of multi speed frequency 0-200%),Connection method of potentiometer is the same with analog frequency input potentiometer .		d0000:invalid d0001:invalid	d0000
P011	retain			d0000
P012	When jogging set accelerating time		d000.1—d99.99 s	d00.10
P013	When jogging set decelerating time		d000.1—d99.99 s	d00.10
P014	When jogging set forward frequency		d000.1—d400.0 Hz	d015.0
P015	When jogging set reversion frequency		d000.1—d400.0 Hz	d015.0
P016	Reversion prohibiting setting	Attention: If prohibit reversion,when converter receive reversion order, it won't drive motor to reversion,and no reminder.	d0000: can reverse d0001: prohibit reverse,only forward. Attention :forward and reverse are 2 opposite conception ,when converter used in place can't prohibit first time, must ensure the running direction of motor carefully.	d0000
P017	Overvoltage lost speed prevention settings		d0000:Overvoltage lost speed prevention invalid d0001:Overvoltage lost speed prevention valid	d0001
P018	Over current setting when		d0050—d0200%	d0140

	accelerating		
P019	Over current setting when running	d0050—d0200%	d0140
P020	AC brake current percentage setting. If won't use "AC brake when shutdown" function, should set it as 0%	d000.0—d050.0%	d008.0
P021	retain		d0000
P022	AC brake current time setting. If won't use "AC brake when shutdown" function, should set it as 0.0s ; if set it as 999.9, indicate always "AC brake" when shutdown.	d000.0—d999.9s	d0015
P023	AC brake start frequency setting when shutdown: Decelerate to shutdown, this parameter set start frequency of AC brake. when setted value less than minimum frequency P008), AC brake from P008 setted frequency.	d000.0—d060.0 Hz	d001.0
P024	Swing frequency percentage, if you won't use swing frequency, please set it as 0.0%, only some version has this function)	d000.0-d020.0%	d000.0
P025	The swing frequency step amplitude percentage, only some version has this function)	d000.0-d040.0%	d005.0
P026	Swing frequency up time seconds, only some version has this function)	d000.1-d999.9	d006.0
P027	Swing frequency down time seconds, only some version has this function)	d000.1-d999.9	d005.0
P028	Analog input frequency top limit selection (P028 should great than P029)	d000.0—d400.0 Hz when P000=1 valid)	d050.0
P029	Analog input frequency low limit selection(P028 should greater than P029)	d000.0—d400.0 Hz when P000=1 valid)	d000.0
P030	external running mode FWD 、 REV: d0000 : FWD forward/stop, REV reverse/stop. (Two line type control motor operating). d0001 : FWD forward run/stop, REV reverse/forward. (Two line		d0000

	setting Multi control mode according to diagram 9.1 below	type control motor operating). d0002 : X4-EF),REV-DIR),FWD-START) (Three line type control motor operating).) . Under this mode,please set P034as d0060 valid,see detail description. the closing moment below refers to: (After switch on let it go off) d0003 : when shutdown,REV Closed action forward starting motor in a moment; when running, REV closing action shutdown in a moment. When shutdown, FWD closing action start motor reversely in a moment; when running , FWD closing action shutdown in a moment d0004 : REV Closed action forward starting motor in a moment; FWD closing action shutdown in a moment。 d0005 : FWD Closed action forward starting motor in a moment; REV closing action shutdown in a moment。 d0006 : REV Closed action forward starting motor in a moment; FWD brake off action shutdown in a moment. d0007 : FWD Closed action forward starting motor in a moment; REV brake off action shutdown in a moment. d0008 : The motor to and fro movements automatically (reversing inversion when limit)application: when shutdown , REV Closed action forward starting motor in a moment, FWD closing action start motor reversely in a moment; when running, REV or FWD closing action motor change direction in a moment. At this time should set one of P031- P034 as d0040-d0041,to generate a stop condition。 d0009 : when shutdown, REV closing start motor forwardly in a moment can not start when X1 is closed); when running, REV closing decelerating shutdown in a moment.when shutdown, FWD closing start motor reversely in a moment, can not start when X1 is closed); when running, FWD closing decelerating shutdown in a moment.when running ,X1 closing shutdown freely in a moment ,X2brake off decelerating shutdown in a moment ,set time Pr055 parameter)Slow down to shutdown at the end. Start the motor to countdown again.P055 parameter is timing time seconds).such as P055 as parameter set 0,so timing function is invalid. d0010 : when shutdown , REVREV closing start motor forwardly in a moment can not start when X1 is closed); when running, REV closing decelerating shutdown in a moment.when	

		shutdown, FWD closing start motor reversely in a moment, can not start when X1 is closed); when running, FWD closing decelerating to shutdown in a moment.when running,X1closed moment decelerate to shutdown,X2 disconnection moment decelerate to shutdown。Timing Pr055frequency)decelerating to shutdown in the end, Start the motor countdown again.P055frequency is timing time s).If P055 frequency setted as 0,timing function is invalid. d0011 : REV control the direction of motor FWD/REV);start motor when FWD closed, shutdown when disconnection. d0012 : Terminal machine working mode: in this mode,please set P034 as d0060。 In stop state, REV closed moment start motor FWD, If only REV keep closed, no matter what state of X4,motor always FWD,during FWD, if REV disconnection, motor still FWD,until X4 closed moment,it stop automatically. During stop,, FWD closed moment start motor REV, if only FWD keep closed, no matter what state of X4,motor always REV; during REV, if FWD disconnection, motor still REV,until X4 closed moment,it stop automatically。 d0013 : Ribbon machine operating mode:during stop, FWD closed moment FWD start motor, not relating REV), enter into pre-running jogging)state;pre-running jogging)state, if only FWD keep closed,run as speed which frequency P105setted, enter into normal running 3 s later;during normal running, even if FWD disconnection,still run as main frequency , FWD closed moment or shutdown when REV closed.	

P031	X1input function selection	d0000: multi-speed input1 please according to: multi-speed order-frequency section-parameters Corresponding relation tabled0001:multi-speed input2 please according to: multi-speed order-frequency section-parameters Corresponding relation tabled0002:multi-speed input3 please according to: multi-speed order-frequency section-parameters Corresponding relation tabled0003:multi-speed input4 please according to: multi-speed order-frequency section-parameters Corresponding relation tabled0004: forward jogging order d0005: reversion jogging order d0006: external fault reset d0007: external fault, closing action product "external fault" in a minute d0008: external fault, disconnecting action product "external fault" in a minute d0009: speed up order valid when P000=0,according to P038 d0010: speed down order when P000=0 valid,according to P038 d0011: jogging start order,at this time FWD always decide the direction od motor. d0012: Closed action moment count plus 1 d0013: disconnect action moment count plus 1 d0014: Closed action moment count minus 1 d0015: disconnect action moment count minus 1 d0016: disconnect action moment count reset 0 d0017: Closed action moment count reset 0 d0018: Closed action moment count load again d0019: disconnect action moment count load again d0020: X3 closed moment,if X4 is open circuit,add count,if X4 is closed circuit, minus count the encoder count mode d0021: X3 closed moment,if X4 is open circuit,minus count,if X4 is closed circuit,add count the encoder count mode d0022: X3 disconnected moment,if X4 is open circuit,add count,if X4is closed circuit, minus count the encoder count mode d0023: X3 disconnected moment,if X4 is open circuit,minus count,if X4 is closed circuit,add count the encoder count mode d0024: Motor stall detection input attention to set P043 d0040: closing action shutdown in a moment d0041: disconnect action shutdown in a moment d0042: under shutdown state,if Xn is open circuit,can't start external terminal;under running state,if Xn disconnect,AC brake shutdown immediately, regardless of whether P002 is set as 3 d0043: external fault, closed product "external fault"	d0000

P032	X2 input function selection	d0044: external fault, disconnect product “external fault” d0050: X4 closed maximum output voltage= P038x P005 this setting is only valid for the X4d0060: X4 is a special function , such as Control mode of the three line Start and stop control/ Terminal machine working mode, according to P030 parameter definition d0061: choose one in 2 external analog input signal as Main first section) frequency input. It’ s valid when P000setted as 4. Attention :1. don’ t set many “forward/reversion jogging” input end; You can also set more than one inch enable input 2. when external fault signal valid, converter shutdown as P002 selection ; can also through setting P020, P022, P023to choose AC brake function.	d0001
P033	X3 input function selection		d0002
P034	X4 input function selection		d0003
P035	Analog output frequency /current/ voltage signal setting	d0000: Used as a frequency meter, output analog is correlation with frequency d0001: Used as current meter, output analog is correlation with current d0002: Used as a voltage meter, output analog is correlation with voltage	d0000
P036	retain		retain
P037	Analog output gain selection	d0001-d200%	d0100
P038	Frequency step amount when external terminal speed up/down	d000.1-d400.0HZ	d005.0
P039	Any frequency reaches setting	d000.0—d400.0 Hz	d020.0
P040	Any frequency reaches width setting	d000.1—d400.0 Hz	d001.0

P041	Top limit voltage selection of analog input frequency order	d00.00—d10.00V （valid when P000=1)	d9.90
P042	Low limit voltage selection of analog input frequency order	d00.00—d10.00 (valid when VPr000=1)	d00.10
P043	Motor stall detection time setting its unit is 2/1000s)	d0000—d9999	d1000
P044	The motor rated current selection(A)	d00.30—d120.0	dxxx.x
P045	motor no load current selection	d0000—d0040%	d0010
P046	Automatic torque compensation gain	d0000—d0010	d0000
P047	torque gain when accelerating (valid when P011=0)	d0010—d0200%	d0100
P048	torque gain when decelerating (valid when P011=0)	d0010—d0200%	d0100
P049	Multi function output relay movement settings (function retain)	d0000：get power when fault,or lose power d0001：get power when running,or lose power d0002：retain d0003:get power when any parameter reach,or lose power relating with setting of P039, P040 的) d0004：get power when the count reaches ,or lose power* d0005：get power when voltage is low,or lose power d0006：get power when voltage is over,or lose power d0007：get power when current is over,or lose power d0008：get power when speed is not zero,or lose power* d0009：get power when AC brake,or lose	d0000

		power d0010: get power when over torque ,or lose power* d0011: get power when external pause fault,or lose power d0012: get power when forward,or lose power d0013: get power when reversion,or lose power d0014: get power when jogging,or lose power d0015: get power when accelerating,or lose power d0016: get power when decelerating,or lose power d0017: get power when speed is all the same,or lose power d0018: get power when X1 is closed,or lose power d0019: get power X2 is closed ,or lose power d0020: get power X3 is closed ,or lose power d0021: get power X4is closed ,or lose power d0022: get power when FWD closed,or lose power d0023: get power when REV closed,or lose power d0024: Forward and bus DC voltage is greater than 410V,get power,or lose power d0025: Reversion and bus DC voltage is greater than 410V ,get power,or lose power	
P050	Electronic thermal relay acting settings	d0000 act as a standard motor d0001 act as a special motor d0002 no action	d0002
P051	Electronic thermal relay acting time	d0030—d0300 s	d0060

P052	Over torque detection settings	Over torque detection function selection	d0000: Operating torque not detected d0001: torque detection during a speed, over torque after detect OL2)stop operating d0002: torque detection during a speed, over torque after detect OL2)keep operating d0003: torque detection during a speed, over torque after detect OL2)stop operating d0004: torque detection during a speed, over torque after detect OL2)stop operating	d0000
P053		Over torque detection level	d0030—d0200%	d0150
P054		Over torque detection time	d000.1—d010.0 s	d000.1
P055		Timing settings	d0001—d9999 s	d0000
P056		Numerical setting	d0001—d9999	d0000
P057	Physical quantity display settings	Physical quantity display selection	d0000: display target frequency (Hz) d0001:display the user defined physical quantity Defined speed such as: 4grade motor 1450 turn P058frequency =29.0 is 50HZaccording to 1450turn d0002: display inner counter d0003: display actual frequency during operating ,display target frequency when stop	d0000
P058	constant physical quantity proportion setting		d00.01—d99.99	d01.00
P059	Leap frequency setting,leap frequency 1		d000.0—d400.0 Hz	d000.0
P060	Leap frequency setting,leap frequency 2		d000.0—d400.0 Hz	d000.0
P061	Leap frequency setting,leap frequency 3		d000.0—d400.0 Hz	d000.0
P062	Leap frequency width setting		d000.1—d020.0 Hz	d000.1
P063	PWM Carrier frequency selection		d002.0—d015.0 : FPWM=2.0—15.0KHz PWM IGBT switch frequency of module Set smaller motor noise increases IGBT life-time dilation ; Set bigger motor noise decreases IGBT life-time shorten;	d006.0

		Please don't set this frequency casually,set over big will lead IGBT module serious fever.	
P064	Abnormal fault, automatic reset / start a set number of times	d0000- d0010	d0000
P065	Recently the first abnormal record	d0006: external abnormal EF) d0007: CPU abnormal 1CF1) d0008: CPU abnormal 3CF3) d0009: The controller protection circuit abnormal HPF) d0010: current value during accelerating is double of the rated current ocA) d0011: current value during decelerating is double of the rated current ocd) d0012: current value during constant speed is double of the rated current ocn) d0013: Grounding protection or fuse GFF) d0014: retain(factory function diagnostic records) d0015: retain(factory function diagnostic records) d0016: retain(factory function diagnostic records) d0017: External interrupt enable bb) d0018: overload oL2) d0019: retain(factory function diagnostic records) d0020: retain(factory function diagnostic records)	d0000
P066	Recently the second exception record		d0000
P067	Recently the third exception record		d0000
P068	frequency locked/reset	d0000: all parameters can be read and can be written d0001: all parameters can be read but can't be written d0002-d0009: retain When stopping set Pr68 values greater than 9,Can be restored for a specified frequency version of the factory frequency value: d0010:Recovery as 10 Edition frequency dedicated machine factory frequency value) d0011:Recovery as 11 Edition frequency dedicated machine factory frequency value) d0012:Recovery as 12 Edition frequency dedicated machine factory frequency value) d0013:Recovery as 13 Edition frequency dedicated machine factory frequency value) d0014:Recovery as 13 Edition frequency dedicated out factory frequency value some version doesn't support)	d0000
P069	RS485 the communication baud rate request protocol to us)function retain	d0000: 1200 bps d0001: 2400 bps d0002: 4800 bps d0003: 9600 bps	d0003

		d0004: 19200 bps d0005: 38400 bps d0006: 57600 bps Not recommended)	
P070	RS485 communicating address request protocol to us)function retain	d0001—d0031	d00001
P071	RS485communicating form request protocol to us)function retain	d0000: 8 data+1 stop bit ; + Odd parity d0001: 8 data+1 stop bit ; + Even parity d0002: 8 data+1 stop bit ; + no parity d0003: 8 data+2 stop bit ; + Odd parity d0004: 8 data+2 stop bit ; + Even parity d0005: 8 data+2 stop bit ; + no parity	d0002
P072	Automatic voltage regulator output function select	d0000:Do not start automatic voltage regulator output function d0001:start automatic voltage regulator output function	d0001
P073	first main)accelerating time setting ACC	d00.01—d99.99 s	d005.0
P074	first main)decelerating time setting DEC	d00.01—d99.99 s	d005.0
P075	Second accelerating time setting	d00.01—d99.99 s	d00.25
P076	Second decelerating time setting	d00.01—d99.99 s	d00.25
P077	third accelerating time setting	d00.01—d99.99 s	d00.25
P078	third decelerating time setting	d00.01—d99.99 s	d00.25
P079	fourth accelerating time setting	d00.01—d99.99 s	d00.25
P080	fourth decelerating time setting	d00.01—d99.99 s	d00.25
P081	Fifth accelerating time setting	d00.01—d99.99 s	d00.25
P082	Fifth decelerating time setting	d00.01—d99.99 s	d00.25
P083	Sixth accelerating time setting	d00.01—d99.99 s	d00.25
P084	Sixth decelerating time setting	d00.01—d99.99 s	d00.25
P085	Seventh accelerating time setting	d00.01—d99.99 s	d00.25
P086	Seventh decelerating time setting	d00.01—d99.99 s	d00.25
P087	Eighth accelerating time setting	d00.01—d99.99 s	d00.25
P088	Eighth decelerating time setting	d00.01—d99.99 s	d00.25
P089	Ninth accelerating time setting	d00.01—d99.99 s	d00.25
P090	Ninth decelerating time setting	d00.01—d99.99 s	d00.25
P091	Tenth accelerating time setting	d00.01—d99.99 s	d00.20
P092	Tenth decelerating time setting	d00.01—d99.99 s	d00.22
P093	Eleventh accelerating time setting	d00.01—d99.99 s	d00.20
P094	Eleventh decelerating time setting	d00.01—d99.99 s	d00.22
P095	Twelfth accelerating time setting	d00.01—d99.99 s	d00.20
P096	Twelfth decelerating time setting	d00.01—d99.99 s	d00.22

P097	Thirteenth accelerating time setting	d00.01—d99.99 s	d00.20
P098	Thirteenth decelerating time setting	d00.01—d99.99 s	d00.22
P099	Forth accelerating time setting	d00.01—d99.99 s	d00.20
P100	Forth decelerating time setting	d00.01—d99.99 s	d00.22
P101	Fifteenth accelerating time setting	d00.01—d99.99 s	d00.20
P102	Fifteenth decelerating time setting	d00.01—d99.99 s	d00.22
P103	Sixteenth accelerating time setting	d00.01—d99.99 s	d00.20
P104	Sixteenth decelerating time setting	d00.01—d99.99 s	d00.22
P105	Second section frequency setting	d000.1—d400.0Hz	d013.0
P106	third section frequency setting	d000.1—d400.0Hz	d013.0
P107	fourth section frequency setting	d000.1—d400.0Hz	d013.0
P108	Fifth section frequency setting	d000.1—d400.0Hz	d013.0
P109	Sixth section frequency setting	d000.1—d400.0Hz	d013.0
P110	Seventh section frequency setting	d000.1—d400.0Hz	d013.0
P111	Eighth section frequency setting	d000.1—d400.0Hz	d03.0
P112	Ninth section frequency setting	d000.1—d400.0Hz	d013.0
P113	first0sectionfrequency setting	d000.1—d400.0Hz	d013.0
P114	first1sectionfrequency setting	d000.1—d400.0Hz	d013.0
P115	first2sectionfrequency setting	d000.1—d400.0Hz	d016.5
P116	first3sectionfrequency setting	d000.1—d400.0Hz	d025.0
P117	first4sectionfrequency setting	d000.1—d400.0Hz	d031.0
P118	first5sectionfrequency setting	d000.1—d400.0Hz	d037.0
P119	first6sectionfrequency setting	d000.1—d400.0Hz	d044.0
P120	software version number	only be read, user can't change it	dxxx.x
P121	Hardware version number	only be read, user can't change it	dxxx.x
P122	manufacturer number	only be read, user can't change it	
P123	VF Curve selection	0:3 section Broken line type 1:Low frequency torque boost type 2:Low frequency torque decrease type	d0000
P124	Manufacturers serial number	only be read, user can't change it	dXX.XX
P125	Input signal X1-X4 FWD REV times of sampling time	d 3—d 20	d 4

九.multi-speed order-frequency section-frequency relating table

multi-speed order-frequency section-parametersX1 X2 X3 X4 relating table

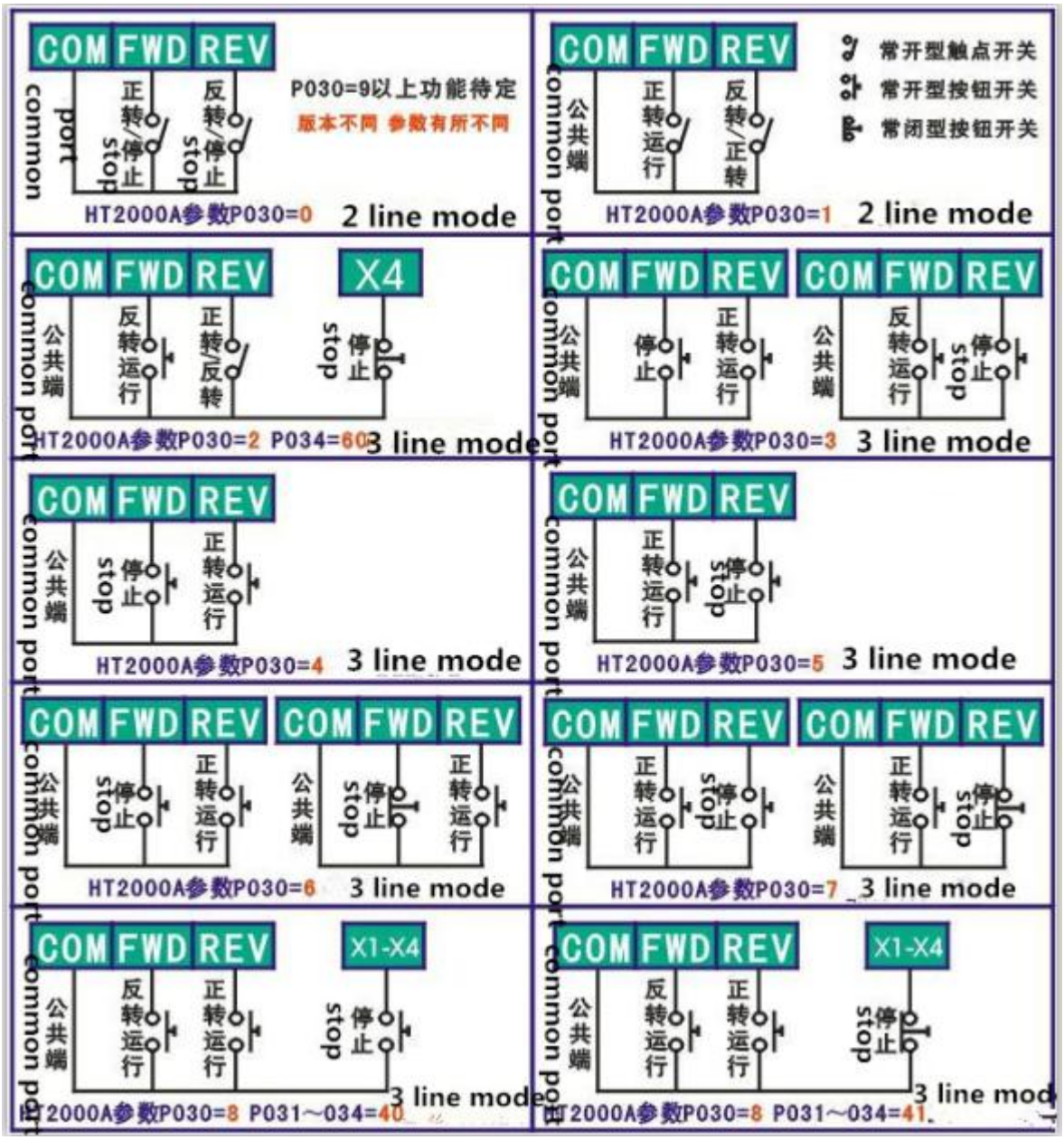
multi-speed inpue4	multi-speed inpue3	multi-speed inpue2	multi-speed inpue1	frequency section/relating frequency table
open circuit	open circuit	open circuit	open circuit	first(main)section frequency
open circuit	open circuit	open circuit	closed	第 2section frequency /P105
open circuit	open circuit	closed	open circuit	third section frequency /P106
open circuit	open circuit	closed	closed	fourth section frequency /P107
open circuit	closed	open circuit	open circuit	Fifth section frequency /P108
open circuit	closed	open circuit	closed	Sixth section frequency /P109
open circuit	closed	closed	open circuit	Seventh section frequency /P110
open circuit	closed	closed	closed	Eighth section frequency /P111
closed	open circuit	open circuit	open circuit	Ninth section frequency /P112
closed	open circuit	open circuit	closed	Tenth section frequency /P113
closed	open circuit	closed	open circuit	Eleventh section frequency /P114
closed	open circuit	closed	closed	Twelfth section frequency /P115
closed	closed	open circuit	open circuit	Thirteenth section frequency /P116
closed	closed	open circuit	closed	first4sectionfrequency /P117
closed	closed	closed	open circuit	first5sectionfrequency /P118
closed	closed	closed	closed	first6sectionfrequency /P119

This table “multi-speed inpue1” not must be external terminal X1, you can order any one of X1-X4 as “multi-speed inpue1”； multi-speed inpue2-multi-speed inpue4 also the same.

In frequency table,first(main)section frequency hasn’t corresponding frequency .power on for converter,but don’t give the inverter connected to other control signal,can set first(main)section frequency by using p and down arrows first(main)section frequency , the inverter will automatically remember your settings.

9.1 graphical operating mode with detail diagram:

Multi-functional running mode P030frequency setting: as picture 9.1:



十.Failure phenomenon、Error code、failure reason and solution

Error code/Failure phenomenon	failure reason and solution
Er. 0 Power voltage less than 140VAC	1. Check input power voltage,ensure input voltage in the arrange of 150—250V.Too high input voltage is will damage the inverter ; 2. Large inertia loads, deceleration time set value is too small; 3.Detecting power voltage supply by inverter voltage is not accurate,
Er. 1	

Power voltage more than 290VAC	display voltage and the actual power voltage is not the same, Need to repair processing;
Er. 2 Output short circuit alarm	During motor running, over current(The actual output current is too large), Please check whether the motor short circuit、connection correct、machine overload too big, or need repair;
Er. 3 CPU fault alarm	During motor running, The circuit of PWM inner CPU error, turn off power about 1 minute, then power on start again, if the this phenomenon again, need to repair ;
Er. 4 IGBT module over current alarm	During motor running, internal power of converter components module)fault; 1. Accelerating time /decelerating time is too short (P073 P074) setting is not correct; 2. Converter over current/heat, Please check whether the motor short circuit、the mechanical load is too large; 3. The input voltage is too high/ low, or wide fluctuations ; 4. The power of inverter and the motor do not match, or star/delta wiring is wrong or motor short of phase current leakage; 5. AC brake frequency (P020- P022)setting is not correct; 6. V/F frequency (P003- P009)setting is not correct; 7. Cooling of converter is not good(temperature of IGBT module or cooling is higher than 85℃)installation of cooling fan; 8. Power component gate drive voltage is too high / low, need to repair processing.
Er. 5 external fault	When external fault signal input valid, motor stop, and display code, reset can eliminate it, not need repair. Check P031-P034set as d0007 d0008 or not, reset fault eliminate;
Er. 6 Motherboard memory abnormal	Inner data frequency of converter)memory error. turn off power about 1 minute, then power on start again, if the this phenomenon again, need to repair ;Resume production settings are invalid, send factory repair;
Er. 7 The radiator overheated alarm	1. Cooling of converter is not good(temperature of IGBT module or cooling is higher than 75℃)installation of cooling fan; 2.Check whether the output current is too large, the temperature of surrounding environment is high led to this 。
8.8.8.8.8. Twinkle	1. Cooling of converter is not good(temperature of IGBT module or cooling is higher than 85℃)installation of cooling fan; 2. converter in automatic reset state, power off and restart, if press button “stop” or “reset” still can’ t solute, send back to factory to repair.
Er. 8 Detection circuit abnormal	The internal temperature temperature detection circuit fault or detection sensor bad, need to repair;
Er. 9	1.Motor stall;2. Setting of P043 is not correct;3. Motor stall detection sensor) signal is bad;
Serious motor	1. Please check input power voltage, ensure input voltage is in arrange

heating	150V—250V; 2. Please check whether the motor matching, the mechanical load is too large; 3. Improper setting of inverter VF curve P003-P009; 3. Ensure the cooling fan is working properly, the working environment is good heat; 4. The motor runs at low speed, add motor cooling will better;
No display, power indicator light flashes	1. Please check the input supply voltage, ensure that the input voltage is in the range of 250V to 150V; 2. Internal power supply protection, need to repair ;
Can't change frequency	When Pr068 be setted as d0001时,all frequency locked ,can't be changed; Please set P068 as d0000 first , then all frequency can be changed;
No display, power indicator light off	1. Please check input power first,ensure input voltage in the arrange of 150—250VAC, or oor need repair 2. The charging resistors of converter open circuit, if Unresolved after replacement, send back to factory to repair;
Leakage in machine shell	1. Disconnect the three line connected inverter and motor, if not leak power any more, can determine a motor or motor line leakage; 2. Then cut off input power 220V, if not leak power any more, can determine converter leak power, need to repair; 3. If still leak power , can determine the leakage has nothing with inverter / machine , please check other electric equipments; 4. Possible for inverter induction, transducer and machine equipment needs to be reliable connect to the ground;
Motor torque unable	1. Input power, ensure input voltage is normal(150V-250V); 2. Converter or motor short of phase, or wiring is not good; 3. Motor should change to delta connection; 4. Motor power is too low,increase motor power, increase converter power; 5. Adjustable frequency properly P006-009,P046;
Operation of the motor in one direction only	1. frequency lock the operating direction, check frequency P016 prohibit reversion setting; 2. The motor is the three-phase AC motor or not;
Motor speed is not fast enough	Adjust frequency P003 maximum operating frequency P028 analog top limit frequency ;
Motor vibration	Check the wire connect U V W with motor short phase or not, machine fault; Disconnect the electric wire, measuring the inverter output voltage is balanced, if voltage is unbalance, send to factory to repair;
Motor speed fast and slow Unstable speed	Check the mechanical fault, whether the motor belt is slipping, whether frequency displaying of converter is stable , if frequency fluctuation is rather big ,Please change internal adjustable potentiometer;
Motor turning in the opposite	Power off, contrapositive any two phase of U V W , or contrapositive control wire FWD and REV;