MR-HPHD-1C Series Frequency Converter
User Manual

Mactrol-Refu Pvt. Limited

Thank you for your select and use our MR-HPHD-1C series frequency converter products.

Please read this specification carefully before use to make ensure that correct and safety use this product.

Please must read [Safety notices] carefully before use.

Please safety keep this operating specification, convenient for check and read when required. Any questions please contact our customer service or technical support, our professionals will do best to service for you.

This operating manual provided the relate information of MR-HPHD-1C Series converter, the contents include:

◊ Safety notices of frequency converter
◊ Installation and inspection of frequency converter
◊ Wiring instruction of frequency converter
◊ Operating instruction of frequency converter
◊ All parameters instruction
◊ Communication agreement instruction
◊ Troubleshooting

This operating manual suitable to be consulted by the below operators:

◊ System design and model select staffs
◊ Installation or wiring staffs
◊ Debugging staffs
◊ Maintain or maintenance staffs

Content

Chapter 1 Product information

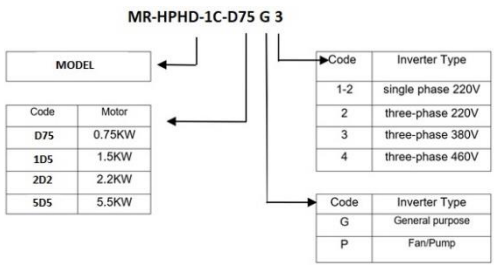
1.1 Safety information and notices

Safety definition: the safety notices in this manual divided into the below two types:

4 Danger: the danger caused by that operation not according to requirements maybe caused serious hurt, even though dead；

A Attention: the danger caused by that operation not according to requirements maybe caused medium hurt or minor hurt and equipment damaged; please read this chapter carefully when user install, debug and maintain this system, must operating according to the required safety notices in the content of this chapter. Any hurt and loss which caused by the operation which not according to the stipulates all are unconcerned with our company.

1.2 Naming rules

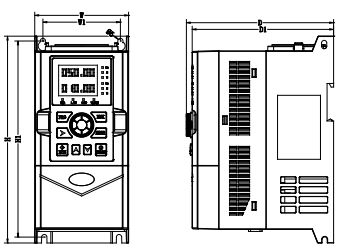


1.3 MR-HPHD-1C Series Technical Data

Frequency converter Model	Rated power (KW)	Rated output current (A)	Adapted motor kW	Adapted motor HP
Single phase power supply: 220V,50Hz/60Hz				
MR-HPHD-1C-D75G1	0.75	4.0	0.75	1
MR-HPHD-1C-1D5G1	1.5	7.0	1.5	2
MR-HPHD-1C-2D2G1	2.2	9.6	2.2	3
Three phase power supply: 380V, 50Hz/60Hz				
MR-HPHD-1C-D75G3	0.75	*2.1*	0.75	1
MR-HPHD-1C-1D5G3	1.5	3.8	1.5	2
MR-HPHD-1C-2D2G3	2.2	5.1	2.2	3
MR-HPHD-1C-004G3	4	9	4	5.5
MR-HPHD-1C-5D5G3	5.5	13	5.5	7.5
MR-HPHD-1C-7D5G3	7.5	17	7.5	10
MR-HPHD-1C-011G3	11.0	25	11	15
MR-HPHD-1C-015G3	15.0	32	15	20
MR-HPHD-1C-018G3	18.0	37	18	25

Table 1-1 MR-HPHD-1C Series converter model and technical data

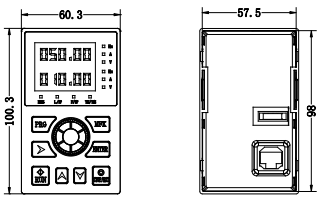
1.4 Product profile figure and installation hole size



Schematic diagrams of the dimensions of the frequency converter

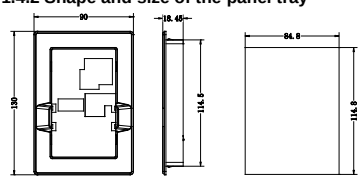
1.4.1 Operation panel shape

Model Type	Outsize (mm)			Outsize (mm)			Mounting hole (d)
	H	W	D	H1	W1	D1	
MR-HPHD-1C-D40G1	197.2	89.6	139	187	74	135	Φ5
MR-HPHD-1C-D75G1							
MR-HPHD-1C-1D5G1							
MR-HPHD-1C-2D2G1							
MR-HPHD-1C-D75G3							
MR-HPHD-1C-1D5G3							
MR-HPHD-1C-2D2G3							
MR-HPHD-1C-004G3	202	102	162	190	90	158	Φ5.6
MR-HPHD-1C-5D5G3							
MR-HPHD-1C-7D5G3	242.5	125	169.5	227	108.5	166	Φ6.4
MR-HPHD-1C-011G3							
MR-HPHD-1C-015G3	297	165	206.2	278.5	147	202	Φ7
MR-HPHD-1C-018G3							



Keyboard direct opening size: 57.5mm* 98mm

1.4.2 Shape and size of the panel tray



Keyboard holder opening size: 84.8mm*114.8mm

Chapter *2* Electric installations

2.1 Main electric circuit terminals and wiring

1)Frequency converter main circuit terminal instruction：

Terminal marks	Name	Instruction
R.S.T/L.N	Power supply input terminals	Connection point of three-phase 380V /single-phase 220V AC power supply
P+.PB	Brake electric resistance connect terminals	Connect brake electric resistance
U.V.W	Frequency converter output terminals	Connect three phase motor
⏚	Grounding terminals	Grounding terminals

2.1.2 Wiring method of frequency converter control circuit

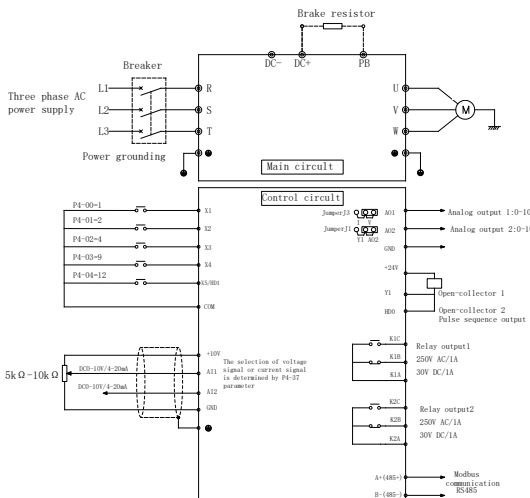


Fig 2-2 Wiring method of frequency converter control circuit

2.1.3 Control terminals instruction

The control circuit terminals layout diagram shown as the below:

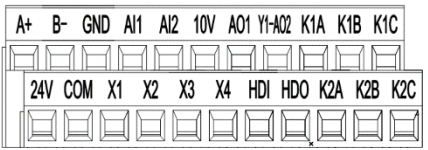


Fig 2-4 MR-HPHD-1C (isolated version) control circuit terminal layout

2.1.4 Control terminal function instruction:

Category	Terminal symbol	Terminal name	Function instruction
Power supply	10V-GND	Outer connect 10V power supply	Generally, 150mA (with short circuit protection) used as the working power supply of outer connect electric potential device, electric potential device electric resistance value range: lkQ ～5kQ
	24V-COM	Outer connect 24V power supply	Outer provide +24V power supply, generally, it used as working power supply of digit input and output terminal and outer connect sensor power supply The max output current: 200mA
Analog terminal	AIl-GND	Analog quantity input terminal 1	1.Input range: DC0V~ 10V / Oma"- 20mA, which is determined by parameter p4-37 2.Input impedance: 22KΩ for voltage input and 500Ω for current input
	AI2-GND	Analog quantity input terminal 2	1.Input range: DC0V~ 10V / 0-20mA, which is determined by parameter P4-37 2.Input impedance: 22KΩ for voltage input and 500Ω for current input
	AO1-GND	Analog quantity input terminal 1	Output voltage range: 0V-10V Output current range: 0mA ~ 20mA, 4~20mA (P5-23 optional)

Digit input	X1-GND	Digit input 1	HDI still can be as high speed pulse input passageway except the characteristics of XI-X4. The highest input frequency: 50kHz Input impedance: lkQ Electric level input voltage range: 5V-30V
	X2-GND	Digit input 2	
	X3-GND	Digit input 3	
	X4-GND	Digit input 4	
	HDI-GND	Digit input 5	
	A+ B-	RS485 communication	A+ is positive input of485 communication difference signal, B- is negative input of difference signal
Digit output	Y1-GND	Collector open circuit output	As the collector open circuit output terminal
	HDO-GND	High speed pulse output	Restrained by function code P5-00 "HDO terminal output mode selection" The highest frequency achieved 50kHz when as high speed pulse output;Same specification with Y1 when as collector open circuit output
	K1A-K1B-K1C	Electric relay 1 terminal	Contact description: A:public point B:normally close point Cmormally open point Contact drive capacity:AC250Vj 3A, COSgO.4. DC30V.1A
	K2A-K2B-K2C	Electric relay *2* terminal	

2.1.5 Signal in put terminal wiring instruction:

Because the weak analog voltage signal especially been outer disturbed easily, so, generally need shielded cable, and the cable distribute distance should do best to be short, not exceed 20m. The analog signal source side need additionally add filter wave electric capacitor or iron-oxygen magnetism in the place where some analog signals seriously disturbed.

Chapters Operating display

3.1 Operating and display interface instruction

Able to process the operations such as modify the function parameters of frequency converter, monitor working status of frequency converter and control frequency converter running (start and stop) through operating panel, the profile and function area shown as the below diagram:

Fig 3-1 Schematic diagram of operation panel

1) Function indicate lamp instruction:

◊ RUN: lamp extincted means the frequency converter be at stop machine status, lamp lighting means the frequency converter be at running status.

L/R extincted	Panel start-stop control
L/R normally	lighting Terminal start-stop control
L/R flashing	Communication start-stop control

L/R: keyboard operation, terminal operation and remote operation (communication control) indicate lamp:

◊ FWD/REV:forward and reverse running indicate lamp, lamp lighting means it be at forward status.

◊ TUNE/TC: tune/torque control/failure indicate lamp, lamp lighting means it be at torque control mode, lamp slow flashing means it be at tune status, lamp quick flashing means it be at failure status.

2)Unit indicate lamp：

Hz	Frequency unit
A	Current unit
V	Voltage unit
RPM(Hz+A)	Speed unit
%(A+V)	Percentage

3)Digit display area:

5 bit LED display, able to display the setting frequency and output frequency, various monitor data and alarm code, etc.

4)Keyboard button description table

Keys	Key name	Key function
PRG	Programming key	Level 1 menu enter into or withdraw
ENTER	Confirm key	Level to level enter into menu tableau, confirm setting parameters
▲	Progressively increase key	Data or function code progressively increase
▼	Progressively reduce key	Data or function code progressively reduce
►	Shift key	Able to circling select the display parameters underthe stop machine indicate interface and running display interface; able to select the modify bit of parameter when modifying parameters
RUN	Running key	Used in running operation under keyboard operating method
STOP/RESET	Stop/reset	Press this key able to used in stop running operation at running status; able to be used in reset operation at feilure alarm status, the characteristics of this key restrained by function code P7-02.
MFK	Multiply functions select key	Process function shift selection according to P7-01

Table 3-1 Keyboard function table

Chapter4 Function parameters table

4.1 Bask function parameters simple table

"☆" : means the setting value of this parameter in frequency converter be at stop machine and running status, all can be modified;

"★" :means the setting value of this parameter in frequency converter be at running status, can' t be modified;

"•" :means the value of this parameter is actual test record value, can' t be modified;

FO group-basic running parameters

Function code	Name	Setting range	Leave factory value	Property	EDC address
P0-01	Order source select	0:no speed sensor vector control 2: V/F control	2	★	61441
P0-02	Order source select	0: panel order passageway (LED-extincted) 1: Terminal order passageway (LED lighting) 2: Communication order passageway (LED flashing)	0	☆	61442

Function code	Name	Setting range	Leave factory value	Property	EDC address
P0-03	Main frequency source X selection	0: Digit setting (preset frequency P0-08,UP/DOWN able to be modified, not memory when power off) 1: Digit setting (preset frequency P0-08,UP/DOWN able to be modified, memory when power off) 2 All 3: AI2 4 keyboard electric potential device 5: HDI pulse setting (X5) 6: multi ply section orders 7: simple and easy PLC 8: PID 9: Communication setting	4	★	61443
P0-04	Assist frequency source Y selection	Same to P0-03 (Main frequency source X selection)	0	★	61444

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P0-05	Frequency source Y range select when overlaying	0:opposite to the max frequency 1:opposite to frequency source X	0	☆	61445
P0-06	Frequency source Y range select when	0% ～150%	100%	☆	61446
P0-07	Frequency source overlay method select	The unit: frequency source select 0: main frequency source X 1: main and assist arithmetic (arithmetic method decided by the decade) 2: main frequency source X and assist frequency source Y shift 3: main frequency source X and main/assist arithmetic result shift 4: Assist frequency source Y and main/assist arithmetic result shift Decade: frequency source main/assist arithmetic relationship 0: main + assist 1: main-assist 2: the max value from the both 3:the min value from the both 4:mainx assist	00	☆	61447

Function code	Name	Setting range	Leave factory value	Property	EDC address
P0-08	Preset frequency	0.00Hz ～the max frequency (P0-10)	50.00Hz	☆	61448
P0-09	Running direction	0: accordance direction 1: opposite direction	0	★	61449
P0-10	The max frequency	50.00Hz ～320.00Hz (P0-22=2) 50.0Hz ～3200.0Hz (P0-22=l)	50.00Hz 50.0Hz	★	61450
P0-11	Up limit frequency source	0: setting 1：All 2:AI2 3: keyboard electric potential 4: HDI pulse setting 5: communication setting	0	★	61451
P0-12	Up limit frequency	Down limit frequency P0-14~The max frequency P0-10	50.00Hz	☆	61452
P0-13	Up limit frequency deviation	0.00Hz ～The max frequency P0-10	0.00Hz	☆	61453
P0-14	Down limit frequency	0.00Hz~ Up limit frequency P0-12	0.00Hz	☆	61454
P0-15	Carriage wave frequency	0.5KHZ ～16.0KHZ	0.00Hz	☆	61455
P0-16	Carriage wave frequency adjusted along with temperature	0:No 1:Yes	0	☆	61456

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P0-17	Accelerate timel	0s ~ 65000s (P0-19=0) 0.0s ～6500.0s (P0-19=l) 0.00s ~ 650.00s (P0-19=2)	Model confirmation	☆	61457
P0-18	Moderate time 1				61458
P0-19	Accelerate and moderate time unit	0: accordance direction 1: opposite direction	0	★	61459
P0-21	Assist frequency source when overlaying Deviate frequency	0.00Hz ～The max frequency P0-10	0.00Hz	☆	61460
P0-22	Up limit frequency source	1:0.1Hz 2:0.01Hz	2	★	61461
P0-23	Digit setting frequency Stop machine memory	0: not memory 1: memory	0	☆	61462
P0-24	Remain	-	1	☆	61463
P0-25	Accelerate and moderate time Datum frequency	0: The max frequency (P0-10) l: setting frequency	0	★	61464

Function code	Name	Setting range	Leave factory value	Property	EDC address
P0-27	Order source binding frequency source	The unit: operating panel order binding frequency source select 0:no binding 1: digit setting frequency 2: All 3:AI2 4: keyboard electric potential 5: HDI pulse setting (X5) 6: multiply section speed 7: simple and easy PLC 8: PID ^communication setting Decade: terminal order binding frequency source select Hundredsxom munication order binding frequency source select Kilobit: automatically running binding frequency source select	0000	☆	61467

4.1 Basic function parameters simple table

Fl group-motor parameters

Function code	Name	Setting range	Leave factory value	Property	EDC address
P1-00	Order source select	0：General asynchronous motor 1:frequency converter asynchronous motor	0	★	61441
P1-01	Motor rated power	0.1 ～1000KW	Model confirmation	★	61697
P1-02	Motor rated voltage	1V ~ 2000V	Model confirmation	★	61698
P1-03	Motor rated current	0.01A ～655.35A	Model confirmation	★	61699
P1-04	Motor rated frequency	0.01Hz~The max frequency	Model confirmation	★	61700
P1-05	Motor rated Speed	1 ~ 65535rpm	Model confirmation	★	61701
P1-10	Asynchronous motor unload current	0.01 ～P1-03	Tune parameters	★	61706
P1-37	Tune select	0:no operation 1:asynchronous motor static tune 2:asynchronous motor complete tune 3: static tune 2	0	★	61733

P2 group-vector parameters					
Function code	**Name**	**Setting range**	**Leave factory value**	**Property**	**EDC address**
P2-00	Speed ring ratio gain 1	1-100	30	☆	61952
P2-01	Speed ring integral timel	0.01 ～10.00s	0.50s	☆	61953
P2-02	Shift frequency 1	0.00-P2-05	5.00Hz	☆	61954
P2-03	Speed ring ratio gain 2	1~100	20	☆	61955

4.1 Basic function parameters simple table

P2 group-vector parameters

Function code	Name	Setting range	Leave factory value	Property	EDC address
P2-04	Speed ring integral time 2	0.01s ～10.00s	1.00s	☆	61956
P2-05	Shift frequency 2	P2-02 ~ The max frequency	10.00Hz	☆	61957
P2-06	Vector control speed difference gain	50 ～200%	150%	☆	61958
P2-07	Speed ring filter wave time constant	0.000 ～1.000s	0.050s	☆	61959
P2-08	Vector control over excitation gain	0 ～200	64	☆	61960

Function code	Name	Setting range	Leave factory value	Property	EDC address
P2-09	Torque up limit source under speed control method	0:function code P2-10 setting l:AI1 2: AI2 3:keyboard electric potential 4:PULSE pulse setting 5:communication setting 6: MIN (Al012) 7: MAX (All,Al2) Full range of item 1-7 corresponding P2-10	0	☆	61961
P2-10	Torque up limit digit setting under speed control method	0.0% ～200.0%	150.0%	☆	
P2-13	Excitation adjustment ratio gain	0～60000	2000	☆	61965
P2-14	Excitation adjustment integral gain	0~ 60000	1300	☆	61966

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P2-15	Torque adjustment ratio gain	0 ～60000	2000	☆	61967
P2-16	Torque adjustment integral gain	0 ～60000	1300	☆	61968
P2-17	Speed ring integral property	The unit: integral separate 0:invalid 1:valid	0	☆	61969

P3 group-V/F control parameters

Function code	Name	Setting range	Leave factory value	Property	EDC address
P3-00	VF curve setting	0：line\^F 1:multiply points V/F 2:square V/F 3:1.2 power V/F 4:1.4 power V/F 6:1.6 power V/F 8:1.8 power V/F 9~ll:remain	0	★	62208
P3-01	Torque promote	0.0%: (automatic torque promote)0.1 ～30.0%	Model confirmation	☆	62209
P3-02	Torque promote stop frequency	0.00Hz ～The max frequency	50.00Hz	★	62210
P3-03	Multi points VF frequency point 1	0.00Hz ～P3-05	1.30Hz	★	62211
P3-04	Multi points VF voltage pointl	0.0% ~ 100.0%	15.0%	★	62212
P3-05	Multi points VF frequency point 2	P3-03 ～P3-07	5.0Hz	★	62213
P3-06	Multi points VF voltage point 2	0.0% ～100.0%	20.0%	★	62214
P3-07	Multi points VF frequency points	P3-05 ~ motor rated frequency (P1.04)	50.0 Hz	★	62215

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P3-08	Multi points VF voltage point 3	0.0% ~ 100.0%	100.0%	★	62216
P3-09	speed difference compensate gain VF	0.0% ～200.0%	0.0%	☆	62217
P3-10	VF excitation gain	0 ～200	64	☆	62218
P3-11	VF oscillation restrain gain	0～100	Model confirmation	☆	62219

P4 group-input terminal

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-00	XI terminal function select	0:no function l:forward running (FWD) 2:reverse running (REV) 3:three line type running control 4:forward crawl (FJOG) 5:reverse crawl (RJOG) 6:terminal UP 7:terminal DOWN 8:freely park 9:failure reset (RESET) 10:running pause 11:outer failure normally open input 12：multi section order terminal 1 13:multi section order terminal 2 14：multi section order terminal 3 15:muIti section order terminal 4 16:Accelerate and moderate time select terminal 1 17:Accelerate and moderate time select terming 12 18:Frequency source shift 19:UP/D0WN setting reset (terminal/keyboard) 20:Running order shift terminal 1 21:Accelerate and moderate forbid 22:PID Stop 23:PLC status reset 24:Swingwave pause 25:Counter input 26:Counter reset 27: Length counting input 28:Length reset 29:Torque control forbid	1	★	62464
P4-01	X2 terminal function select		2	★	62465
P4-02	X3 terminal function select		4	★	62466
P4-03	X4 terminal function select		9	★	62467

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-03	X4 terminal function select	30:HDI pulse frequency input(X5) 31:Remain 33:Outer failure normally close input 34:Frequency modification enable 35:PID act direction select reverse 36:Outer park terminall 37:Running order shift terminal 2 38:PID integral pause	9	★	62467
P4-04	HDI (x5) terminal function selection	39:Frequency source X and preset freq uency shift 40:Frequency source Y and preset frequency shift 43:PID parameter shift 44:user self defined failure 1 45:user self defined failure 2 46:speed contra l/torque control shift 47:emergency stop 48:outer park terminal 2 49:moderate DC brake 50:thistime running time reset	12	★	62464
P4-10	Terminal X filter wave time	0.000s ～1.000s	0.010s	☆	62474
P4-11	Terminal command mode	0:two line1 1:two line 2 2:three line1 3:three line 2	0	★	62475

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-12	Terminal UP/DOWNN change ratio	0.001Hz/s ～65.535Hz/s	1.00Hz/s	☆	62476
P4-13	Min in put of AI curve 1	0.00V-P4-15	O.OOv	☆	62477
P4-14	Min input corresponding setting of AI curve 1	-100.0% ～+100.0%	0.0%	☆	62478
P4-15	Max in put of AI curve 1	P4-13 ～+10.00V	10.00V	☆	62479
P4-16	Max input corresponding setting of AI curve 1	-100.0% ～+100.0%	100.0%	☆	62480
P4-17	Al1 filter wave time	0.00s ～10.00s	0.10s	☆	62481
P4-18	Min in put of AI curve 2	0.00V ～P4-20	O.OOv	☆	62482

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-19	Min input corresponding setting of AI curve 2	-100.0% ～+100.0%	0.0%	☆	62483
P4-20	Max input of AI curve 2	P4-18 ～+10.00V	10.00V	☆	62484
P4-21	Max input corresponding setting of AI curve 2	-100.0% ～+100.0%	100.0%	☆	62485
P4-22	AI2 filter wave time	0.00s ~ 10.00s	0.10s	☆	62486
P4-23	Min input of AI curve 3	0.00V ～P4-25	0.50V	☆	62482
P4-24	Min input corresponding setting of AI curve3	-100.0% ～+100.0%	0.0%	☆	62483

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-25	Max input of AI curve3	P4-23 ～+10.00V	10.00V	☆	62484
P4-26	Max input corresponding setting of AI curve3	-100.0%— +100.0%	100.0%	☆	62485
P4-27	AI3 filter wave time	0.00s ～10.00s	0.10s	☆	62486
P4-28	Min in put of HDI pulse	0.00kHz ～P4-30	0.00kHz	☆	62492
P4-29	Min input corre-sponding setting of HDI pulse	-100.0% ~ 100.0%	0.0%	☆	62493
P4-30	Max in put of HDI pulse	P4-28 ～50.00kHz	50.00 kHz	☆	62494

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-31	Max input setting of HDI pulse	-100.0% ～100.0%	100.0%	☆	62495
P4-32	HDI pulse filter wave time	0.00s ～10.00s	0.10s	☆	62496
P4-33	AI curve select	The unit: All curve select 1:curve 1 (2 points, P4-13 ~ P4-16) 2:curve 2 (2 points, P4-23 ～ P4-26) 3:curve 3 (2 points, P4-23 ~ P4-26) Decade: AI2 curve select, same to above Hundreds: AI3	321	☆	62497
P4-34	AI lower than min input setting select	The unit: All lower than the min in put setting select Oxorrespondingto min input setting 1:0.0% Decade: AI2 lower than min input setting select, same to above Hundreds: Al3 lower than min input setting select, same to above	000	☆	62497

Function code	Name	Setting range	Leave factory value	Property	EDC address
P4-35	Terminal X valid mode select 1	0:high electric level valid 1:low electric level valid The unit:Xl Decade: X2 Hundreds: X3 Kilobit: X4 Myriabit: X5	00000	☆	62498
P4-37	Al input voltage/ current select	The unit: all Decade: AI2 0:voltage input 1:current input	10	★	62499
P4-38	X1 conduct delay time	0.0s ～6553.5s	0.0s	★	62502
P4-39	X2 conduct delay time	0.0s ～6553.5s	0.0s	★	62503
P4-40	X3 conduct delay time	0.0s ～6553.5s	0.0s	★	62504
P4-41	X4 conduct delay time	0.0s ～6553.5s	0.0s	★	62505
P4-42	HDI (X5) conduct delay time	0.0s ～6553.5s	0.0s	★	62506
P4-48	XI conduct delay time	0.0s ～6553.5s	0.0s	★	62507
P4-49	X2 broken delay time	0.0s ～6553.5s	0.0s	★	62508
P4-50	X3 broken delay time	0.0s ~ 6553.5s	0.0s	★	62509
P4-51	X4 broken delay time	0.0s ～6553.5s	0.0s	★	62510
P4-52	HDI (X5) broken delay time	0.0s ～6553.5s	0.0s	★	62511

4.1 Basic function parameters simple table

P5 group-output terminal

Function code	Name	Setting range	Leave factory value	Property	EDC address
P5-00	HDO terminal output mode select	0:high speed pulse output (HD0) l:terminal switch quantity output (FMR)	0	☆	62720
P5-01	HDO terminal switch quantity output function select(FMR)	0:no output l:frequency converter running 2：failure output (failure stop machine) 3:frequency level tested FDT1 output 4:frequency arrived 5:zerospeed running(no output when stop machine) 6:motor overload pre-alarm 7:frequency converter overload pre-alarm 8:setting count value arrived 9:appointed count value arrived 11:PLC circling finished 12:accumulate running time arrived 13:frequency limiting 14:torque limiting 15:running preparation ready 16:AI1>AI2 17:up limit frequency arrived 18:down limit frequency arrived (relate to run)	0	☆	62721
P5-02	Electric relay RY1 function select (K1A-K1B-K1C)		2	☆	62722
P5-03	Electric relay RY2 function select (K2A-K2B-K2C)		0	☆	62723

Function code	Name	Setting range	Leave factory value	Property	EDC address
P5-03	Electric relay RY2 function select (K2A-K2B- K2C)	19:lack voltage status output 20:communication setting 23:zerospeed running2 (also output when stop machine) 24:accumulate power on time arrived 25:frequency level tested FDT2 output 26:frequency 1 arrived output 27:frequency 2 arrived output 28:current 1 arrived output 29:current 2 arrived output 30:timing arrived output 31:AI1 input over limit 32:loss loading	0	☆	62723
P5-04	Y1 output function select	33:reverse running 34:zero current status 35:module temperature arrived 36:output current over limit 37:down limit frequency arrived (also output when stop machine) 38:alarm output (continue running) 40:this time running time arrived 41:failure output (this is freely stop machine failure and not output when lack voltage)	1	☆	62724

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P5-06	HDO high speed pulse output function select	0:running frequency l:setting frequency 2:output current 3:output torque 4:output power 5:output voltage 6:HDI pulse inputflOO% corresponding 100.0kHz) 7: All 8:AI2 9:Keyboard potentiometer llxounting value 12:communication setting 13:motor speed 14:output current (100.0% corresponding 1000.0A) 15:output voltage (100.0% corresponding 1000.0V) 16:remain 17:frequency converter output torque	0	☆	62726
P5-07	A01 output function select		0	☆	62727
P5-09	HDO output the max frequency	0.01kHz ～50.00kHz	50.00 kHz	☆	62729
P5-10	A01 zero deviation coefficient	-100.0% ～+100.0%	0.0%	☆	62730
P5-11	A01 gain	-10.00 ～+10.00	1.00	☆	62731
P5-17	FMR delay time	0.0s ～6553.5s	0.0s	☆	62737

Function code	Name	Setting range	Leave factory value	Property	EDC address
P5-18	RY1 delay close time	0.0s ～6553.5s	0.0s	☆	62738
P5-19	RY2 delay close time	0.0s ~ 6553.5s	0.0s	☆	62739
P5-20	Y1 delay close time	0.0s ～6553.5s	0.0s	☆	62740
P5-21	Remain	-	-	-	62741
P5-22	Y terminal output valid status select	0:positive logic l:reverse logic The unit: HDO terminal Decade: RY1 Hundreds: RY2 Kilobit: Y1 Myriabit: remain	00000	☆	62742
P5-23	AO current output select	The unit: AO1 0:0 ～20 mA l:4~20mA	0	☆	62743
P5-24	FMR delay broken time	0.0s ～6553.5s	0.0s	☆	62744
P5-25	RY1 delay broken time	0.0s ～6553.5s	0.0s	☆	62745
P5-26	RY2 delay broken time	0.0s ～6553.5s	0.0s	☆	62746
P5-27	Y1 delay broken time	0.0s ～6553.5s	0.0s	☆	62747

4.1 Basic function parameters simple table

P6 group-start and stop control

Function code	Name	Setting range	Leave factory value	Property	EDC address
P6-00	Start method	0:directly start l:speed tracing and restart 2:pre-excitation start (AC asynchronous motor)	0	☆	62976
P6-01	Speed tracing method	0:startfrom stop machine frequency l:startfrom zero speed 2:startfrom the max	0	★	62977
P6-02	Quick/ slow speed tracing	1 ～100	20	☆	62978
P6-03	Start frequency	0 ～P0-08	0.00Hz	☆	62979
P6-04	Start frequency remain time	0.0s ~ 100.0s	0.0s	★	62980
P6-05	Start DC brake current/pre-excitation current	0% ～100%	0%	★	62981
P6-06	Start DC brake time/pre-excitation time	0.0s ～100.0s	0.0s	★	62982

Function code	Name	Setting range	Leave factory value	Property	EDC address
P6-07	Accelerate and moderate method	0:line accelerate and moderate l:Curve S accelerate and moderate A 2:Curve S accelerate and moderate B	0	★	62983
P6-08	Curves start section time ratio	0.0%~(100.0%-P6-09)	30.0%	★	62984
P6-09	Curve Send section time ratio	0.0%~(100.0%-P6-08)	30.0%	☆	62985
P6-10	Stop machine method	0:moderate to stop machine l:freely stop machine	0	☆	62986
P6-11	Stop machine DC brake start frequency	0.00Hz ~ The max frequency	0.00Hz	☆	62987
P6-12	Stop machine DC brake waiting time	0.0s ~ 100.0s	0.0s	☆	62988
P6-13	Stop machine DC brake current	0% ～100％	0%	☆	62989
P6-14	Stop machine DC brake time	0.0s ~ 100.0s	0.0s	☆	62990
P6-15	Brake utilize ratio	0% ～100%	100%	☆	62991

4.1 Basic function parameters simple table

P7 group-keyboard and display

Function code	Name	Setting range	Leave factory value	Property	EDC address
P7-01	MFKkey function select	0:MFK invalid l:operate panel order passageway and remote order passageway (terminal order passageway or communication order passageway) shift 2:forward/reverse shift 3:forward crawl 4:reverse crawl	0		63233
P7-02	STOP/ RESET key function	0:STOI7RESET key stop machine function valid only under the keyboard operating method 1:STOP/RESET key stop machine function all valid under any operating method			
P7-03	LED running display parameter 1	0000 ～FFFF Bit00:running frequency 1 (Hz) BitOksetting frequency (Hz) Bit02:bus line voltage(V) Bit03:output voltage (V) Bit04:output current(A) Bit05:output power (kW) Bit06:output torque (%) BitO7:X in put status Bit08: Y output status BitO9:All voltage(V) BitlO: Al 2 voltage M Bitll:Keyboard potentiometer voltage (V) Bitl2:counting value Bitl3:remain Bitl4:load speed display Bitl5: PID setting			

Function code	Name	Setting range	Leave factory value	Property	EDC address
P7-04	LED running display parameter 2	0000 ～FFFF BitOO:PID feedback BitOkPLC stage Bit02:HDI input pulse frequency (kHz) Bit03:running frequency 2 (Hz) Bit04:rest running time Bit05:voltage before All correct (V) Bit06:voltage before AI2 correct (V) Bit07:Voltage before correction of keyboard potentiometer(V) Bit08:line speed Bit09:current power on time(Hour) BitlOxurrent running time(Min) Bitll:HDI input pulse frequency (Hz) Bitl2:communication setting value Bitl3:coder feedback speed (Hz) Bitl4:main frequency X display (Hz) Bitl5:assist frequency Y display (Hz)	0000	☆	63236

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P7-05	LED stop machine display parameters	0000 ～FFFF BitOO:setting frequency (Hz) BitOkbus line voltage(V) BitO2:X in put status BitO3:Y output status BitO4:All voltage (V) Bit05:AI2voltage(V) BitO6:AI3 panel electrical potential device voltage(V) Bit07:counting value Bit08:length value BitO9:PLC stage BitlOdoad speed Bitll:PID setting Bitl2：HDI input pulse frequency (kHz)	0033	☆	63237
P7-06	Load speed display coefficient	0.0001^6.5000	1.0000	☆	63238
P7-07	Converter module heat radiation device temperature	0.0° C~ 100.0° c	-	●	63239
P7-09	Accumulate running time	Oh ～65535h	-	☆	63241
P7-12	Load speed display decimal point digit capacity	0:0 bit decima 12:2 bits decimal 1:1 bit decimal 3:3 bits decimal	1	☆	63244

Function code	Name	Setting range	Leave factory value	Property	EDC address
P7-13	Accumulate power time	0 ～65535h	-		63245
P7-14	Accumulate power consumption quantity	0 ～65535kW	-		63246
P7-17	Digit tube 2 stop machine monitor select	00 ～75	02	☆	63249
P7-18	Digit tube 2 running monitor select	00-75	04	☆	63250

4.1 Basic function parameters simple table

P8 group-assist function

Function code	Name	Setting range	Leave factory value	Property	EDC address
P8-00	Crawl running frequency	0.00Hz ～The max frequency	2.00Hz	☆	63488
P8-01	Crawl accelerate time	0.0s— 6500.0s	20.0s	☆	63489
P8-02	Crawl moderate time	0.0s ~ 6500.0s	20.0s	☆	63490
P8-03	Accelerate time 2	0.0s ～6500.0s	Model confirmation	☆	63491
P8-04	Moderate time 2	0.0s ～6500.0s	Model confirmation	☆	63492
P8-05	Accelerate time 3	0.0s ~ 6500.0s	Model confirmation	☆	63493
P8-06	Moderate time 3	0.0s ~ 6500.0s	Model confirmation	☆	63494
P8-07	Accelerate time 4	0.0s ~ 6500.0s	Model confirmation	☆	63495
P8-08	Moderate time 4	0.0s ～6500.0s	Model confirmation	☆	63496

Function code	Name	Setting range	Leave factory value	Property	EDC address
P8-09	Jump frequency 1	0.00Hz ~ The max frequency	0.00Hz	☆	63497
P8-10	Jump frequency 2	0.00Hz ～The max frequency	0.00Hz	☆	63498
P8-14	Running mode when setting frequency lower than down limit frequency	0:runningatdown limit frequency l:stop machine 2:zerospeed running	0	☆	63502
P8-15	Drop control	0.00Hz ～10.00Hz	0.00Hz	☆	63503
P8-16	Set accumulate power on arrive time	0h ～65000h	Oh	☆	63504
P8-17	Set accumulate running arrive time	0h ～65000h	Oh	☆	63505
P8-18	Start protection select	0:not protect l:protect	0	☆	63506
P8-19	Frequency test value(FDT1)	0.00Hz ~ The max frequency	50.00Hz	☆	63507
P8-20	Frequency test delay value	0.0%-100.0% (FDT1 electric level)	5.0%	☆	63508

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P8-21	Frequency arrived test out width	0.0% ～100.0% (The maxfre-quency)	0.0%	☆	63509
P8-25	Accelerate time lan accelerate time 2 shift frequency point	0.00Hz ～The max frequency	0.00Hz	☆	63513
P8-26	Moderate time land Moderate time 2 shift frequency point	0.00Hz ~ The max frequency	0.00Hz	☆	63514
P8-27	Terminal crawl prior	0:invalid l:valid	0	☆	63515
P8-28	Frequency test value (FDT2)	0.00Hz ~ The max frequency	50.00Hz	☆	63516
P8-29	Frequency test delay value	0.0% ～100.0% (FDT2 electric level)	5.0%	☆	63517
P8-30	Any arrived frequency testvaluel	0.00Hz ～The max frequency	50.00Hz	☆	63518

Function code	Name	Setting range	Leave factory value	Property	EDC address
P8-31	Any arrived frequency test out width 1	0.0% ～100.0% (The max frequency)	0.0%	☆	63519
P8-32	Any arrived frequency test value 2	0.00Hz ～The max frequency	50.00Hz	☆	63520
P8-33	Any arrived frequency test out width 2	0.0% ~ 100.0% (The max frequency)	0.0%	☆	63521
P8-34	Zero current test level	0.0% ~ 300.0%	5.0%	☆	63522
P8-35	Zero current test delay time	0.01s ~ 600.00s	0.10s	☆	63523
P8-36	Output current exceed limit value	0.0% (not test) 0.1% ～300.0% (Rated current of motor)	200.0%	☆	63524
P8-37	Output current exceed limit value tst delay time	0.00s ～600.00s	0.00s	☆	63525
P8-38	Any arrived current 1	0.0% ～300.0% (motor rated current)	100.0%	☆	63526

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P8-39	Any arrived current 1 width	0.0% ～300.0% (motor rated current)	0.0%	☆	63527
P8-40	Any arrived current 2	0.0% ～300.0% (motor rated current)	100.0%	☆	63528
P8-41	Any arrived current 2 width	0.0% ～300.0% (motor rated current)	0.0%	☆	63529
P8-42	Timing function select	0:invalid l:valid	0	☆	63530
P8-43	Timing run time select	0: P8-44 setting l:All 2:AI2 3:Keyboard potentiometer Note: analog input value range corresponding P8-44	0	☆	63531
P8-44	Timing run time	0.0Min ～6500.0Min	O.OMin	☆	63532
P8-45	All input voltage protection value down limit	0.00V-P8-46	3.10V	☆	63533

Function code	Name	Setting range	Leave factory value	Property	EDC address
P8-46	All input voltage protection value up limit	P8-45 ～11.00V	6.80V	☆	63534
P8-47	Module temperature arrived	(TC~100°C)	75° C	☆	63535
P8-48	Fan control (main board FAN base)	0:fan rotating when running 1:fan always rotating	0	☆	63536
P8-49	Wake up frequency	Dormant frequency (P8-51) ~ The max frequency(P0-10)	0.00Hz	☆	63537
P8-50	Wake up delay time	0.0s ~ 6500.0s	0.0s	☆	63538
P8-51	Dormant frequency	0.00Hz ~ wake up frequency (P8-49)	0.00Hz	☆	63539
P8-52	Dormant delay time	0.0s ~ 6500.0s	0.0s	☆	63540
P8-53	This time running arrived time setting	0.0Min~6500.0Min	0.0Min	☆	63541

4.1 Basic function parameters simple table

P9 group-failure and protection

Function code	Name	Setting range	Leave factory value	Property	EDC address
P9-00	Motor overload protection select	0:forbid hallow	1	☆	63744
P9-01	Motor overload protection gain	0.20 ～10.00	1.00	☆	63745
P9-02	Motor overload pre-alarm coefficient	50% ~ 100%	80%	☆	63746
P9-03	Overvoltage loss speed gain	0~100	30	☆	63747
P9-04	Overvoltage loss speed protection voltage	200V-2000V	760V	☆	63748
P9-05	Over current loss speed gain	0 ～100	20	☆	63749
P9-06	Over current loss speed protection current	50% ～200%	150%	☆	63750
P9-07	Power on grounding short circuit protection select	0:invalid 1:valid	1	☆	63751
P9-08	Energy consumption action voltage	100.0V~ 2000.0V	220V:360V 380V:700V	☆	63752

Function code	Name	Setting range	Leave factory value	Property	EDC address
P9-09	Fault auto reset times	0~20	0	☆	63753
P9-10	Fault auto reset FAULT DO selection	0: No action 1: action	0	☆	63754
P9-11	Fault auto reset interval	0.1s~100.0s	1.0s	☆	63755
P9-12	Input phase lack protection selection	0: Invalid 1: Valid	0	☆	63756
P9-13	Output phase lack protection selection	0: Invalid 1: Valid	1	☆	63757
P9-14	The first fault type	0 ～51	-	•	63758
P9-15	The second fault type	50% ～200%	-	•	63759
P9-16	The latest fault type	0:invalid 1:valid	-	•	63760
P9-17	Energy consumption action voltage	100.0V~ 2000.0V	220V:360V 380V:700V	☆	63752

P9 group-assist function

Function code	Name	Setting range	Leave factory value	Property	EDC address
P9-42	Frequency converter status at first time failure	-	-		63786
P9-43	Power on time at first time failure	-	-		63787
P9-44	Running time at first time failure	-	-		63788
P9-47	Failure protect action select 1	The unit: motor over load (11) 0:free power off l:power off according to power off method 2:continue running Decade: input lack phase Hundreds: output lack phase Kilobit: outer failure (15) Myriabit: abnormal communication (16)			
P9-54	Continue running frequency select during failure	0:running at the current running frequency l:running at the setting frequency 2:runningatthe up limit frequency 3:running at the down limit frequency 4:running at the abnormal			

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
P9-55	Abnormal reserve frequency	0.0% ～100.0% (100.0%corresponding the max frequency P0-10)	100.0%		63799
P9-59	Action select when moment power off	0:invalid l:moderate 2: mode rate to stop machine			
P9-60	Pause judgement voltage of moment power action	P9-62—100.0%	85.0%		63804
P9-61	Rise judgement time of moment power off voltage	0.00s ～100.00s			
P9-62	Judgement voltage of moment power off action	60.0% ～100.0% (standard bus line voltage)			

Function code	Name	Setting range	Leave factory value	Property	EDC address
P9-63	Loss load protection select	0:invalid 1:valid	0	☆	63807
P9-64	Loss load test level	0.0 ～100.0%	10.0%	☆	63808
P9-65	Loss load test time	0.0 ～60.0s	1.0s	☆	63809

4.1 Basic function parameters simple table

PA group -PID function

Function code	Name	Setting range	Leave factory value	Property	EDC address
PA-00	PID setting source	0:PA-01 setting l:All 2:AI2 3:keyboard electric potential 4：HDI input pulse setting(X5) 5:communication setting 6:multi section order setting	0	☆	64000
PA-01	PID numeric setting	0.0 ～100.0%	50.0%	☆	64001
PA-02	PID feedback source	0:All 1:AI2 2:keyboard electric potential 3:AI1-AI2 4:HDI input pulse setting(X5) 5:communication setting 6:AI1+AI2 7:MAX(|AI1|,|AI2|) 8：MIN(|AI1|,|AI2|)	0	☆	64002
PA-03	PID act direction	0:positive action 1:negative action	0	☆	64003
PA-04	PID setting feedback range	0~ 65535	1000	☆	64004
PA-05	Ratio gain KPI	0.0 ~ 100.0	20.0	☆	64005
PA-06	Integral time Til	0.01 ～10.00s	2.00s	☆	64006

Function code	Name	Setting range	Leave factory value	Property	EDC address
PA-07	Differential timeTdl	0.000 ～10.000s	0.000s	☆	64007
PA-08	PID return stop frequency	0.00 ~ The max frequency	0.00Hz	☆	64008
PA-09	PID tolerance limit	0.0 ～100.0%	0.0%	☆	64009
PA-10	PID differential limit range	0.00 ～100.00%	0.10%	☆	64010
PA-11	PID set change time	0.00 ～650.00s	0.00s	☆	64011
PA-12	PID feedback filter wave time	0.00 ～60.00s	0.00s	☆	64012
PA-13	PID output filter wave time	0.00 ～60.00s	0.00s	☆	64013
PA-15	Ratio gain KP2	0.0 ～100.0	20.0	☆	64015
PA-16	Integral time Ti2	0.01s ～10.00s	2.00s	☆	64016
PA-17	Differential time Td2	0.000s ～10.000s	0.000s	☆	64017

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
PA-18	PID parameter shift condition	0:not shift l：shiftthrough terminal X 2:automatically shift according to tolerance	0	☆	64018
PA-19	PID parameter shift tolerance 1	0.0% ~ PA-20	20.0%	☆	64019
PA-20	PID parameter shift tolerance 2	PA-19 ～100.0%	80.0%	☆	64020
PA-21	PID initial value	0.0 ～100.0%	0.0%	☆	64021
PA-22	PID initial value remain time	0.00 ～650.00s	0.00s	☆	64022
PA-23	Positive max value between both times output tolerance	0.00 ～100.00%	1.00%	☆	64023
PA-24	Negative max value between both times output tolerance	0.00 ～100.00%	1.00%	☆	64024

Function code	Name	Setting range	Leave factory value	Property	EDC address
PA-25	PID integral property	The unit: integral separate 0:invalid l:valid Decade: whether stop integral after output arrived limit value Oxontinue integral l:stop integral	00	☆	64025
PA-26	PID feedback loss test value	0.0%:not judge the feedback lossO.l ～100.0%	0.0%	☆	64026
PA-27	PID feedback loss test time	0.0s ～20.0s	0.0s	☆	64027
PA-28	PID stop machine arithmetic	0:stop machine and not arithmetic l:stop machine and arithmetic	1	☆	64028

4.1 Basic function parameters simple table

Pb group-swing frequency, fix length and counting

Function code	Name	Setting range	Leave factory value	Property	EDC address
Pb-00	Swing frequency setting method	0:oppositetothe center frequency l:oppositetothe max frequency			
Pb-01	Swing frequency range	0.0 ~ 100.0%	0.0%	☆	64257
Pb-02	Sudden jump frequency range	0.0 ～50.0%	0.0%	☆	64258
Pb-03	Swing frequency period	0.1 ～3000.0s	10.0s	☆	64259
Pb-04	Rise time of delta wave of swing frequency	0.1 ～100.0%	50.0%	☆	64260
Pb-05	Set length	0 ～65535m	1000m	☆	64261
Pb-06	Actual length	0 ～65535m	0m	☆	64262
Pb-07	Pulse quantity per metre	0.1 ～6553.5	100.0	☆	64263
Pb-08	Set counting value	1～65535	1000	☆	64264
Pb-09	Appoint counting value	1～65535	1000	☆	64265

Pc group-multi section order and simple and easy PLC

Function code	Name	Setting range	Leave factory value	Property	EDC address
PC-00	Multi section order 0	-100.0% ～100.0%	0.0%	☆	64512
PC-01	Multi section order 1	-100.0% ～100.0%	0.0%	☆	64513
PC-02	Multi section order 2	-100.0% -100.0%	0.0%	☆	64514
PC-03	Multi section order3	-100.0% ～100.0%	0.0%	☆	64515
PC-04	Multi section order 4	-100.0% ～100.0%	0.0%	☆	64516
PC-05	Multi section orders	-100.0% ～100.0%	0.0%	☆	64517
PC-06	Multi section order 6	-100.0% ～100.0%	0.0%	☆	64518
PC-07	Multi section order?	-100.0% ～100.0%	0.0%	☆	64519
PC-16	Simple and easy PLC running method	0:stop at the end of single operation l:maintain the final value at the end of single operation 2： keep cycling	0	☆	64528

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
PC-17	Simple PLC power down memory selection	Single digit: power down memory selection 0:no power down memory l:powerdown memory Ten digits: stop memory selection 0: stop memory 1: stop memory	00	☆	64529
PC-18	Simple PLC segment 0 runningtime	0.0s (h)～6553.5s (h)	0.0s(h)	☆	64530
PC-19	Selection of acceleration and deceleration time of section 0 of simple PLC	0～3	0	☆	64531
PC-20	Operation time of the first section ofsimple PLC	0.0s (h)～6553.5s (h)	0.0s(h)	☆	64532
PC-21	Selection of acceleration and deceleration time of the first section of simple PLC	0～3	0	☆	64533
PC-22	section running time ofsimple and easy PLC	0.0s (h)~ 6553.5s (h)	0.0s(h)	☆	64534
PC-23	section accelerate and moderate time of simple and easy PLC	。～3	0	☆	64535
PC-24	section running time ofsimple and easy PLC	0.0s(h)～6553.5s (h)	0.0s(h)	☆	64536

Function code	Name	Setting range	Leave factory value	Property	EDC address
PC-25	3 section accelerate and moderate time of simple and easy PLC	0～3	0	☆	64537
PC-26	4 section running time of simple and easy PLC	0.0s (h)～6553.5s (h)	0.0s(h)	☆	64538
PC-27	4section accelerate and moderate time of simple and easy PLC	0～3	0	☆	64539
PC-28	5 section running time of simple and easy PLC	0.0s (h)～6553.5s (h)	0.0s(h)	☆	64540
PC-29	5 section accelerate and moderate time of simple and easy PLC	0~3	0	☆	64541
PC-30	6section running time of simple and easy PLC	0.0s (h)～6553.5s (h)	0.0S(h)	☆	64542
PC-31	6 section accelerate and moderate time of simple and easy PLC	0~3	0	☆	64543
PC-32	Operation time of simple PLC section *7*	0.0s (h) ~ 6553.5s (h)	0.0s(h)	☆	64544

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
PC-33	Selection of acceleration and deceleration time of the 7th section of simple PLC	0～3	0	☆	64545
PC-50	Run time unit of simple and easy PLC	0:s (second) 1: h (hour)	0	☆	64562
PC-51	Set method of multi section order 0	0:function code PC-00 set l:All 2:AI2 3:AI3 outer lead keyboard electric potential 4：HDI input pulse 5:PID 6:set preset frequency (P0-08),UP/DOWN able to be modified	0	☆	64563

Pd group-communication parameters

Function code	Name	Setting range		Leave factory value	Property	EDC address
Pd-00	Baud rate	0:300BPS 1：600BPS 2:1200BPS 3:2400BPS 4:4800BPS	5：9600BPS 6:19200BPS 7:38400BPS 8：57600BPS	5	☆	64768
Pd-01	Data format			3	☆	64769
Pd-02	This machine address			1	☆	64770
Pd-03	Apply delay			2	☆	64771
Pd-04	Communication overtime time			0.0	☆	64772
Pd-05	Data transmit format select			1	☆	64773
Pd-06	Communication read current resolution	0:0.01A 1:0.1A		0	☆	64774
Pd-07	Remain			0	☆	64775

4.1 Basic function parameters simple table

PP group-function code management

Function code	Name	Setting range	Leave factory value	Property	EDC address
PP-00	User password	0~ 65535	00000	☆	7936
PP-01	Parameter initialize	0:no operation 01:recover leave factory parameters, not include motor parameters 02:reset record information 03:remain 04:remain	000	★	7937
PP-02	Function parameters indication select	The unit: U group indication select 0:not display l:display Decade: A group indication select 0:not display l:display	11	★	7938
PP-04	Function code modify property	0:able to modify l:unableto modify	3	☆	7940

A5 group-control optimize parameters

Function code	Name	Setting range	Leave factory value	Property	EDC address
A5-00	DPWM shift up limit frequency	5.00Hz ～The max frequency	8.00Hz	☆	42240
A5-01	PWM modulate method	O:asynchronous modulate l:syn modulate	0	☆	42241
A5-02	Dead zone compensate mode select	0:not compensate l:compensate mode 1	1	☆	42242
A5-03	Random PWM depth	0:random PWM invalid 1 ~ 10:PWM carriage frequency random depth	0	☆	42243
A5-04	Quick limit current enable	0:not enable l:enable	1	☆	42244
A5-05	Current test compensation	0 ～100	5	☆	42245
A5-06	Lack voltage point setting	60.0 ～140.0%	100.0%	☆	42246
A5-07	SVC optimize mode select	l:optimize mode 1 2:optimize mode 2	1	☆	42247
A5-08	Dead zone time adjustment	100 ～200%	150%	☆	42248
A5-09	Overvoltage point setting	200.0-2500.0V	Model confirmation	★	42249

4.1 Basic function parameters simple table

UO group-monitor parameters table

Function code	Name	Setting range	Leave factory value	Property	EDC address
U0-00	Running frequency (Hz)	-	0.01Hz		28672
U0-01	Setting frequency (Hz)	-	0.01Hz		28673
U0-02	Bus line voltage (V)	-	0.1V		28674
U0-03	Output voltage (V)	-	IV		28675
U0-04	Output current (A)	-	0.01A		28676
U0-05	Output power(kW)	-	0.1kW		28677
U0-06	Output torque (%)	-	0.1%		28678
U0-07	X input status	-	1		28679
U0-08	Y output status	-	1		28680
U0-09	All voltage (V)	-	0.01V		28681
U0-10	AI2 voltage (V)	-	0.01V		28682
U0-11	Keyboard potentiometer voltage		0.01V		28683
U0-12	Counting value		1		28684

Function code	Name	Setting range	Leave factory value	Property	EDC address
U0-13	Length value		1		28685
U0-14	Load speed display		1		28686
U0-15	PI D setting		1		28687
U0-16	RID feedback		1		28688
U0-17	PLC stage		1		28689
U0-18	HDI input pulse frequency (Hz)	-	0.01kHz		28690
U0-19	Feedback speed (unit 0.1 Hz)	-	0.1Hz		28691
U0-20	Rest running time	-	0.1 Min		28692
U0-21	Voltage before All correct	-	0.001V		28693
U0-22	Voltage before Al2 correct	-	0.001V		28694
U0-23	Voltage before correction of keyboard potentiometer	-	0.001V		28695
U0-24	Line speed	-	Im/Min		28696
U0-25	Current power on time	-	IMin		28697
U0-26	Current running time	-	0.1 Min		28698

4.1 Basic function parameters simple table

Function code	Name	Setting range	Leave factory value	Property	EDC address
U0-27	HDI input pulse frequency	-	1Hz		28699
U0-28	Communication setting value	-	0.01%		28700
U0-30	Main frequency X display	-	0.01Hz		28702
U0-31	Assist frequency Y display	-	0.01Hz		28703
U0-32	Check any memory address value	-	1		28704
U0-35	Target torque (%)	-	0.1%		28707
U0-37	Power factor angle	-	0.1°		28709
U0-39	Remain	-	IV		28711
U0-41	X i n put status visually display	-	1		28713
U0-42	Y in put status visually display	-	1		28714
U0-43	X function status visually display 1 (function 01-40)	-	1		28715
U0-44	Xfunction status visually display 2 (function 41-80)	-	1		28716
U0-45	Failure information	-	1		28717

Function code	Name	Setting range	Leave factory value	Property	EDC address
U0-45	Failure information	-	1		28717
U0-59	Setting frequenc (%)	-	0.01%		28731
U0-60	Runningfrequen (%)	-	0.01%		28732
U0-61	Frequency converter status	-	1		28733
U0-62	Current failure code	-	1		28734
U0-65	Torque up limit	-	0.1%		28737

Chapters Failure diagnose and policies

5.1 Failure alarm and policies

MR-HPHD-1C Series frequency converter total has 32 items warning information and protection function, protection function act once happen failure, frequency converter stop output, frequency converter failure electric relay contact act and indicate failure code on the frequency converter display panel. The users able to self check according to the reminding in this chapter before seeking for service, analyse the failure reason and find out the solve methods. If failure belong to the described reasons in dotted line frame then please seeking for service, contact the agent of the purchased frequency converter or directly contact our company.

Err22 in 21 items warning information is over current or over voltage signal, in most of the situation, hardware overvoltage caused Err22 alarm.

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Contrava riant unit protection	Err01	1. Frequency converter output circuitshort circuit 2.Too long motor and frequency converter wiring 3.0verheat module 4.lnternal wiring of frequency converter loosen 5.Abnormal main control board 6. Abnormal drive board 7. Abnormal contravariant module	l.Solve outer failure 2. Additionally install reactor or output filter wave device 3.Check whether air channel blocked, whether fan normally working and solve the existing problems 4.Insert we 11 all wiring 5.Seeking for technical support 6.Seeking for technical support 7,Seeking for technical support

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Accelerate over current	Err02	1.Frequency converter output circuit existing grounding or short circuit 2.Control method is vector and not process parameter identification 3Too short accelerate time 4. Manual torque rise or unsuitable V/F curve 5. Lower voltage 6.Start the rotating motor 7.Suddenly add load during accelerating 8.Smaller frequency converter device model select	l.Solve outer failure 2. Process motor parameter identification 3. In crease accelerate time 4. Adjust manually rise torque orV/F curve 5. Adjust the voltage to normal range 6.Select speed tracing start or restart after motor stopped 7.Cancel suddenly added load & Select more bigger power grade frequency converter
Moderate over current	Err03	1.Frequency converter output circuit existing grounding or short circu it 2.Control method is vector and not process parameter identification 3Too short moderate time 4.Lower voltage 5.Suddenly add load during moderating 6.Not additionally install brake unitand brake electric resistance	l.Solve outer failure 2. Process motor parameter identification 3. In crease moderate time 4.Adjust the voltage to normal range 5.Cancel suddenly added load 6.Additionally install brake unit and brake electric resistance

5.1 Failure alarm and policies

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Constant speed over current	Err04	1. Frequency converter output circuit existing grounding or short circuit 2.Control method is vector and not process parameter identification 3.Lower voltage 4.Whether has sudden load during running 5.Sma Iler frequency converter device model select	l.Solve outer failure 2.Process motor parameter identification 3.Adjust the voltage to normal range Cancel suddenly added load 5.Select more bigger power grade frequency converter
Accelerate overvoltage	Err05	1.Higher input voltage 2.Existing outer force drive motor to run during accelerating 3.Too short accelerate time 4.Not additionally install brake unit and brake electric resistance	1. Adjustthe voltage to normal range 2.Cancel additional power or add braking resistance 3.lncrease accelerate time 4.AdditionaUy install brake unit and brake electric resistance
Moderate over voltage	Err06	1. Higher input voltage 2.Existing outer force drive motor to run during accelerating 3.Too short moderate time 4.Not additionally install brake unit and brake electric resistance	1. Adjustthe voltage to normal range 2.Cancel additional power or add braking resistance 3.lncrease accelerate time 4. Additions Uy install brake unit and brake electric resistance

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Constant speed over voltage	Err07	1.Higher input voltage 2.Existing outer force drive motor to run during running	1. Adjust the voltage to normal range 2.Cancel this outer power or additionally install brake electric resistance
Control power supply failure	Err08	1.1 nput voltage not in the standard stipulated range	l.Adjust the voltage in the standard required range
Lack voltage failure	Err09	1.Moment power off 2.Frequency converter in put voltage not in the standard required range 3. Abnormal bus line voltage 4.Abnormal rectification bridge and buifer electric resistance 5.Abnormal drive board 6.Abnormal control board	1.Reset failure 2. Adjust voltage to normal range 3.Seeking for technical support 4.Seeking for technical support 5.Seeking for technical support 6.Seeking for technical support
Frequency converter over load	Err10	l.Whether too big load or happen motor blocked 2.Smaller frequency converter device model select	1.Reduce load and check the motor and mechanical situation 2.Select more bigger power grade frequency converter
Motor overload	Err11	1. Whether suitable motor protect parameters P9-01 2. Whether too big load or happen motor blocked 3.Smaller frequency converter device model select	1. Correctly set this parameter 2.Reduce load and check the motor and mechanical situation 3.Select more bigger power grade frequency converter

5.1 Failure alarm and policies

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Input lack phase	Err12	1. Abnormal three phase input power supply 2. Abnormal drive board 3.Abnormal lightning protection board 4. Abnormal main control board	l.Check and solve the existing problems in outer circuit 2.Seeking for technical support 3.Seeking for technical support 4.Seeking for technical support
Output lack phase	Err13	1. Abnormal lead wire from frequency converter to motor 2.Unbalance frequency converter three phase output during motor running 3.Abnormal drive board 4.Abnormal module	l.Solve outer failure 2.Check whether motor three phase winding normal and solve the problems 3.Seeking for technical support 4.Seeking for technical support
Module overheat	Err14	1. Too high environment temperature 2.Air channel blocked 3.Fan damaged 4.Module thermal resistor damaged 5.Contravariant module damaged	1.Reduce environment temperature 2.Clean air channel 3.Renewal fan 4.Renewal thermal resistor 5.Renewal contravariant module
Outer equipment failure	Err15	l.Multifunctional terminal X input signal of outer failure 2.lnvented 10 function input signal of outer failure	1.Reset running 2.Reset running

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Communication failure	Err16	1. Abnormal host computer working 2. Abnormal communication wire 3.Remain 4. Incorrect communication parameter PD group setting	1. Check host computer wiring 2.Checkcommunication wiring 3.Correctly set communication expanding card type 4.Correctly set communication parameters
Contactor failure	Err17	1. Abnormal drive board and power supply 2. Abnormal contactor	1. Renewal drive board and power supply 2.Renewal contactor
Current test failure	Err18	1. Checkabnormal Hall apparatus 2. Abnormal drive board	1. Renewal Hall apparatus 2.Renewal drive board
Motor tune failure	Err19	1.Motor parameters not set according to data plate 2.Parameter identify process overtime	1. Correctly set motor parameter according to data plate 2.Checkthe lead wire from frequency converter to motor
EEPROM read and write failure	Err21	l.EEPROM chips damaged	1.Renewal main control board
Frequency converter hardware failure	Err22	1. Existing over voltage 2.Existing over current	1. Treat according to over voltage failure 2. Treat according to over current failure

5.1 Failure alarm and policies

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Grounding short circuit failure	Err23	l.Motor grounding short circuit	1.Renewal cable or motor
Accumulated runningtime arrive hilure	Err26	l.Accumulated running time arrived setting value	l.Use parameter initialize function to clean record information
User self defined failure 1	Err27	1.Input signal of user self defined failure 1 through multifunctional terminal X 2.Input signal of user self defined failure 1 through invented 10 function	1.Reset running 2.Reset running
User self defined failure 2	Err28	1.Input signal of user self defined failure 1 through multifunctional terminal X 2.Input signal of user self defined failure 1	1.Reset running 2.Reset running
Accumulate power on time arrived failure	Err29	l.Accumulate power on time arrived setting value	l.Use parameter initialize function to clean record information
Loss load failure	Err30	l.Frequency converter running current lower than P9-64	l.Confirm whether load separated or whether PS- 64, P9-65 parameter setting accordance with actual running working condition
feedback loss failure during running	Err31	PID feedback less than PA-26 setting value	l.Check PID feedback signal or set PA-26 as one suitable value

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Wave tracing and limit current failure	Err40	l.Whether too big load or happen motor blocked 2.Smaller frequency converter device model select	l.Reduce load and check the motor and mechanical situation 2,Select more bigger power grade frequency
Shift motor failure during running	Err41	Modify current motor select through terminal during frequency converter running	l.Process motor shift operation after frequency converter stop machine
Motor over temperature failure	Err45	1. Temperature sensor wiring loosen 2. Too high temperature motor	l.Test temperature sensor wiring and solve the failure l.Reduce carriage frequency or adopt other heat radiation actions to process heat radiation of motor
Initial position error	Err51	l.Too big motor parameter and actual tolerance	1 .Confirm again whether motor parameter correct, pay attention at focus on whether lower rated current setting

5.2 Common failure and solve methods

The frequency converter maybe meeting the below failure situation during use, please process simple failure analyse refer to the below methods.

S/N	Failure appearance	Possible reason	Solve method
1	Power on but no indication	No power grid voltage or too low; Switch power supply failure on frequency converter drive board; Rectification bridge damaged; Frequency converter buffer electric resistance damaged; Control board, keyboard, keyboard wire failure; Wiring among control board, drive board and keyboard broken;	Check input power supply; Seeking factory service; Check bus line voltage; Seeking factory service; Seeking factory service;
2	Power on repeat indication[]	Bad contact wiring between drive board and control board; Control board related apparatus damaged; Too low power grid voltage; Drive board switch power supply problems;	Pulland insert the main board pin socket again; Seeking factory service; Check power grid voltage; Seeking factory service;
3	Power on indicate “Err23" alarm	Motor or output wire grounding short circuit; Frequency converter damaged;	Use megger measure insulation of motor and output wire; Seeking factory service;

S/N	Failure appearance	Possible reason	Solve method
4	Power on indication normal, indicate after running and stop machine immediately	Fan damaged or blocked; Outer control terminal wiring short circuit;	Renewal fan; Solve the outer short circuit failure; Seeking factory service;
5	Frequently report Err14 (module overheat) failure	Too high carriage frequency setting; Fan damaged or air channel blocked. Apparatus in frequency converter damaged (thermocouple or others);	Reduce carriage frequency (P0-15); Renewal fan and clean air channel; Seeking factory service;
6	Motor not running after frequency converter running	Not connect motor wire well; Error frequency converter parameter setting (motor parameter); Bad contact between drive board and control board wire; Drive board failure;	Confirm the wire between frequency converter and motor; Renewal motor or solve the mechanical failure; Check and reset motor parameters;
7	Frequency converter frequently report over current and overvoltage failure	Incorrect motor parameter setting; Unsuitable accelerate and moderate time; Load wave;	Reset motor parameter or process motor tune; Set suitable accelerate and moderate time; Seeking factory service;
8	Power on indication	The relate apparatus on control board damaged;	Renewal control board;

Warranty Agreement

1. The warranty period of the product is 18 months (refer to the barcode on the equipment). During the warranty period, if the product fails or is damaged under the condition of normal use by following the instructions, Mactrol-Refu Pvt. Ltd. will be responsible for free maintenance.
2. Within the warranty period, maintenance will be charged for the damages caused by the following reasons:
a. Improper use or repair/modification without prior permission
b. Fire, flood, abnormal voltage, other disasters and secondary disaster
c. Hardware damage caused by dropping or transportation after procurement
d. Improper operation
e. Trouble out of the equipment (for example, external device)
3. If there is any failure or damage to the product, please correctly fill out the Product Warranty Card in detail.
4. The maintenance fee is charged according to the latest Maintenance Price List of Mactrol-Refu Pvt. Ltd..
5. The Product Warranty Card is not re-issued. Please keep the card and present it to the maintenance personnel when asking for maintenance.
6. If there is any problem during the service, contact Mactrol-Refu Pvt. Ltd.'s agent or Mactrol-Refu Pvt. Ltd. directly.
7. This agreement shall be interpreted by Mactrol-Refu Pvt. Ltd. Limited.

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