科润技术
K&R TECHNOLOGY

ACD200

ECONOMIC INVERTER

User Manual

K&R™

User Manual

Ver 1.0

Preface

This manual is helpful in type selecting, installation, parameter setting, site commissioning, trubleshooting, and daily maintenance of the inverter. To guarantee safe operation of the inverter, please read this manual thoroughly, and keep it handy for referance in the future.

First use this product:

For those users who use this product for the first time, should read this manual thoroughly. If you have any question in the Function and Functional performance, please feel free to contact our technical support personnel for assist.

Notice:

- Before wiring, please make sure to cut off the power.
- The electronic components in the inverter are sensitive to static, so please do not put anything in the inverter, and do not touch the main circuit board.
- After cut off the AC power supply, if the indicator light still on,please do not touch the circuit and any part in the inverter, beacause there still be high voltage in the inverter which is very dangerous.
- The terminals of inverter must be connected to the ground correctly.
- The Input power line absolutely can not be connected to the Output terminal U/T1、V/T2 and W/T3.

Application range of this manual:

This manual is applied to **ACD200~ACD299 Series Inverters of our company.**

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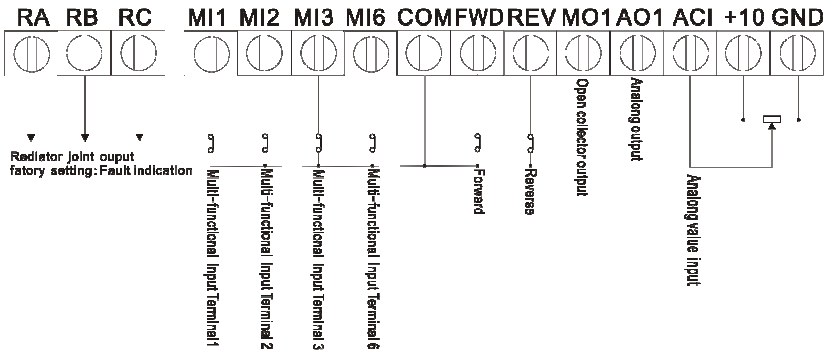
Chapter 1 Wiring

1.1 Wiring Layout of Control Terminals(factory setting)

Diameter of wire: 24 ～12AWG
Wire Type: 75 ℃, Copper Only
Torsion: 4kgf-cm (3.5in-lbf)

Diameter of wire: 22 ～16AWG
Wire Type: Copper Only
Torsion: 2.5kgf-cm (2.2in-lbf)



1.2 Description of the Control Terminal Indocators

Type	Terminal Indicator	Name	Terminal Function Discreption	Specification
Runing Order	FWD	Forward	Turn forward and reversely switch value command, refer to two-wire and three-wire control function in H6.08.	Optical coupler isolation input Input impedance: R=2KΩ
	REV	Reverse		
Multi-function Input Terminals	MI1	Multi-functional Input Terminal 1	It can difined as multi-functional digital input terminal,please refer to Input Terminal Function Description of Terminal Function Parameter (H6) in 6.7 of Chapter 6. MI1 also can be defined as High Speed Pulse Input Terminal, please refer to Input Terminal Function Description of Terminal Function Parameter(H6) in 6.7 of Chapter 6.(Command Port:COM)	Optical coupler isolation input Input impedance: R=2Ω Maxi. Input frequency:200Hz
	MI2	Multi-functional Input Terminal 2		
	MI3	Multi-functional Input Terminal 3		
	MI6	Multi-functional Input Terminal 6		0.1kHz~50.0kHz Input frequency range: 0.1kHz~50.0kHz
Power	+10V	+10V Power	Supply +10V power to external parts	Maxi.output current: 50mA
	COM	+24V negative electrode	24V port for Ground, FWD,REV,MI1,MI2,MI3 and MI6.	COM and GND are isolated from each other in the inner part
	GND	+10V negative electrode	Reference groud of analog signal and +10V power	

analog value input	ACI	Analog value input	Accept the input of analog voltage/current, voltage and current are selected by Jump Line J6, factory setting voltage. (reference:groud)	Inout voltage range: 0~10V (Input impedance: 70K Ω); input current range: 4~20mA(Input impedance: 250Ω)resolving capability: 1/1000
analog value output	AO1	Analog output 1	Supply analog voltage/current output, it can represent 11 kinds of unit, please refer to the parameter description H6.17, the output voltage/current is selected by J5, factory setting voltage. (reference: GND)	Voltage output range: 0~10V Carrent output range: 4~20Ma
Multi-functional output terminal	MO1	Open collector output terminal 1	It can difined as multi-functional digital input terminal, please refer to Input Terminal Function Description of Terminal Function Parameter (H6) in 6.7 of Chapter 6. (Command Port:COM)	Optical coupler isolation output Working voltage range: 15~30V Maxi. Output current: 50mA About usage please refer to parameter description in H6.10

Chapter 2 Function Parameters List

2.1 Description of the Parameter in the table

× means parameter can not be modified during operating process

○ means parameter can be modified during operating process

* means read only parameters and can not be modified

2.2 Function Parameters List

H0-Basic Functional Parameters						
Function Code	Name	Setting Range	Mini. Unit	Foctory Setting	Modification	Communication Address
H0.00	Frequency Input Channel Selection	0: operation keypad digital setting 1: terminal UP/DOWN adjust and set frequency (memorize when power down or stop) 2: terminal UP/DOWN adjust and set frequency (not memorize when power down or stop) 3: RS485 serial port rated 4: reserved 5:ACI anoalog set (ACI-GND) 6: keypad analog potentionmeter setting 7: termina pulse (PULSE) set frequency 8: combination setting	1	0	○	00H
H0.01	Frequency Digital Setting	Lower limit frequency-Upper limit frequency	0.1Hz	50.0Hz	○	01H
H0.02	Frequency input channel combanition (H0.00=8setting rated)	6: external pulse rated ＋ACI 7: external pulse rated - ACI 15: RS485+ACI 16: RS485-ACI 19: RS485+ keypad analog potentionmeter 20: RS485- keypad analog potentionmeter 23: ACI+ keypad analog potentionmeter 24: ACI- keypad analog potentionmeter	1	0	○	02H
H0.03	Operating Command Channels Selection	0: operation keypad control 1: terminal operating command control(STOP on operation keypad is invalid) 2: terminal operating command control(STOP on operation keypad is valid) 3: serials ports operating command control (STOP on operation keypad is invalid) 4: serials ports operating command control (STOP on operation keypad is valid)	1	0	○	03H
H0.04	Running Direction Setting	Units : reserved Tens : 0: allow Reverse 1:avoid Reverse Hundreds:key M on the control board seletion 0: Reverse key 1: Frorward Jogging action function	1	0	○	04H

H0.05	ACCE Time 1	0.1—6000.0	0.1	20.0	○	05H
H0.06	DCCE Time 1	0.1—6000.0	0.1	20.0	○	06H
H0.07	ACCE and DCCE Time Unit	0: Second 1: Minute	1	0	×	07H
H0.08	Upper Limit Frequency	Lower Limit Frequncy —3200.0Hz	0.01Hz	50.0Hz	×	08H
H0.09	Lower Limit Frequncy	0.0—Upper Limit Frequency	0.01Hz	0.0Hz	×	09H
H0.10	Lower Limit Frequncy Operting Mode	0: operating according to Lower Limit Frequncy 1: stop	1	0	○	0AH
H0.11	Torque lifting Mode	0: Manual 1: Automatic	1	0	○	0BH
H0.12	Torque lifting	0.0—20.0（%）	0.1(%)	2.0(%)	○	0CH
H0.13	Slip Frequency Comapensation Filter	0~4	1	2	×	0DH
H0.14	Moter Speed Correction Factor	1~9999	1	100	○	0EH
H0.15	V/F Curve Setting	0:conatant torque curve 1: decreasing torque curve 1 (2^{nd} power) 2: decreasing torque curve 2 (1.7^{th} power) 3: decreasing torque curve 3 (1.2th power) 4: custom V/F curve 5~32：special VF curve,see details in Chapter6	1	0	×	0FH
H0.16	V/F frequency value 3 (F3)	H0.17~ (Upper Limit Frequency -3.0HZ)	0.1HZ	40.0	×	10H
H0.17	V/F voltage value 3 (V3)	H0.18~95.0%	0.1%	80.0	×	11H
H0.18	V/F frequency value 2 (F2)	H0.19~H0.17	0.1HZ	30.0	×	12H
H0.19	V/F voltage value 1 (V2)	H0.20~H0.16	0.1%	60.0	×	13H
H0.20	V/F frequency value 1 (F1)	3.0HZ~H0.17	0.1HZ	15.0	×	14H
H0.21	V/F 电压值 1（V1） V/F voltage value 1 (V1)	3.0~H0.18	0.1%	30.0%	×	15H
H0.22	Carrier Frequency	2.0—15.0K	0.1K	Machine type seletion	×	16H
H0.23	ACCE and DCCE Mode	0: linear ACCE and DCCE Mode 1: S curve ACCE and DCCE Mode	1	0	×	17H

	Selection					
H0.24	Starting time of S curve	10.0（%）—50.0（%）(ACCE and DCCE time) H0.24+H0.25≤90（%）	0.1(%)	20.0(%)	○	18H
H0.25	Risiing time of S curve	10.0（%）—80.0（%）(ACCE and DCCE time) H0.24+H0.25≤90（%）	0.1(%)	60.0(%)	○	19H
H0.26	G/L model set	0: model G 1: model L	1	0	×	1AH
H0.27	Software version	000.0~999.9	0.1	Actual value	*	1BH
H0.28	Restore fatory settings	0: no operation 1: clear fault information 2: Restore fatory settings (general inverter restore factory settings)	1	0	×	1CH
H1- Specified Frequency Function Parametes						
H1.00	Analog filter time constant	0.01—30.00s	0.01s	0.20s	○	1DH
H1.05	Mini. ACI rated	0.0—H1.07	0.1%	0.0%	○	22H
H1.06	Mini. ACI rated relative frequency	0.0—Upper Limit Frequency	0.1 Hz	0.0Hz	○	23H
H1.07	Maxi. ACI rated	0.0—100.0%	0.1%	100.0%	○	24H
H1.08	Maxi. ACI rated relative frequency	0.0—Upper Limit Frequency	0.1 Hz	50.0Hz	○	25H
H1.09	PULSE maxi. Input pulse	0.1—20.0K	0.1K	10.0K	○	26H
H1.10	Mini. PULSE rated	0.0—H1.12(Maxi PULSE rated)	0.1K	0.0K	○	27H
H1.11	Mini. PULSE rated relative frequency	0.0—Upper Limit Frequency	0.1 Hz	0.0 Hz	○	28H
H1.12	Maxi PULSE rated	H1.10(Mini. PULSE rated) —H1.13(maxi. Rated pulse)	0.1K	10.0K	○	29H
H1.13	Maxi PULSE rated relative frequency	0.0—Upper Limit Frequency	0.1 Hz	50.0Hz	○	2AH
H2-Start,Stop and Brake Parameters						
H2.00	Start-up and operation mode	0: star form the staring frequebcy 1: first brake then star form the staring frequebcy 2: speed tracking start	1	0	×	2BH
H2.01	Starting frequency	0.0—10.0Hz	0.1Hz	0.0Hz	○	2CH
H2.02	Duration of Starting frequency	0.0—20.0S	0.1s	0.0s	○	2DH
H2.03	DC brake voltage when start	0—15（%）	1	0	○	2EH
H2.04	DC brake time when start	0.0—20.0S	0.1s	0.0s	○	2FH
H2.05	Stope mode	0: stop by DCCE	1	0	×	30H

		1: stop automatically 2: stop by DCCE+DC brake				
H2.06	Starting frequency of DC brake when stop	0.0—15.0Hz	0.1Hz	0.0Hz	○	31H
H2.07	DC brake time when stop	0.0—20.0s	0.1s	0.0s	○	32H
H2.08	DC brake voltage when stop	0—15（%）	1	0	○	33H
H3- Auxiliary Fuctional Parameters						
H3.00	Dead zone time of forward and reverse	0.0—3600.0s	0.1s	0.2s	○	34H
H3.01	Auto energy-saving operating	0: no operation 1: operating	1	0	×	35H
H3.02	AVR function	0: No operation 1: contaneuous operation 2: no operation only when DCCE	1	0	×	36H
H3.03	Slip frewquaency compensation	0 ～ 150(%)0- no slip frewquaency compensation	1	0	×	37H
H3.04	Jog operating frequency	0.1—50.0Hz	0.1Hz	5.0Hz	○	38H
H3.05	Jog ACCE time	0.1—60.0s	0.1s	20.0s	○	39H
H3.06	Jog DCCE time	0.1—60.0s	0.1s	20.0s	○	3AH
H3.07	Parameter operation control	LED units: 0: all the parameters are allowed to be modified 1: all the parameters are not allowed to be modified except this one 2: all the parameters are allowed not to be modified except H0.01 and this one LED tens: 0: all locked 1: all locked except key STOP 2: all locked except key ▲、▼ and STOP 3: all locked except key RUN and STOP 4: all locked except key SHIFT and STOP	1	0	×	3BH
H3.08	Communication settings	LED units: baud rate selection 2: 1200BPS 3: 2400BPS 4: 4800BPS 5: 9600BPS 6: 19200BPS 7: 38400BPS LED tens: Data format 0: 1—8—1 format,no check 1: 1—8—1 format,Even check 2: 1—8—1 format,Oddcheck	1	5	×	3CH

H3.09	Machine address	0—247, 0 is radio address, when the inverter is set as 0, it only receive and do not send, 247 is the host address	1	1	×	3DH
H3.10	Communication timeout detection time	0.0—999.0s	0.1s	0.0s	×	3EH
H3.11	Response delay time of this machine	0—1000ms	1ms	5ms	×	3FH
H3.12	Given ratio of the communication frequency of the master and slave machine	0—500（%）	1(%)	100(%)	○	40H
H3.13	ACCE time 2	0.1—6000.0	0.1	20.0	○	41H
H3.14	DCCE time 2	0.1—6000.0	0.1	20.0	○	42H
H3.15	ACCE time 3	0.1—6000.0	0.1	20.0	○	43H
H3.16	DCCE time 3	0.1—6000.0	0.1	20.0	○	44H
H3.17	ACCE tine 4	0.1—6000.0	0.1	20.0	○	45H
H3.18	DCCE time 4	0.1—6000.0	0.1	20.0	○	46H
H3.19	Multi-frequency 1	Lower limit frequency-Upper limit frequency	0.01Hz	5.0Hz	○	47H
H3.20	Multi-frequency 2	Lower limit frequency-Upper limit frequency	0.01Hz	10.0Hz	○	48H
H3.21	Multi-frequency 3	Lower limit frequency-Upper limit frequency	0.01Hz	20.0Hz	○	49H
H3.22	Multi-frequency 4	Lower limit frequency-Upper limit frequency	0.01Hz	30.0Hz	○	4AH
H3.23	Multi-frequency 5	Lower limit frequency-Upper limit frequency	0.01Hz	40.0Hz	○	4BH
H3.24	Multi-frequency 6	Lower limit frequency-Upper limit frequency	0.01Hz	45.0Hz	○	4CH
H3.25	Multi-frequency 7	Lower limit frequency-Upper limit frequency	0.01Hz	50.0Hz	○	4DH
H3.26	Multi-frequency 8	Lower limit frequency-Upper limit frequency	0.01Hz	5.0Hz	○	4EH
H3.27	Jump frequency 1	0.0—Upper limit frequency	0.01Hz	0.0Hz	×	4FH
H3.28	Jump frequency 1 range	0.0—Upper limit frequency	0.01Hz	0.0Hz	×	50H
H3.29	Jump frequency 2	0.0—Upper limit frequency	0.01Hz	0.0Hz	×	51H
H3.30	Jump frequency 2 range	0.0—Upper limit frequency	0.01Hz	0.0Hz	×	52H
H3.31	Jump frequency 3	0.0—Upper limit frequency	0.01Hz	0.0Hz	×	53H
H3.32	Jump frequency 3 range	0.0—Upper limit frequency	0.01Hz	0.0Hz	×	54H
H3.33	Set operating time	0—65535 hours	1	0	○	55H
H3.34	Accumulative operating time	0—65535 hours	1	0	*	56H
H3.35	LED initial screen monitoring parameter	0: set frequency 1: output frequency	1	1	○	57H

	selection when operating	2: output current 3: output voltage 4: DC bus voltage 5: motor speed 6: radiator tempreture 7: reserved 8: analog input ACI 9: MI、FWD and REV input terminal status 10: PID given pressure 11: PID feedback pressure				
H3.36	LED initial screen monitoring parameter selection when stop	The same as stated above	1	0		58H
H4.00	Simple PLC operating set	LED units: 0: no operation 1: stop after single cycle 2: keep the last value after single cycle 3: contionuous cycle LED tens: 0: restart from phase one 1: keep operating form the pahse frequency of the break time LED hundreds: PLC operating time unit 0: second 1: minute	1	000	×	59H
H4- Simple PLC Function Parameters						
H4.01	Pahse 1 setting	000－321 LED units: frequency setting 0: multi-frequency i (i=1~7) 1: frequency is decided by H0.00 function code LED tens: running direction selection 0: forward 1: reverse 2: decided by running command LED hundreds 0: ACCE and DCCE time 1 1: ACCE and DCCE time 2 3: ACCE and DCCE time 3 4: ACCE and DCCE time 4	1	000	○	5AH
H4.02	Pahse 1 operating time	0－6000.0	0.1	10.0	○	5BH
H4.03	Pahse 2 setting	000－321	1	000	○	5CH
H4.04	Pahse 2 operating time	0－6000.0	0.1	10.0	○	5DH
H4.05	Phase 3 setting	000－321	1	000	○	5EH
H4.06	Pahse 3 operating time	0－6000.0	0.1	10.0	○	5FH
H4.07	Pahse 4 setting	000－321	1	000	○	60H
H4.08	Phase 4 operating time	0－6000.0	0.1	10.0	○	61H

H4.09	Pahse 5 setting	000－321	1	000	○	62H
H4.10	Phase 5 operating time	0－6000.0	0.1	10.0	○	63H
H4.11	Phase 6 setting	000－321	1	000	○	64H
H4.12	Phase 6 oeprating time	0－6000.0	0.1	10.0	○	65H
H4.13	Phase 7 setting	000－321	1	000	○	66H
H4.14	Phase 7 oeprating time	0－6000.0	0.1	10.0	○	67H
H5- Closed Loop Functional Parameters						
H5.00	Closed loop operating control selection	0: closed loop control invalid 1: PID closed loop control valid	1	0	×	68H
H5.01	Given channel selection	0: given digital 2: ACI analog given 3: keypad analog potentionometer given	1	1	○	69H
H5.02	Feedback channel selection	1: ACI analog input	1	1	○	6AH
H5.03	Digital setting of given quantity	0.00－10.00V	0.01	0.00	○	6BH
H5.04	Mini. Given quantity	0.0 － maxi. given quantity; relative to percentage of 10.00V	0.1(%)	0.0(%)	○	6CH
H5.05	Mini. Given quantity responding feedback quantity	0.0(%)－100.0(%)	0.1(%)	0.0(%)	○	6DH
H5.06	Maxi. Given quantity	Mini. Given quantity－100.0（%）	0.1(%)	100.0(%)	○	6EH
H5.07	Maxi. Given quantity responding feedback quantity	0.0%－100.0（%）	0.1(%)	100.0(%)	○	6FH
H5.08	Proportional gain KP	0.000－9.999	0.001	0.050	○	70H
H5.09	Integral Gain KI	0.000－9.999	0.001	0.050	○	71H
H5.10	Defferential Gain KP	0.000－9.999	0.001	0.050	○	72H
H5.11	Sampling period	0.01－1.00s	0.01s	0.10s	○	73H
H5.12	Deviation Limit	0.0 － 20.0(%)relative tp percentage of 10.00V	0.1(%)	2.0(%)	○	74H
H5.13	Closed loop adjustment characteristics	0: positive effect 1: negative effect	1	0	○	75H
H5.14	Closed loop preset frequency	0-upper frequency limit	0.01Hz	0.0Hz	○	76H
H5.15	Hold time of Closed loop preset frequency	0.0－6000s	0.1s	0.0s	○	77H

H6- Termianl FUnction Parameters						
H6.00	Input terminal MI1 functional selection	0: free control end 1: multi-speed control terminal 1 2: multi-speed control terminal 2 3: multi-speed control terminal 3 4: multi-speed control terminal 4 5: external forward jog control 6: external reverse jog control 7: ACCE and DCCE time selection terminal 1 8: ACCE and DCCE time selection terminal 2 9: ACCE and DCCE time selection terminal 3 10:external equipment fault input 11:external reser input 12: anto stop input 13: external stop input 14:stop DC brake input command DB 15: inverter operating avoid 16: frequency increasing control(UP) 17:frequency decreasing control (DOWN) 18: ACCE and DCCE stop command 19: three-wire operating control 20: closed loop invalid 21: PLC invalid 22:simple PLC suspension operation control 23: PLC reset when in stop status 24: frequency given channel selection1 25: frequency given channel selection 2 26: frequency given channel selection3 27: frequency switched to ACI 28: command switched to terminal 29: operationg command channel selection 1 30: operationg command channel selection 2 31: operationg command channel selection 3 32: traverse throw-in 33: external cut off input 34:inner counter clearing end 35:inner counter starting end 36:inner timer clear end 37:inner timer starting end 38: pulse frequency input (only valid to MI6)	1	0	×	7CH
H6.01	Input terminal MI2 function seletion	The same as stated above			×	7DH
H6.02	Input terminal MI3 function seletion	The same as stated above			×	7EH
H6.05	Input terminal MI6 function seletion	The same as stated above			×	81H
H6.08	FWD/REV operating mode selection	0: two-wire control mode 1 1: two-wire control mode 2 2: two-wire control mode 1 3: two-wire control mode 2	1	0	×	84H
H6.09	UP/DOWN rate	0.1—99.9Hz/s	0.1Hz/s	1.0Hz/s	○	85H

H6.10	Output setting of open collector output terminal MO1	0: Inverter is in operating (RUN) 1: frequency arriving signals (FAR) 2: frequency level detection signals (FDT1) 4: overload pre-warning signal(OL) 5: output frequency up to upper limit (FHL) 6: output frequency up to upper limit (FLL) 7: inverter locked and stop due to under voltage (LU) 8: external fault stop 9: inverter operating at zero-speed 10: PLC is in operating process 11: simple PLC phase operation complete 12:PLC operating one period complete 14: inverter operation prereration complete (RDY) 15: inverter fault 16: limit of traverse upper and lower frequency limit 17: inner counter reaches the last value 18: inner counter reaches the rated value 19: reaches the set operating time 20: inner timer arrives	1	0	×	86H
H6.12	Fault radiator RA, RB, RC function selection	0: Inverter is in operating (RUN) 1: frequency arriving signals (FAR) 2: frequency level detection signals (FDT1) 4: overload pre-warning signal(OL) 5: output frequency up to upper limit (FHL) 6: output frequency up to upper limit (FLL) 7: inverter locked and stop due to under voltage (LU) 8: external fault stop 9: inverter operating at zero-speed 10: PLC is in operating process 11: simple PLC phase operation complete 12:PLC operating one period complete 14: inverter operation prereration complete (RDY) 15: inverter fault 16: limit of traverse upper and lower frequency limit 17: inner counter reaches the last value 18: inner counter reaches the rated value 19: reaches the set operating time 20: inner timer arrives		15	×	88H
H6.13	Frequency (FAR) reaches detection range	0.0—50.0Hz	0.1Hz	5.0Hz	○	89H

H6.14	FDT1(frequency level)level	0.00—upper limit frequency	0.1Hz	10.0Hz	○	8AH
H6.15	FDT1 lag	0.0—50.0Hz	0.1Hz	1.0Hz	○	8BH
H6.16	Analog output (AO1) selection	0: output frequency (0—upper limit frequency) 1: rated frequency (0—upper limit frequency) 2:output current (0—2×rated current) 3: output voltage (0—1.2×load motor rated voltage) 4: bus voltage (0—800V) 5: PID given value (0.00—10.00V) 6: PIDfeedback (0.00—10.00V)	1	0	○	8CH
H6.17	Analog output (AO1) gain	0.10—2.00	0.01	1.00	○	8DH
H6.18	Analog output (AO1) bias	0.00—10.00V	0.01	0.00	○	8EH
H6.24	Rated inner counter value reaches given value	0--9999	1	0	○	94H
H6.25	Specified inner counter value reaches given value	0---9999	1	0	○	95H
H6.26	Inner timer timing setting	0.1—6000.0s	0.1	60.0	○	96H
H7- Specific Traverse Function Parameters						
H7.00	Traverse function selection	0: not use traverse function 1: use traverse function	1	0	×	97H
H7.01	Traverse operating mode	LED units: throw-in mode 0: anto throw-in mode 1: manual terminal throw-in mode LED tens: 0: variable swing range 1: fixed swing range Notice: traverse central frequency input channel is set by H0.00 functional parameters	1	00	×	98H
H7.02	Traverse range	0.0—50.0(%)	0.1(%)	0.0(%)	○	99H
H7.03	Sudden jump frequency	0.0—50.0(%)	0.1(%)	0.0(%)	○	9AH
H7.04	Traverse peroid	0.1—999.9s	0.1s	10.0s	○	9BH
H7.05	Triangular rising time	0.0—98(%)(Traverse peroid)	0.1(%)	50.0(%)	○	9CH
H7.06	Traverse preset frequency	0.0—400.0Hz	0.01Hz	0.00Hz	○	9DH

H7.07	Traverse preset frequency waiting time	0.0—6000s	0.1s	0.0s	○	9EH
H8- Motor and Vector Control Parameters						
H8.00	Control method setting	0-1 0: V/F control 1: vector control	1	0		9FH
H8.01	Motor rated voltage(the maxi.output voltage when on VF control will decide VF curve)	1—480V	1V	According to machine type	×	A0H
H8.02	Motor rated current	0.1—999.9A	0.1A	According to machine type	×	A1H
H8.03	Motor rated frequency (the general operating frequency when on VF control will decide VF curve)	1.0—3200.0Hz	0.01Hz	According to machine type	×	A2H
H8.04	Motor rated speed	1—9999r/min	1r/min	According to machine type	×	A3H
H8.05	Motor pole number	2-14	2	According to machine type	×	A4H
H9- Protection Parameters						
H9.00	Waiting time of restarting after instantaneous power failure	0—10.0S 0 means invalid restart after instantaneous power failure	0.1S	0.0S	×	B1H
H9.01	Fault auto reset times	0—10 0 means no auto reset function Notice：overload and overheat do not have auto reset function	1	0	×	B2H
H9.02	Fault reset intervals	0.5—20.0S	0.1S	5.0S	×	B3H
H9.03	Motor overload protection mode selection	0: no operation 1: inverter locks output	1	1	×	B4H
H9.04	Motor overload protection coefficient	20.0-120.0 (%)	0.1(%)	100.0(%)	×	B5H
H9.05	Overload pre-alarm	20%—200 (%)	1(%)	130(%)	○	B6H

	detection level					
H9.06	Overload pre-load delay time	0.0—20.0s	0.1s	5.0s	○	B7H
H9.07	Overvoltage stall selection	0: avoid 1: allow	1	1	×	B8H
H9.08	Coervoltage stall point	120-150 (%)	1(%)	140(%)	○	B9H
H9.09	Auto frequency limit level	110—200 (%)	1(%)	150(%)	×	BAH
H9.10	Decline rate of frequency when on frequency limit	0.0—99.9Hz/s	0.01Hz/s	10.00Hz/s	○	BBH
H9.11	Auto frequency limit action selection	0: constant speed invalid 1: constant speed valid Notice: ACCE and DCCE always valid	1	0	×	BCH
HA- Parameters						
HA.00	Feedback disconnection detection value	0.0~100.0%	0.1	0.0	○	BDH
HA.01	Feedback disconnection dealy time	0.0~999.9s	0.1	0.0	○	BEH
HA.02	Remote pressure gauge range	0.00~20.00Mpa	0.01	1.00	○	BFH
HA.03	Sleeping frequency	0.0~99.9Hz	0.1	0.0	○	C0H
HA.04	Sleeping delay time	0.0~999.9s	0.1	0.0	○	C1H
HA.05	Wake-up pressure	0.0~20.00Mpa	0.01	0.0	○	C2H
HA.06	Wake-up delay time	0.0~999.9s	0.1	0.0	○	C3H
Hd- Fault Recording Parameters						
Hd.00	The latest fault record	The latest fault record	1	0	*	DBH
Hd.01	Fault record before Hd.00	Fault record before Hd.00	1	0	*	DCH
Hd.02	Fault record before Hd.01	Fault record before Hd.01	1	0	*	DDH
Hd.03	Fault record before Hd.02	Fault record before Hd.02	1	0	*	DEH
Hd.04	Fault record before Hd.03	Fault record before Hd.03	1	0	*	DFH

Hd.05	Fault record before Hd.04	Fault record before Hd.04	1	0	*	E0H
Hd.06	The rated frequency when the latest fault happened	The rated frequency when the latest fault happened	0.1Hz	0	*	E1H
Hd.07	The rated output frequency when the latest fault happened	The rated output frequency when the latest fault happened	0.1Hz	0	*	E2H
Hd.08	The rated output current when the latest fault happened	The rated output current when the latest fault happened	0.1A	0	*	E3H
Hd.09	The rated output voltage when the latest fault happened	The rated output voltage when the latest fault happened	1V	0	*	E4H
Hd.10	The rated DC bus voltage when the latest fault happened	The rated DC bus voltage when the latest fault happened	1V	0	*	E5H
HE- Secret Code and Manufacturer Functional Parameters						
HE.00	User code	0000－9999	1	0000	×	EAH
HF-Monitoring Functional Parameters						
HF.00	Rated frequency	Current rated frequency	0.1HZ		*	
HF.01	Output Frequency	Current output frequency	0.1HZ		*	
HF.02	Output current	The effective value of present output fequency	0.1A		*	
HF.03	Output voltage	he effective value of present output voltage	1V		*	
HF.04	DC bus voltage	Current DC bus voltage	1V		*	
HF.05	Load motor speed	Equal to that the output frequency times the load motor speed correction factor	1 (r/m)		*	
HF.06	Maodule tempreture	IGBT radiator tempreture	1℃		*	
HF.08	Analog input ACI	Analog input ACI value	V		*	
HF.09	MI、FWD、REV input terminal	Inout terminal status	-	-	*	
HF.10	PID rated pressure	rated pressure	Mpa	-	*	
HF.11	PID feedback pressure	feedback pressure	Mpa	-	*	

Chapter 3 Fault Diagnosis and Countermeasures

3.1 Faults and Counter Measures

The possible fault that will happen in ACD200 is listed in table 7-1, the fault code range is U-01~U-23. some reserved codes are prepared for the ongoing intelligent self-diagnosis function in the future. when there is something wrong with the inverter, the user should firstly check according to the indication and keep detailed record, if the users need our technical assist, please feel free to contact out after-sales and Technical Support Department, or our local sales agent for help.

Table 3-1 Fault alarm content and countermeasures

Fault code	Fault type	Paossible reasons	Countermeasures
U-01	Inverter module protection	Inverter instantaneous overcurrent	Refer to overcurrent countermeasure
		Output threephase have phase short circuit or groud circuit	Rewiring
		Duct blockage or fan broken	Clear the doctor change fans
		The environment tempreture too high	Lower the environment tempreture
		Loose of control panel connection or plug-in	Check and reconnecting
		Output phase loss, etc. reasons led to the abnormal current waveform	Check wiring
		Auxiliary power damaged, drive voltage is under voltage	Ask for help from manufacturer or sales agent
		Abnormal control panel	Ask for help from manufacturer or sales agent
U-02	Inverter accelerate the operating speed and overcurrent	Acceleration time is too short	Extend the Acceleration time
		Improper V/F curve	Adjust the V/F curve setting, adjust the torque lifting range or adjust it to auto lifting
		Restart the rotating motor	Set it as speed-checking and restarting function
		Low voltage of grid	Check input power
		Inverter power is too small	Use inverter with bigger power level

U-03	Inverter decceleratе the operating speed and overcurrent	Deceleration time is too short	Extend the decceleration time
		There is potential load or high inertia load	Add the brake power of external energy consumption braking compenents
		Inverter power is a little small	Use inverter with bigger power level
U-04	Inverter operate with constant speed overcurrent	Sudden change or abnormal with load	Check load or lessen the sudden change of load
		The DCCE and ACCE time is set to be too short	Extend the DCCE and ACCE time properly
		Low voltage of grid	Check input power
		Inverter power is a little small	Use inverter with bigger power level
U-05	Inverter accelerate the operating speed and overvoltage	Abnormal input voltage	Check input power
		The ACCE time is set to be too short	Extend the ACCE time properly
		Restart the rotating motor	Set it as detection restarting function
U-06	Inverter decceleratе the operating speed and overvoltage	Decceleration time is too short	Extend the DCCE time
		There is potential load or high inertia load	Add the brake power of external energy consumption braking compenents
U-07	Inverter operate with constant speed overvoltage	Abnormal input voltage	Check input power
		The DCCE and ACCE time is set to be too short	Extend the DCCE and ACCE time properly
		Abnormal change of input voltage	Install input reactor
		inertia load is a little high	Use energy consumption braking compenents
U-08	Fault of control power	Abnormal input voltage	Check input power or ask for support service
U-09	Undervoltage in operating	Undervoltage	Check site input voltage
U-10	Inverter overload	acceleration time is too short	Extend the ACCE time properly
		DC brake is too high	Lessen DC brake current,extend the brake time

		Improper V/F curve	Adjust the V/F curve setting, adjust the torque lifting range
		Restart the rotating motor	Set it as speed-checking and restarting function
		Low voltage of grid	Check input power
		Inverter power is too big	Use inverter with smaller power level
U-11	Motor overload	Improper V/F curve	Adjust the V/F curve setting, adjust the torque lifting range
		Low voltage of grid	Check input power
		General motor operating at low-speed and big load for a long time	Operating at low speed for a long time, can choose frequency conversion motor
		The setting of motor overload protection coefficient is not correct	Set the motor overload protection coefficient correctly
		Motor stall or too much change in load	Check the load
U-12	Reserved	Reserved	Reserved
U-13	Reserved	Reserved	Reserved
U-14	Inverter is cverheat	Duct obstrution	Clear the duct or improve ventilation
		The environment tempreture is too high	Improve the ventilation, lower the carrier frequency
		Fan damaged	Chang fans
U-15	External equipment fault	Use the key STOP RESET if it is not the keypad operating mode	Check the operating mode
		Use the key STOP RESET in the stall status	Set the operating parameters correctly
		Stop suddenly and the terminal closed due to external fault	Deal with the external fault and disconnect the external fault terminal
U-16	RS485 communication fault	Improper setting of baud rate	Set the baud rate correctly
		Serials port communication error	Reset by press the key STOP RESET and ask for technical service
		Improper setting of fault warning parameter	Modify the setting of H3.38、H3.39
		Position machine does not work	Check whether the position machine is working, and whether the wiring connection is right

U-17	Reserved	Reserved	Reserved
U-18	Current sensing circuit	Loose connection of control panel wiring and plug-in	Check and reconnecting
		Auxilliay power damaged	Ask manufacturer or sales agent for assist
		Hall components damaged	Ask manufacturer or sales agent for assist
		Amplify the abnormal circuit	Ask manufacturer or sales agent for assist
U-19	Reserved	Reserved	Reserved
U-20	Reserved	Reserved	Reserved
U-21	E^2PROM is abnormal	Control the reading and writing error of parameter	Reset by key STOP RFSFT and ask the manufacturer or sales agent for assist support
U-22	Inverter hardware fault	Overvoltage or overcurrent hardware circuit fault	Ask manufacturer or sales agent for assist
U-23	Reserved	Reserved	Reserved
U-25	Disconnection of PID feedback	Disconnection of PID feedback	Check the feedback wiring
PoFF	Undervoltage when stop	Abnormal input voltage	Check the input power
LoCC	Password setting is valid	User password is valid	When displaying the LoCC, press ▲ then input the rated user password, if forget the password please ak manufacturer or sales agent for assist

3.2 Fault Recording and Checking

This serials inverters record the lastest 6 fault code of the fault that happened and the operating parameter of the inverter for the last time, please check these information, which will be helpful to the reasons for the faults.

All the fault information are keeped in the Hd serials parameters,, palese enter the Hd serials parameters according to the keypad operation methods

Code	Contents	Code	Contents
Hd.00	Fault record for last time	Hd.06	Rated frequency when the fault happened last time
Hd.01	Fault record for the last two times	Hd.07	Rated frequency when the fault happened last time
Hd.02	Fault record for the last three times	Hd.08	Rated frequency when the fault happened last time
Hd.03	Fault record for the last four times	Hd.09	Rated frequency when the fault happened last time
Hd.04	Fault record for the last five times	Hd.10	DC bus voltage when the fault happened last time
Hd.05	Fault record for the last six times		

3.3 Fault Reset

(1) Before reset, must check the reason thoroughly and try to resolve, or it will led to pomanent damage.
(2) If can not reset or fault happends again after reset, the user should check for the reason, continuous reset will damage the inverter.
(3) When on overload and overheat protection, please reset after 5 minutes.

When faults happens, you can choose anyone of the operation as follows to resume normal operation:

(1) Set any terminal of MI1、MI2、MI3 or MI6 to RESET Input (H6.00~H6.02=10, H6.03=10), then disconnect after it closed with COM end.
(2) When display the fault code, make sure that it can reset , then press key STOP RESET .
(3) Cut off the power.