H100 Inverter

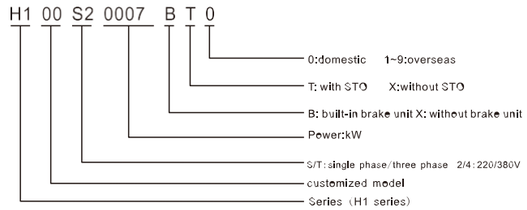
USER MANUAL

NO.1 Product introduction

1. 1 Technical Features

	Items	Description
input	Rated voltage /frequency	3ph: 380V~440V , 50Hz/60Hz 1ph: 200V~240V , 50Hz/60Hz
	Allowed voltage	3ph: 320V~460V ; 1ph: 180V~260V; voltage Imbalance rate: <3% ; frequency: ±5%
output	Voltage	0~rated input voltage
	Frequency	0Hz~1000Hz
	Overload capacity	150% rated current 60s，180% rated current 2s
control performance	Control mode	V/F、SVC
	Modulation Mode	SVPMW
	Motor type	asynchronous motor、synchronour motor、 single phase motor (consult factory before using)
	Start torque	1Hz/150%
	Speed range	1:100(SVC)
	Frequency accuracy	digital setting: maximum frequency±0.01%; anolog setting: maximum frequency±1%;
	Frequency resolution	digital setting: 0.1Hz; anolog setting: maximum frequency±1%;
	Acceleration deceleration curve	line、S-curve
	Rapid current limit	limit current rapidly within the current protection value, to ensure the safety of the equipment
	None-stop when instantaneous power off	none-stop when instantaneous power off, automatic frequency drop
Operation function	Command source	keypad、terminal、communication
	Set value source	digital、analog,multi-speed,communication
	PID	support main setting PID
Operation panel	LED display	Can display: output frequency,output voltage,output current , Bus voltage, display value 1 , display value 2, error, alarm
	External keypad	YES
Protection function		over-current protection、over-voltage protection、under-voltage protection、overheating protection、over load protection、phase lose protection、earth leakage、etc
Environment	Store enviornment	indoor, away from direct sunlight, no dust, no corrosive gas, no inflammable gas, no oil mist, no vapour, no drip and no salinity, etc
	Altitude	derating use abouve 1000M, derating 10% per 1000M
	Environment temperature	-10℃~+40℃ (environment temperature around 40℃~50℃please derating use)
	Humidity	5%~95%RH, no condensation
	Store temperature	-40℃~+70℃
	Vibration	≤5.9M/S²(0.6g)

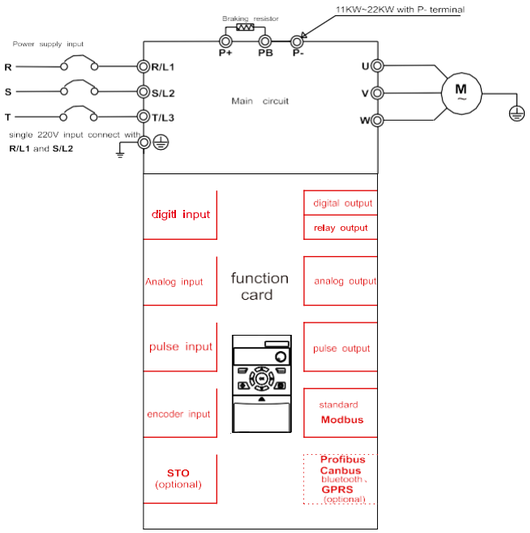
1.2 H1 nameplate



1.3 H1 series specifications and models

Base.No	Models	Input voltage	input current	Power (kw)	output current	Adap$we motor(KW)
F1	H100S20007BX0	1 phase 220V	8.2	0.75	5.0	0.75
	H100S20015BX0	1 phase 220V	14.0	1.5	7.0	1.5
F2	H100T20022BX0	1 phase 220V	23.0	2.2	12.5	2.2
		3 phase 220V	13.5			
F3	H100T20037BX0	1 phase 220V	38.6	3.7	15.2	3.7
		3 phase 220V	16.5			
	H100T20055BX0	3 phase 220V	24	5.5	23	5.5
F4	H100T20075BX0	3 phase 220V	37	7.5	31	7.5
	H100T20110BX0	3 phase 220V	52	11	45	11
F1	H100T40007BX0	3 phase 380V	4.0	0.75	3.0	0.75
	H100T40015BX0	3 phase 380V	5.8	1.5	4.5	1.5
	H100T40022BX0	3 phase 380V	6.5	2.2	5.6	2.2
F2	H100T40040BX0	3 phase 380V	12.6	4.0	10.5	4.0
F3	H100T40055BX0	3 phase 380V	16	5.5	14	5.5
	H100T40075BX0	3 phase 380V	21	7.5	19	7.5
F4	H100T40110BX0	3 phase 380V	28	11	26	11
	H100T40150BX0	3 phase 380V	36	15	33	15
F5	H100T40185BX0	3 phase 380V	42	18.5	40	18.5
	H100T40220BX0	3 phase 380V	48	22	46	22

NO.2 Main circuit and function card



Notice: different function card corresponding to different terminals. Except standard function card, can costomize any type of card.

Reset parameters when using different function cards. **An AC drive only can use one function card.**

⚠ Warning: Do not use function card when power is on!

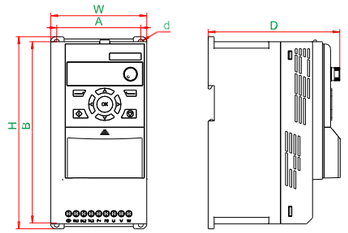
2. 1 Main circuit terminal description

Terminal identification	Name	Function description
⏚	Grounding terminal	Safety grounding
R/L1、S/L2、T/L3	Main circuit power input terminal	Connect three phase power supply, single phase power supply connect to R/L1, S/L2
P+、PB	Braking terminal	Connect to external braking resister
P+、P-	DC bus terminal	Two sets or more inverters use a common DC bus (11KW~22KW has P- terminal)
U、V、W	output terminal	Connect to three phase meter

2.2 Founction card configuration table

Function card / Physical characteristics	H10001	H10002	H10003	H10004	H10005	H10006	H10007	H10008	H10009	H10010	H10011	H10012
Digital input	4	3	4	8	2	2	3	2	2	4	4	3
Digital output								4	4			
Relay output	1		3	1	1	1	1	1	1	1	1	1
Analog input	1		1		2			1	1	1	1	1
Analog output					2			1	1			
Pulse input						1						
Pulse output						1						
Encoder input							1					
Modbus	1	1	1	1	1	1	1	1	1	1	1	1
Profibus								1				
Canbus									1			
Bluetooth										1		
GPRS											1	
STO												1
Typical application												

NO.3 Product Dimension



Framework	H1 series Dimensions (mm) W(Width)	H(Height)	D(Depth)	A	B	d
F1	85	170	124	67.3	158	5
F2	97	194	133	85	184	5
F3	126	237	147	112	223	6
F4	168	298	160	154	283	6
F5	198	355	177	183	338	6

NO.4 Keypad description

4. 1 Keypad appearance and keypad explanation

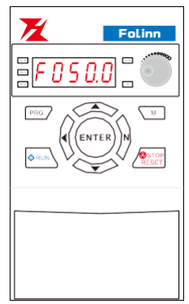


Figure 3-1 H1 series keypad

Item	Structure	Function description
1	F050.0	Display
2	PRG	Program/exit
3	M	Status display interface work as status switch key,other interface work as left shift key
4	N	Reserved key
5	RUN	RUN
6		Potentiometer: refer to parameter P1.63
7		In the mode of program, work as value change key; otherwise, UP/DOWN key, refer to parameter P1.63, P2.03, P2.04
8		
9	ENTER	Enter
10	STOP RESET	STOP/RESET
11		Customization key

4. 2 Indicator light description

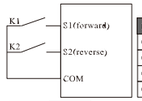
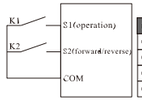
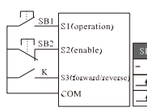
Indicator light	Status	Function description
RUN	light on/ flickering	operating /decelerating
REV	light on	reverse operation
REM	light on	remote operation
ALM	light on	fault indication
M	light on	customization indication, default alarm indication

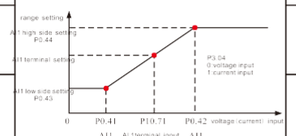
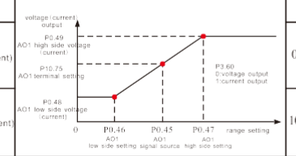
4. 3 Display item description

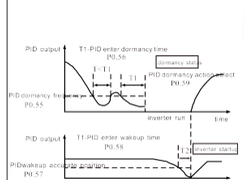
Display code	Item description
F	output frequency
C	output current
U	output voltage
d	DC bus voltage
H	display value 1(P10. 98)
E	display value 2(P10. 99)
A	current alarm
E	current fault

NO.5 Function · Parameter Table

Function code	Function	Description (setting range)	Factory default
P0.09	Parameter operation	1:parameter initialization, initialize parameters except P1.XX, in normal condition, use mode 1 initialization; 2: initialize all parameters	0
P0.10	Setting(frequency) reference F1	0:keypad 1:multi speed 2:AI1 3:AI2 5:communication P1. 63 0:digital setting; 1:potentiometer setting;	0
P0.11	Setting(frequency) reference F2		0
P0.12	setting relation selection	0 F1 1 F2 2 F1+F2 3 F1-F2 4 F1*F2/100 5 maximum value(F1,F2) 6 minimum value(F1,F2) 7 average value(F1,F2) 8 PID(F1,F2) P0.09 P0.10 F1 P0.90 P0.11 P0.09 P0.11 F2 P0.91 P0.12 * principle interpretation: set 0 choose F1 channel setting value; set 1 choose F2 channel setting value; set 2 choose the sum of F1 and F2 channel setting value; set 3 choose the difference of F1 and F2 channel setting value; set 4 choose the product of F1 ans F2 channel setting value divide 100; set 5 choose larger value of F1 and F2; se 6 choose smaller value of F1 and F2; set 7 choose average value of F1 and F2; set 8 choose PID control(F1 is setting, F2 is feedback).	0
P0.13	maximum setting value	- 99999.000~99999.000 * principle interpretation: limit setting value range.The unit of setting source is %, the maximum setting value(P0.13) stands for 100%, take maximum setting value as standard.	50.000
P0.14	motor output frequency upper limit	0.000Hz~1000.000Hz interpretation:motor operation frequency upper limit	55.000Hz
P0.15	multi-speed source	0~11111111 units: S1 tens: S2 hundreds digit: S3 thousands digit: S4 … S4 S3 S2 valid multi-speed 0 0 0 multi-speed 0 0 0 1 multi-speed 1 0 1 0 multi-speed 2 0 1 1 multi-speed 3 1 0 0 multi-speed 4 1 0 1 multi-speed 5 1 1 0 multi-speed 6 1 1 1 multi-speed 7 * P0.15:multi-speed source,select to corresponding external terminal, multi-speed refer to P0.16-P0.23. * eg:selectS2、S3、S4 as valid external terminal to control multi-speed set P0.15=1110, detailed 8 segment corresponding relationship as above table 16 15 14 13 12 11 10 9 8 S14 S13 S12 S11 S10 S9 S8 S7 S6 7 6 5 4 3 2 1 0 S5 S4 S3 S2 S1 communication keypad invalid	0
P0.16	multi-speed 0	- 1000.000%~1000.000% function: multi-speed setting, corresponding to P0.13 maximum setting percentage	0.000%
P0.17	multi-speed 1		0.000%
P0.18	multi-speed 2		0.000%
P0.19	multi-speed 3		0.000%
P0.20	multi-speed 4		0.000%
P0.21	multi-speed 5		0.000%
P0.22	multi-speed 6		0.000%
P0.23	multi-speed 7		0.000%
P0.24	acceleration time	0.000s~3600.000s * principle interpretation: as figure, acceleration time refer to the time from 0HZ accelerate to P0.13 maximum setting value P0.13 output frequency time acceleration time deceleration time	*S
P0.25	deceleration time		
P0.26	Jog frequency	- 1000.000~1000.000 function: set jog frequency, jog command refer to P0.33	10.000%
P0.30	start command source	0:invalid 1:keypad 2:communication 3:S1 4:S2 5:S3 6:S4 … function: select command source(select keypad as command source, then reverse start command, reverse command, jog command, free stop command, safe stop command, pause command all from multi-function key of keypad) * reverse start command: setting value reversed, and give a start command * reverse command: setting value reversed. * jog command: jog command. Priority is higher than start command, lower than stop command.	1
P0.31	reverse start command source		0
P0.32	reverse command source		0
P0.33	Jog command source		1
P0.34	stop command source		0
P0.35	free stop command source		0
P0.36	reset command source		1

Function code	Function	Description(setting range)	Factory default
P0.37	S1 type	0:positive logic 1:negative logic 2:rising edge 3:falling edge function: select external terminal trigger type * principle interpretation: 0:positive logic, high level is valid status, low level is invalid status; 1: negative logic, high level is invalid status, low level is valid status; 2: rising edge, rising edge is valid; 3: falling edge, falling edge is valid. **two-line mode 1:** **the mode is most commonly used two-line mode, enable and direction combined, K1 and K2 control forward/reverse of motor**  K1 K2 operation command OFF OFF stop OFF ON reverse ON OFF forward ON ON stop parameter no. setting vlue description P0.36 3 start command source Is S1 P0.31 4 reverse start command source Is S2 P0.37 0 S1 type Is posltlve logic P0.38 0 S2 type is negative logic	0
P0.38	S2 type	**two-line mode 2:** enable and direction seperated, in this mode K1 is enable terminal, direction is controlled by K2.  K1 K2 operation command OFF OFF stop OFF ON stop ON OFF forward ON ON reverse parameter no. setting value description P0.36 3 start command source Is S1 P0.32 4 reverse command source is S2 P0.37 0 S1 type Is posltlve logic P0.38 0 S2 type Is posltlve logic **three line mode 1:** this mode define SB2 as enable terminal, operation command is generated by SB1 or SB3, control operation direction at the same time. inverter is running and SB2 is in closed state, terminal SB1 or SB3 generates a rising edge signal to control inverter operation and direction; disconnection SB2 to stop inverter. SB1 SB2 SB3 operation command – 0 – stop ⎍ 1 – forward – 1 ⎍ reverse parameter no. setting value description P0.36 3 start command source Is S1 P0.31 5 reverse start command source Is S3 P0.34 4 stop command source Is S2 P0.37 2 S1 type Is rising edge P0.38 1 S2 type is negative logic P0.39 2 S3 type is rising edge	0
P0.39	S3 type	**three line mode 2:** this mode define SB2 as enable terminal, operation command is generated by SB1, direction command is controlled by K. inverter is running and SB2 is in closed state, terminal B1 generates a rising edge signal to control inverter operation, K control operation direction; disconnection SB2 to stop inverter.  SB1 SB2 K operation command – 0 – stop ⎍ 1 OFF forward ⎍ 1 ON reverse parameter no. setting value description P0.36 3 start command source Is S1 P0.32 5 reverse command source Is S3 P0.34 4 sep command source Is S2 P0.37 2 S1 terminal command type is rising edge P0.38 1 S2 terminal command type is negative logic P0.39 0 S3 terminal command type is positive logic	0
P0.40	Y1 terminal source	0:always 0 1:always 1 2:stopped 3:running 4:fault 5:alarm 6:reversing 64:STO status 100~9999:high level parameter * principal interpretation: terminal source setting value ≥100(address mode), the address is selected parameter no., actual value is decided by current value of selected parameter no. terminal source function description as below: setting value function description 0 always 0 Y1 terminal output always 0 1 always 1 Y1 terminal output always 1 2 stopped in stopped status Y1 terminal output is 1 3 running in running status Y1 terminal output is 1 4 fault in fault status Y1 terminal output is 1 5 alarm in alarm status Y1 terminal output is 1 6 reversing in reversing status Y1 terminal output is 1 64 STO status in STO status Y1 terminal output is 1 100~9999 high level parameter	3

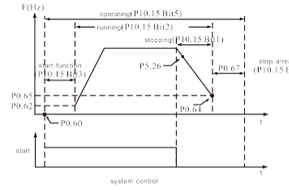
Function code	Function	Description(setting range)	Factory default
P0.41	AI1 low side voltage(current)	-999999.000~999999.000 ☉function: analog input AI1 setting *AI1 low side voltage(current): set the lowest voltage(current) of input signal. *AI1 high side voltage(current): set the highest voltage(current) of input signal. *AI1 low side setting: set corresponging value of low side voltage(current). *AI1 high side setting: set corresponding value of high side voltage(current). 	0.000V(mA)
P0.42	AI1 high side voltage(current)		10.000V(mA)
P0.43	AI1 low side setting		0.000%
P0.44	AI1 high side setting		100.000%
P0.45	AO1 signal source	0:always 0 1:always 10V/20mA 2:output frequency 3:motor current 4:output voltage 5:motor torque 6:output power 7:setting frequency 100~9999:high leveл parameter ** principal interpretation: AO1 signal source function description as below: setting value function description 0 always 0 analog AO1 output always 0 1 always 10V/20mA analog AO1 output always 1 2 output frequency analog AO1 output is output frequency 3 motor current analog AO1 output is motor current 4 output voltage analog AO1 output is output voltage 5 motor torque analog AO1 output is motor torque 6 output power analog AO1 output is output power 7 setting frequency analog AO1 output is setting frequency 100~9999 high level parameter	2
P0.46	AO1 low side setting	-999999.000~999999.000 * AO1 low side setting: set AO1 source minimum value. * AO1 high side setting: set AO1 source maximum value. * AO1 low side voltage(current): set the lowest voltage(current) of output signal. * AO1 high side voltage(current): set the highest voltage(current) of output signal. 	0.000
P0.47	AO1 high side setting		50.000
P0.48	AO1 low side voltage(current)		0.000V(mA)
P0.49	AO1 high side voltage(current)		10.000V(mA)
P0.50	PID proportional gain	0.000%~10.000% Determine the adjustment intensity of the whole PID regulator, bigger proportional gain is, bigger adjustment intensity is.	0.010%
P0.51	PID integral gain	0.001S~9999.000S Determine PID regulator to the integral speed adjustment of the diviation of PID feedback quantity and given quantity. smaller integral gain is, greater adjustment intensity is.	10.000S
P0.52	PID output upper limit	-1000.000~1000.000 PID adjust the output maximum value, if higher than maximum value, then output PID output upper limit, relative to P0.11 maximum setting value percentage.	100.000%
P0.53	PID output lower limit	-1000.000~1000.000 PID adjust the output minimum value, if lower than minimun value, then output PID output lower limit, relative to P0.11 maximum setting value percentage.	0.000%
P0.54	PID range	0.001~99999.000 set according to actul feedback valu, if lower than feedback value, then PID invalid.	100.000
P0.55	PID dormancy frequency	0.000~500.000 set dormancy accurate frequency, relative to P0.11 maximum setting value percentage.	0.000%
P0.56	PID enter dormancy time	0.000~3600.000 inverter reach enter dormancy time and meet to dormancy time, enter dormancy.	0.000s
P0.57	PID wakeup deviation	0.000~100.000 percentage based on setting value.	0.000%
P0.58	PID enter wakeup time	0.000~3600.000 inverter reach wakeup deviation and meet to wakeup time, operation again.	0.000s
P0.59	PID dormancy action	0:no dormancy; 1:PID stop; 2:decelerate to stop; 3:free stop; 4:pause; 5:operate in lowest frequency PID enter dormancy according to setting dormancy action.	0



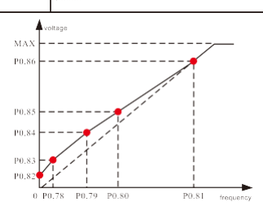
pressure sensor range:1.6MPa(1MPa≈10kg)PIDcontrol parameter

parameter no.	parameter name	setting value	description
P1.63	keypad setting source	0	digital keypad:P2.92 setting
P2.92	setting value	10	PID digital keypad set 10kg
P0.11	feedback value	2	PID analog AI1 feedback
P0.12	setting relationship selection	5	PID enable
P0.44	AI1 high side setting	16	AI1 high side set 16kg 0~10V corresponding to 0~16kg)
P0.50	PID proportional gain	0.01%	according to field application to set PID intensity grades
P0.51	PID integral gain	10s	according to field adjustment to set PID intensity grades
P0.52	PID range	16	PID set feedback range 16kg
P0.55	PID dormancy frequency	10%	PID dormancy frequency set 5Hz (maximum default setting value 50Hz)
P0.56	PID dormancy time	5s	PID dormancy time 5s
P0.57	PID wakeup deviation	20%	PID wakeup deviation 20%
P0.58	PID enter wakeup time	10s	PID wakeup time10s
P0.59	PID dormancy action	2	PID deceleration to stop after dormancy, set 2 if don't demand
P1.68	displayed value 1 source	1099	keyboard display PID setting pressure
P1.69	displayed value 2 source	1091	keyboard display PID feedback pressure
P2.03	(UP) command source	1	(UP) command from keyboard
P2.04	(DOWN) command source	1	(DOWN) command from keyboard

Function code	Function	Description(setting range)	Factory default
P0.60	startup function	0:start frequency operation 1:speed start 2:DC injection * principle interpretation: 0:no frequency output startup mode, meet to P0.61 startup time setting, P0.62 start frequency start to startup operation. 1:speed start, search rotating motor speed, smooth start without impact from search speed. 2:DC injection, inverter startup by "DC injection before startup" mode.	0
P0.61	startup time	0.000S~60000.000S principle interpretation: when system startup,setting start function work within setting start time.	0.000S
P0.62	start frequency	0.000Hz~100.000Hz principle interpretation: start function finish, if setting frequency bigger than start frequency, system start from start frequency; if setting frequency smaller than start frequency, system start from setting frequency.	0.000Hz
P0.63	DC injection current	0.000%~200.000% ☉function: set magnitude of DC injection current. (set P0.60=2 as DC injection) * principle interpretation: start mode is DC injection, need to set magnitude of DC braking current, 100% corresponding to inverter rated current.	100.000%
P0.64	stop function	units:0:free stop; 1:DC braking; tens:1:accurate stop * principle interpretation: during stop process, stop function starts work when output frequency smaller than stop frequency. accurate stop: stop at any speed motor rotation turns are same, realize consistent repeatability of stop position. To get the best efficiency, deceleration time not to trigger over pressure and over loss rate prevention function as long as possible.	0
P0.65	stop frequency	0.000Hz~1000.000Hz interpretation refer to 0.64	0.000Hz
P0.66	DC braking current	0.000%~150.000% set DC braking current.	100.000%
P0.67	DC braking time	0.000s~1000.000s set DC braking time.	0.000s
P0.68	braking resistor mode	0:invalid 1:valid function: braking resistor braking mode parameter set	1



P0.70	control mode	0:VF 1:vector control 1 function:select motor control algorithm	1
P0.71	carrier frequency	2kHz~16kHz ☉function: set carrier frequency	*kHz
P0.72	motor power	0.000kW~100000.000kW ☉function: set motor parameters	*kW
P0.73	motor voltage	0V~1000V ☉function: set motor parameters	*V
P0.74	motor frequency	1Hz~3000Hz ☉function: set motor parameters	*Hz
P0.75	motor current	0.00A~1000.00A ☉function: set motor parameters	*A
P0.76	motor speed	10rpm~65535rpm ☉function: set motor parameters	*RPM
P0.78	VF curve F1	0Hz~3000Hz ※ principle interpretation: set V/F curve under V/F control mode. When vector control 1 is adopted, set the corresponding frequency points of V/F curve to adjust control characteristics of the corresponding control points.	50Hz
P0.79	VF curve F2		50Hz
P0.80	VF curve F3		50Hz
P0.81	VF curve F4		50Hz
P0.82	VF curve V0	0V~10000V ※ principle interpretation: set V/F curve under V/F control mode. When vector control 1 is adopted, set the corresponding voltage points of V/F curve to adjust control characteristics of the corresponding control points.	0V
P0.83	VF curve V1		*V
P0.84	VF curve V2		*V
P0.85	VF curve V3		*V
P0.86	VF curve V4		*V



P1.41	local address	0~247 ☉function: set inverter local address	1
P1.42	baud rate	0:2400bps 1:4800bps 2:9600bps 3:19200bps 4:38400bps 5~10:reserved ☉function: Communication port configuration	3

Function code	Function	Description(setting range)	Factory default
P1.43	odd-even check	0:no check 1:even check 2:odd check ☉function: Communication port configuration	0
P1.44	data bits	8~9 ☉function: Communication port configuration	8Bits
P1.45	stop bits	0.0~2.0 ☉function: Communication port configuration	1.0Bit
P1.47	parameter decimal place mode	0~123 units: 0:remain decimal place,1:decimal place change to 2 places, 2:decimal place change to 1 place, 3:no decimal place; tens:0:remain decimal place,1:decimal place change to 1 place, 2:no decimal place; hundreds' digit: 0:remain decimal place,1:no decimal place; * principle interpretation: parameter decimal place mode only work to communication, which change parameter value during communication transmission. * P1.47 units aim at parameters with 3 decimal places; 0:remain decimal place,1:decimal place change to 2 places, 2:decimal place change to 1, 3:no decimal place. * P1.47 tens aim to parameters with 2 decimal places; 0:remain decimal place,1:decimal place change to 1 place, 2:no decimal place. * P1.47 hundreds' digit aim to parameters with 1 place: 0:remain decimal place,1:no decimal place.	0
P1.63	keyboard setting source	0:keyboard digital setting; 1:keyboard potentiometer setting; * principle interpretation: select keyboard setting value source, digit setting(P2.92) or keyboard potentiometer.	1
P2.03	(UP) command source	units: keyboard; tens: communication; hundreds' digit: S1; thousands' digit: S2; ……	0
P2.04	(DOWN) command source		0
P10.61	history fault no. 1	–	0
P10.62	history fault no. 2	–	0
P10.63	history fault no. 3	–	0
P11.10	output frequency upon current fault	–	0.0Hz
P11.11	output current upon current fault	–	0.00A
P11.12	bus voltage upon current fault	–	0.0V
P11.13	inverter temperature upon current fault	–	0℃
P11.14	S terminal status upon current fault	–	0
P11.15	Y terminal status upon current fault	–	0
P11.16	cumulative running time upon current fault	–	0h

NO.6 Fault code

Fault Code	Protection function	Description
1	protection function	inverter components fault or software fault
4	ground fault	Abnormal resistance to ground, cause electric leakage
5	short circuit to ground	short circuit to ground
6	output short circuit	inverter cut off output when inverter output current is 250% larger than inverter rated current.
7	output over current	inverter cut off output when inverter output current is 200% larger than inverter rated current.
8	DC bus over voltage	inverter cut off output if main circuit DC voltage is higher than 400V(220V motor type) or 800V(380V motor type) when motor decelerates.
9	DC bus low voltage	input voltage decrease, inverter cut off output if main circuit DC voltage too low.
10	inverter over heat	inverter cut off output if cooling fin is over heat.
11	self-learning failure	self-learning parameter wrong or motor abnormal.
13	rectifier over heat	rectifier module over heat.
14	U phase loss	output U phase loss.
15	V phase loss	output V phase loss.
16	W phase loss	output W phase loss.
19	no motor connect	motor lost connection during operation.
20	input phase loss	power input phase loss.
21	inverter over load	inverter cut off output when inverter output current exceed inverter rated level (150% 60S).
22	over torque	motor over torque
24	motor over heat	motor temperature is over heat.
25	motor over load	inverter cut off output when inverter output current exceed motor rated level (150% 60S).
26	current limit	output current exceed setting limit threshold.
63	user fault	user defined fault(P3.08)