AIMotor Low Voltage Series manuals

Shanghai Siheng Motor Co.，Ltd

AIMotor Low Voltage Series Product Manual V20251223

(2025. 12.23)

Safety precautions

The following symbols are used in this instruction manual for safety-related contents. Please be sure to observe the safety markings as they are the main contents.

Danger	**Indicates that when used incorrectly, it will cause danger and result in injury or death.**
Attention	**Indicates that if used incorrectly, it will cause danger, resulting in personal injury and possible damage to the equipment.**
Prohibition	**Indicates behavior that is strictly prohibited and may result in damage to the equipment or render it inoperable.**

1. Occasions for use

Danger	● It is prohibited to use the product in flammable and explosive places, which may cause injury or fire. ● It is prohibited to use the product in places with high humidity, direct sunlight, dust, salt and metal powder.

2. Wiring

Danger	● Different drives or motor power requirements are not the same, please follow the drive or motor nameplate access to the appropriate power supply, DC input must distinguish between positive and negative power supply, otherwise it will cause motor damage or fire. ● When connecting the drive control terminals, please follow the port definition in the manual to connect the wires correctly, otherwise it may cause damage to the motor driver or malfunction and lead to accidents. ● Do not connect the manufacturer's program update port to any cable, as this may cause damage to the driver or motor chip.

3. Operation

Attention	● Before starting operation, make sure that you can stop the machine at any time in case of an accident. ● Separate the servo motor from the machine during test operation. Confirm the operation before mounting the motor on the machine. ● Please make sure that the power input of the driver is stable before operation, otherwise it will cause driver abnormality. ● Do not turn the power on and off too often, as this may cause the drive to overheat internally.

4. Running

Prohibition	● When the equipment is in operation, it is forbidden to touch any of the rotating parts, otherwise it may cause injury or death. ● When the equipment is running, it is forbidden to touch the drive and motor at will, otherwise it will cause electric shock or burns. ● When the equipment is running, it is prohibited to drag the motor cable, otherwise the motor will be abnormal.

5. inspection and maintenance

Prohibition	● It is prohibited to disassemble the drive or motor for repair by yourself. ● Violent assembly of the motor is prohibited, otherwise the motor will be damaged. ● Do not touch the driver or the inside of its motor, as this may cause electric shock. ● It is prohibited to carry out wiring, maintenance and repair operations under energized condition.

Chapter I. Product Introduction

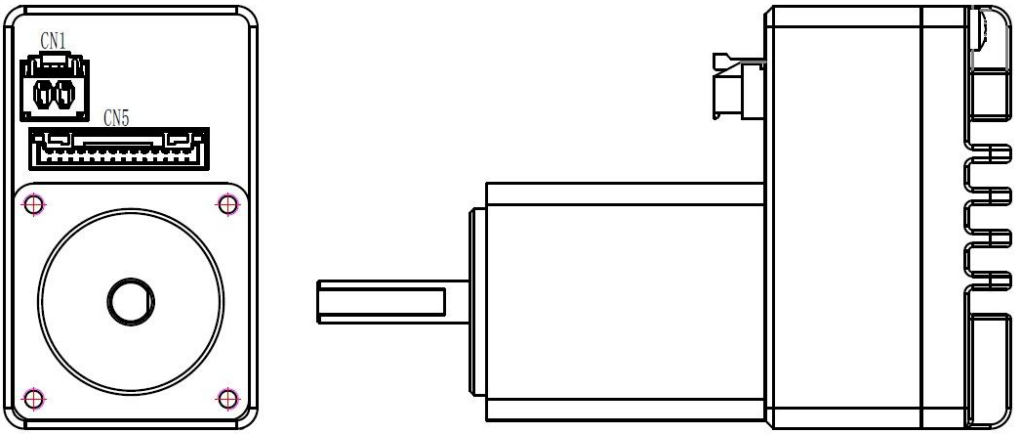
1.1-Servo Drive Technical Specifications

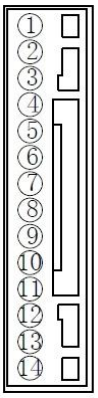
First of all, thank you for using our AIMtor low voltage series!
AIMotor series products are a high-performance, low-energy motor products independently researched and developed by our company according to the market orientation, which have excellent performance in the automation field of medical equipment, precision instruments, food packaging, 3C assembly, mobile robot, joint module, logistics industry, etc., and help the industry to develop intelligently.
The main advantages of this is reflected in the strong stability, high positioning accuracy, fast motor response, overload capacity, and low noise, low heat, fine structure, practical and rich functionality, simple and convenient application. Specific technical specifications see the following table ↓

Input power		The permissible input voltage is not the same for different models of AIMotor series motor drives, please refer to the motor drive specifications for details. If the product is used with DC power input, pay attention to the positive and negative polarity of the power supply.
The environment in which it is used	Temperature	Work:0℃~55℃ Storage:-20℃~+80℃
	Humidity	Less than 90% (no condensation)
control methods		① position control ② speed control ③ torque control ④ communication control
Control characteristics		Speed frequency response:≥200Hz
		Speed Fluctuation Rate:<±0.03(Load 0~100%):<±0.02×(0.9~1.1)Supply Voltage
		Received pulse frequency ≤100kHz
Control input		01、Servo enable;02、Alarm clear;03、Multi-segment enable;04、Multi-segment select 1;05、Multi-segment select 2.06, Forward overtravel; 07, Reverse overtravel; 08, Forward tap; 09, Reverse tap; 10, Home switch 11、Home enable;12、Emergency stop;13、Pulse prohibition;14、Position deviation clear.
Control output		01、Servo ready output; 02、Positioning completion output; 03、Fault alarm output 04、Home confirmation return to zero output; 05、Electrical confirmation return to zero output; 06、Torque arrival output. 07. Speed to reach the output.
Position control		Pulse mode: Pulse + direction; A + B orthogonal pulse; Double pulse (CW/CCW) The default electronic gear ratio is 131072 : 1000, i.e. 1000 pulses per revolution Maximum pulse reception frequency <= 100KHZ
		Internal 4-segment position mode: 1, single-cycle operation; 2, automatic cycle operation; 3, multi-segment DI switching operation
		Communication control method: RS48 +CANopen+EtherCAT control corresponding to the communication location address or object dictionary
Speed control		Internal 4-speed mode: 1, single-cycle operation; 2, automatic cycle operation; 3, multi-speed DI switching operation
		Communication control mode: RS485 +CANopen+EtherCAT control corresponding to communication speed address or object dictionary
Torque control		Communication control mode: RS485 +CANopen+EtherCAT control corresponding to communication torque address or object dictionary
Acceleration and deceleration functions		Acceleration/deceleration time:1~65535 ms(0 r/min ~ 1000 r/min)
Monitoring function		Current speed, DI input, DO output, current position, command input pulse accumulation, average load factor, position deviation count, motor phase current, bus voltage value, module temperature, alarm record, speed corresponding to command pulse frequency, operation status, etc.
Protection functions		Main power over-voltage and under-voltage, overspeed, over-current, overload, encoder abnormality, position over-difference, blocking, parameter abnormality, etc
Return-to-origin function		13 ways to autonomously (search) back to the home position, as well as a home position offset function.
Communication functions		RS485 follows the standard Modbus-RTU protocol CANopen and EtherCAT follow the standard CIA402 axis control protocol
Gain adjustment		manual adjustment internal rigidity scale adjustments

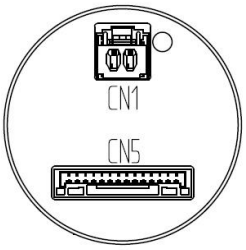
1.2-Low Voltage DC One-Piece Series Motor Hardware Interfaces

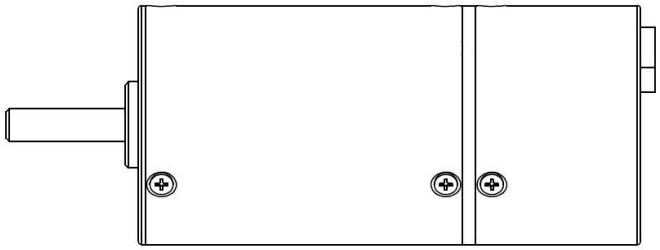
1) Integrated Model:MD28 Terminal Interface Diagram

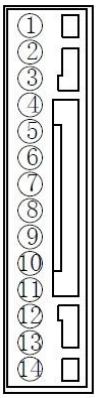


CN1:Power port	terminal serial number	Name	Function	
	1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	GND	DC power supply negative	
CN5:Control communication port	terminal serial number	Name	Function	
	1	PULS+	Command Pulse Positive	DC5~24V Adaptive
	2	PULS-	Command Pulse Negative	
	3	DIR+	Command Direction Positive	
	4	DIR-	Command Direction Negative	
	5	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	6	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	7	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	8	DO1-		
	9	485A	485 communication positive	
	10	485B	485 communication negative terminal	
	11	CAN_H	CAN communication H	
	12	CAN_L	CAN communication L	
	13	CLK	program upgrade clock lines	
	14	DIO	program upgrade cable	

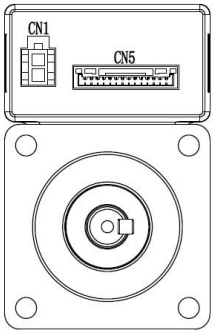
2)Integrated model:MD36 terminal interface diagram

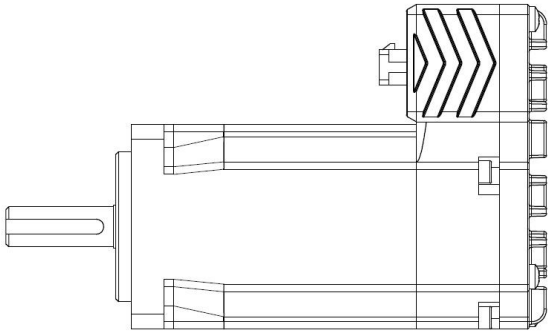


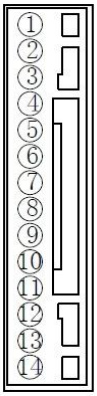


CN1:Power port	terminal serial number	Name	Function	
	1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	GND	DC power supply negative	
CN5:Control communication port	terminal serial number	Name	Function	
	1	PULS+	Command Pulse Positive	DC5~24V Adaptive
	2	PULS-	Command Pulse Negative	
	3	DIR+	Command Direction Positive	
	4	DIR-	Command Direction Negative	
	5	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	6	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	7	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	8	DO1-		
	9	485A	485 communication positive	
	10	485B	485 communication negative terminal	
	11	GND	485 communication ground	
	12	CLK	program upgrade clock lines	
	13	DIO	program upgrade cable	
	14	3.3V	3.3V output positive	

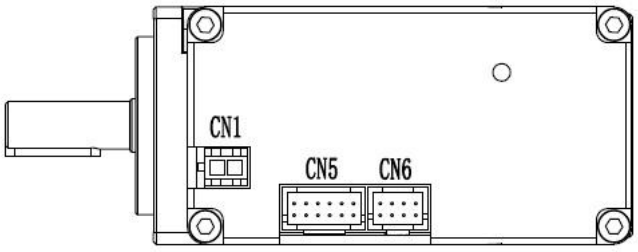
3)Integrated Model:MD40 Terminal Interface Diagram

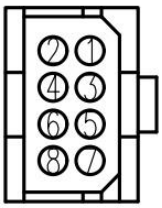


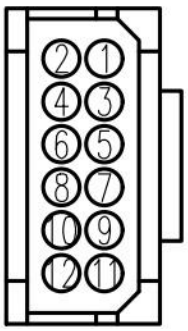


CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply. Reversing the positive and negative terminals will damage the driver
	2	DC+	DC power supply positive	
CN5:Control communication port	terminal serial number	Name	Function	
	1	PULS+	Command Pulse Positive	DC5~24V Adaptive
	2	PULS-	Command Pulse Negative	
	3	DIR+	Command Direction Positive	
	4	DIR-	Command Direction Negative	
	5	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	6	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	7	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	8	DO1-		
	9	485A	485 communication positive	
	10	485B	485 communication negative terminal	
	11	GND	485 communication ground	
	12	CLK	program upgrade clock lines	
	13	DIO	program upgrade cable	
	14	3.3V	3.3V output positive	

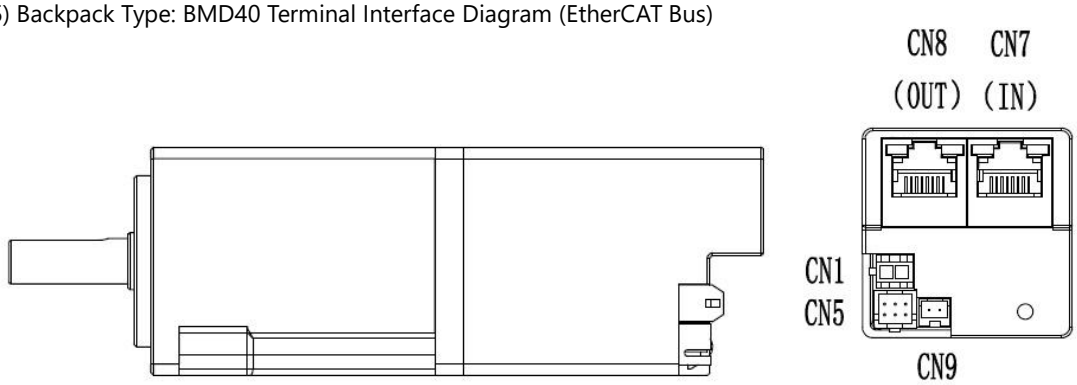
4)Backpack All-in-One Model:BMD40 Terminal Connection Diagram



CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	DC+	DC power supply positive	
CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	DO2+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

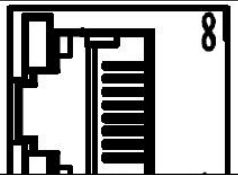
5) Backpack Type: BMD40 Terminal Interface Diagram (EtherCAT Bus)



CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply. Reversing the positive and negative terminals will damage the driver
	2	DC+	DC power supply positive	

CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2	DI1	Input terminal 1
	3	485B	485 communication negative terminal
	4	DICOM	Input Terminal Common
	5	SWCLK	manufacturer's interface
	6	SWDIO	

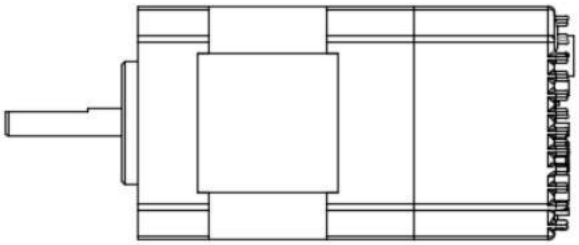
CN7: Ethercat IN; CN8: EtherCAT OUT

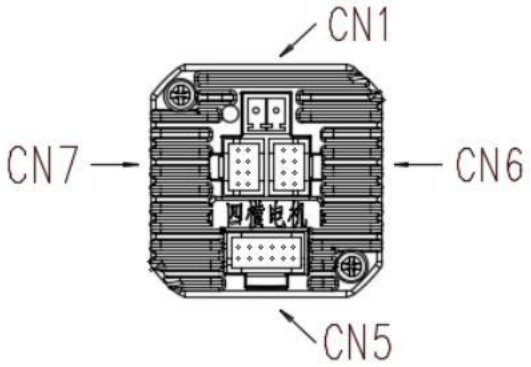
CN7/8: Communication port	terminal serial number	Name	Function
	1	TD+	Data transmission +
	2	TD-	Data transmission -
	3	RD+	Data reception+
	4	NC	Reservations
	5	NC	Reservations

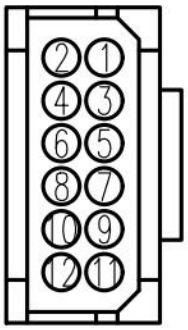
	6	RD-	Data reception -
	7	NC	Reservations
	8	NC	Reservations

CN9:Battery port	terminal serial number	Name	Function
	1	BAT+	Battery positive
	2	BAT-	Battery negative

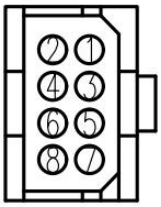
6)Integrated model:MD42 terminal interface diagram



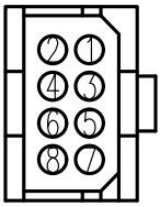


CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	DC+	DC power supply positive	
CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	DO2+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN6 communication port

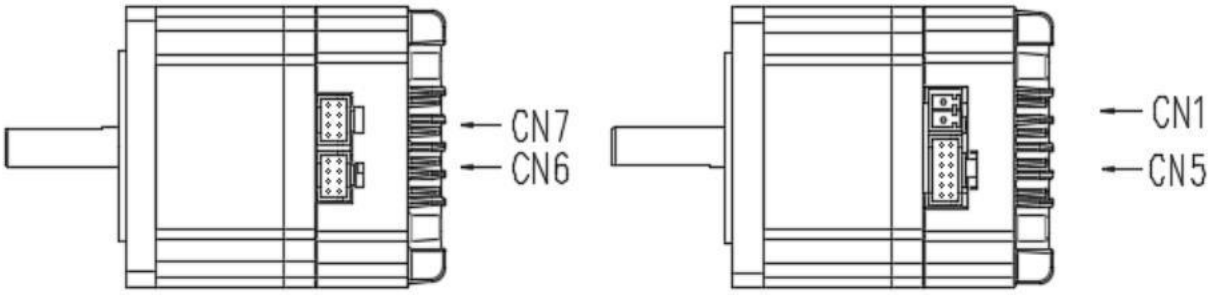
CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

CN7 communication port

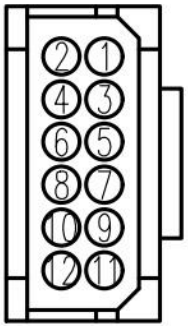
CN7:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	CLK	program upgrade clock lines
	7	+3.3V	Communication 3.3V power supply
	8	DIO	program upgrade cable

Note:* For CANOPEN bus motor, non-CANOPEN bus motor does not contain this function.

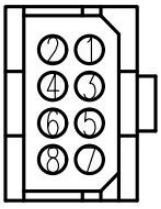
7)Integrated Model:MD57 Terminal Connection Diagram



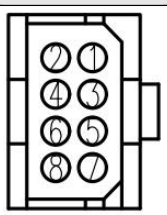
CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	DC+	DC power supply positive	

CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	D02+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN6 communication port

CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

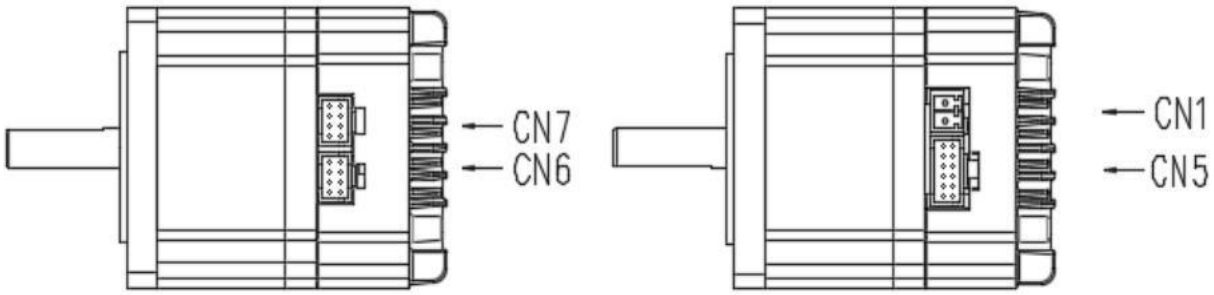
CN7 communication port

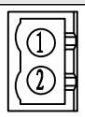
CN7:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	CLK	program upgrade clock

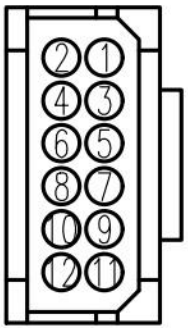
			lines
	7	+3.3V	Communication 3.3V power supply
	8	DIO	program upgrade cable

Note:* For CANOPEN bus motor, non-CANOPEN bus motor does not contain this function.

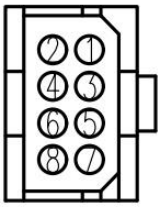
8)Integrated model:MD60 Series



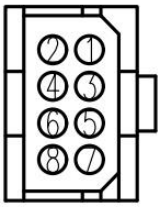
CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	DC+	DC power supply positive	

CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	D02+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN6 communication port

CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

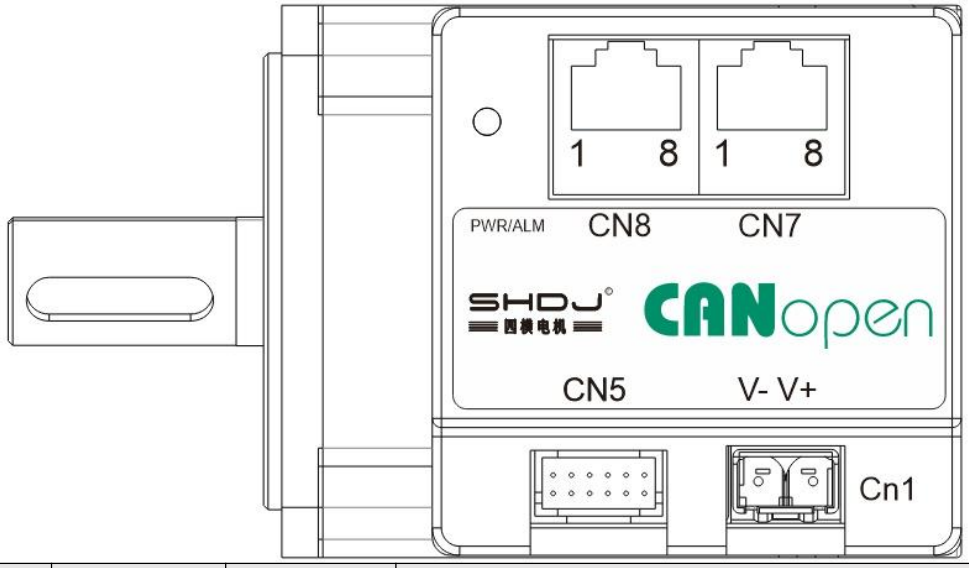
CN7 communication port

CN7:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	CLK	program upgrade clock

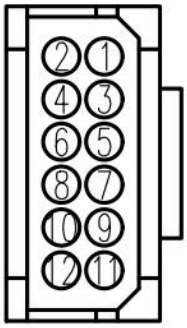
			lines
	7	+3.3V	Communication 3.3V power supply
	8	DIO	program upgrade cable

Note:* For CANOPEN bus motor, non-CANOPEN bus motor does not contain this function.

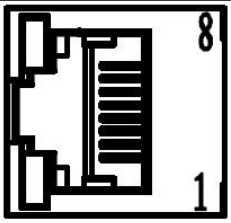
9) Integrated model: MD60 multi-turn CANOPEN bus series



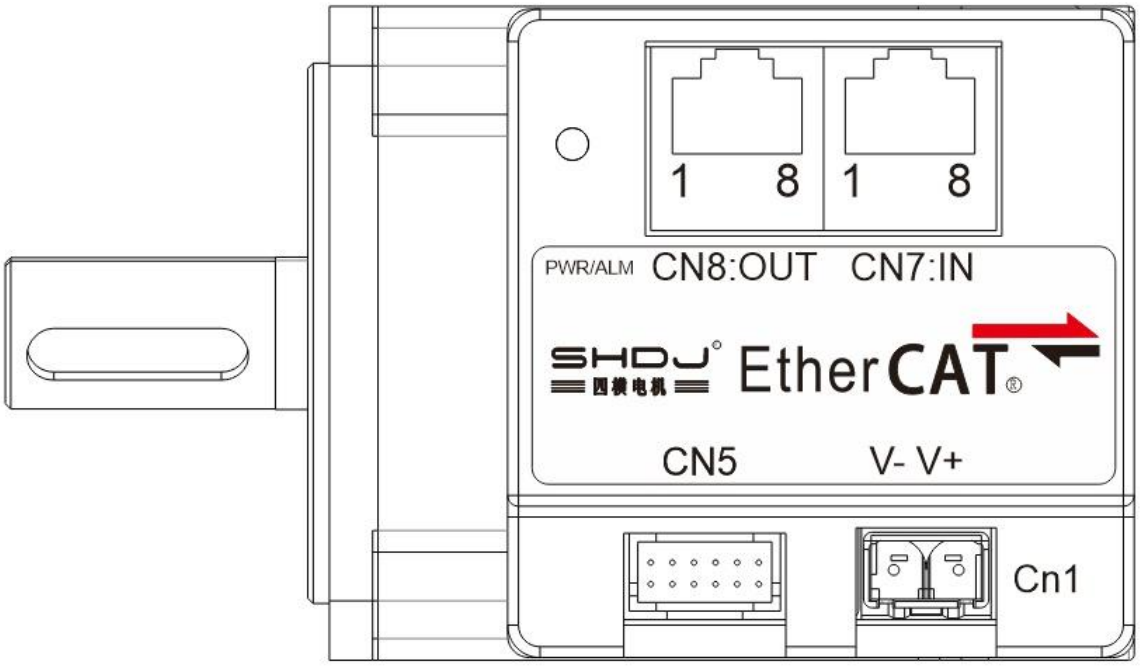
CN1:Power port	terminal serial number	Name	Function	
	1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	GND	DC power supply negative	

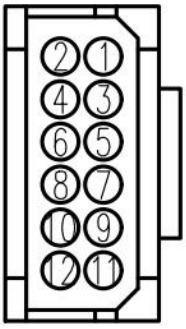
CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	D02+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN7/CN8: Communication ports

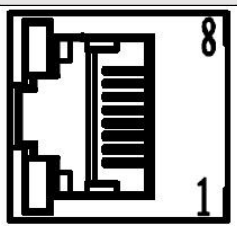
CN7:Communication port	terminal serial number	Name	Function
	1	NC	Reservations
	2	NC	Reservations
	3	NC	Reservations
	4	485B	485 communication negative terminal
	5	485A	485 communication positive
	6	GND	communication ground
	7	CAN_H	CAN communication H
	8	CAN_L	CAN communication L

10) Integrated model: MD60 multi-turn EtherCAT bus series

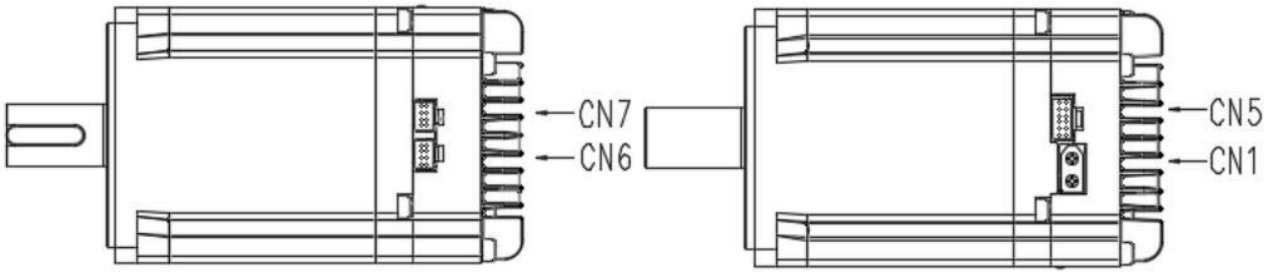


CN1:Power port	terminal serial number	Name	Function	
	1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	GND	DC power supply negative	
CN5:Control communication port	terminal serial number	Name	Function	
	1	DOC	Output terminal of the common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	2	DO1	Output terminal 1	Terminal function depends on user I/O function setting
	3	DO2	Output terminal 2	
	4	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	5	DI1	Input terminal 1	Terminal function depends on user I/O function setting
	6	DI2	Input terminal 2	
	7	DI3	Input terminal 3	
	8	GND	communication ground	
	9	485A	485 communication positive	
	10	485B	485 communication negative	
	11	DIO	Program burning data lines	
	12	CLK	program burn-in clock lines	

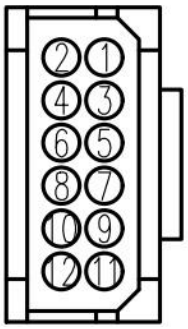
CN7: Ethercat IN; CN8: EtherCAT OUT

CN7:Communication port	terminal serial number	Name	Function
	1	TD+	Data transmission +
	2	TD-	Data transmission -
	3	RD+	Data reception+
	4	NC	Reservations
	5	NC	Reservations
	6	RD-	Data reception -
	7	NC	Reservations
	8	NC	Reservations

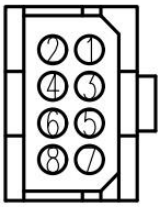
11)One-piece Model:MD80 Series



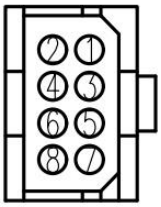
CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	DC+	DC power supply positive	

CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	D02+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN6 communication port

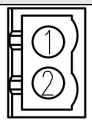
CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

CN7 communication port

CN7:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	CLK	program upgrade clock lines

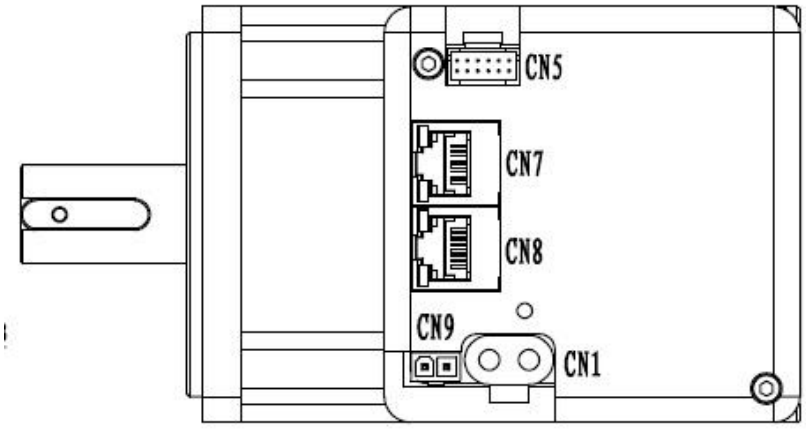
	7	+3.3V	Communication 3.3V power supply
	8	DIO	program upgrade cable

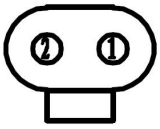
CN9:Drain port

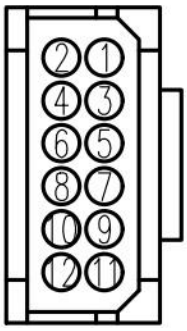
CN1:Power port	terminal serial number	Name	Function	
	1	P+	DC bus	Connect the brake bleeder resistor
	2	D-	Brake release	

Note: * For CANOPEN bus motors, non-CANOPEN bus motors do not include this function.

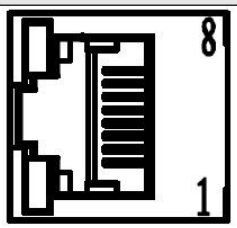
12) Integrated: MD80 Multi-turn CANOPEN Series



CN1:Power port	terminal serial number	Name	Function	
	1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	GND	DC power supply negative	

CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	D02+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

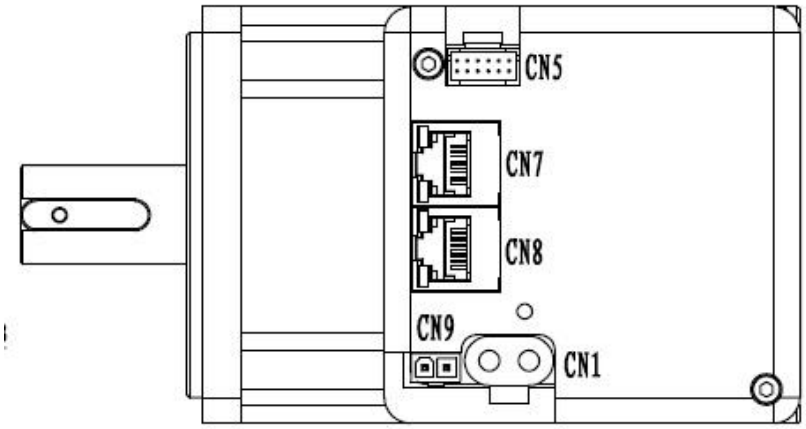
CN7/CN8: Communication ports

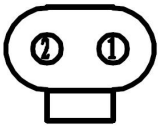
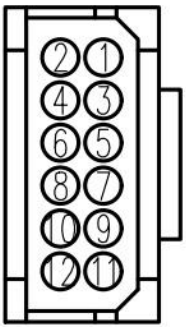
CN7:Communication port	terminal serial number	Name	Function
	1	NC	Reservations
	2	NC	Reservations
	3	NC	Reservations
	4	485B	485 communication negative terminal
	5	485A	485 communication positive
	6	GND	communication ground
	7	CAN_H	CAN communication H
	8	CAN_L	CAN communication L

CN9:Drain port

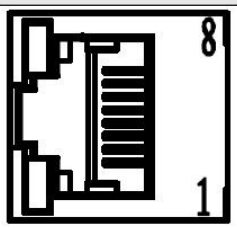
CN1:Power port	terminal serial number	Name	Function	
	1	P+	DC bus	Connect the brake bleeder resistor
	2	D-	Brake release	

13)Integrated model: MD80 Multi-turn EtherCAT



CN1:Power port	terminal serial number	Name	Function	
	1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	GND	DC power supply negative	
CN5:Control communication port	terminal serial number	Name	Function	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	1	DOC	Output terminal of the common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	2	DO1	Output terminal 1	Terminal function depends on user I/O function setting
	3	DO2	Output terminal 2	
	4	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	5	DI1	Input terminal 1	Terminal function depends on user I/O function setting
	6	DI2	Input terminal 2	
	7	DI3	Input terminal 3	
	8	GND	communication ground	
	9	485A	485 communication positive	
	10	485B	485 communication negative	
	11	DIO	Program burning data lines	
	12	CLK	program burn-in clock lines	

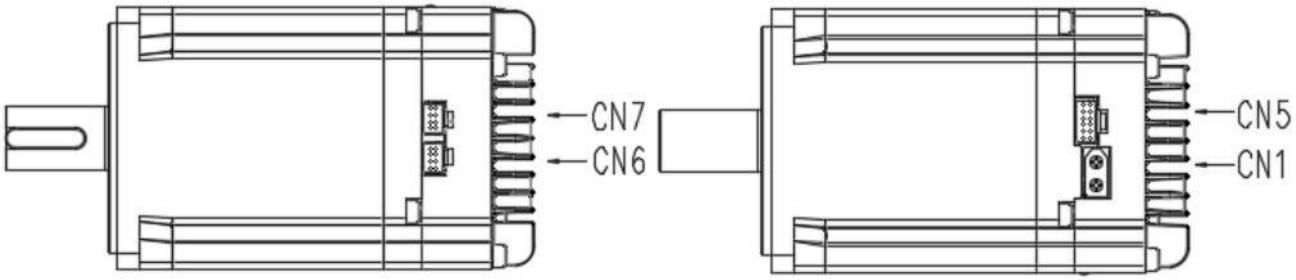
CN7: Ethercat IN; CN8: EtherCAT OUT

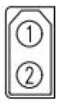
CN7:Communication port	terminal serial number	Name	Function
	1	TD+	Data transmission +
	2	TD-	Data transmission -
	3	RD+	Data reception+
	4	NC	Reservations
	5	NC	Reservations
	6	RD-	Data reception -
	7	NC	Reservations
	8	NC	Reservations

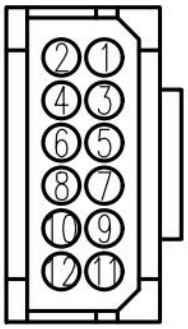
CN9:Drain port

CN1:Power port	terminal serial number	Name	Function	
	1	P+	DC bus	Connect the brake bleeder resistor
	2	D-	Brake release	

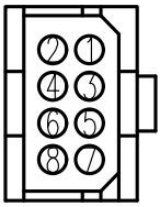
14) Integrated Model:MD86 Series



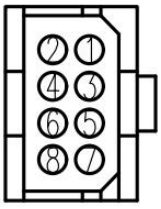
CN1:Power port	terminal serial number	Name	Function	
	1	GND	DC power supply negative	DC24~48V power supply, positive and negative polarity reversal will damage the driver
	2	DC+	DC power supply positive	

CN5:Control communication port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	D02+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5~24V Adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN6 communication port

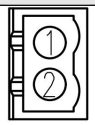
CN6:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

CN7 communication port

CN7:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2*	CAN_H	CAN communication H
	3	485B	485 communication negative terminal
	4*	CAN_L	CAN communication L
	5	GND	communication ground
	6	CLK	program upgrade clock lines
	7	+3.3V	Communication 3.3V

			power supply
	8	DIO	program upgrade cable

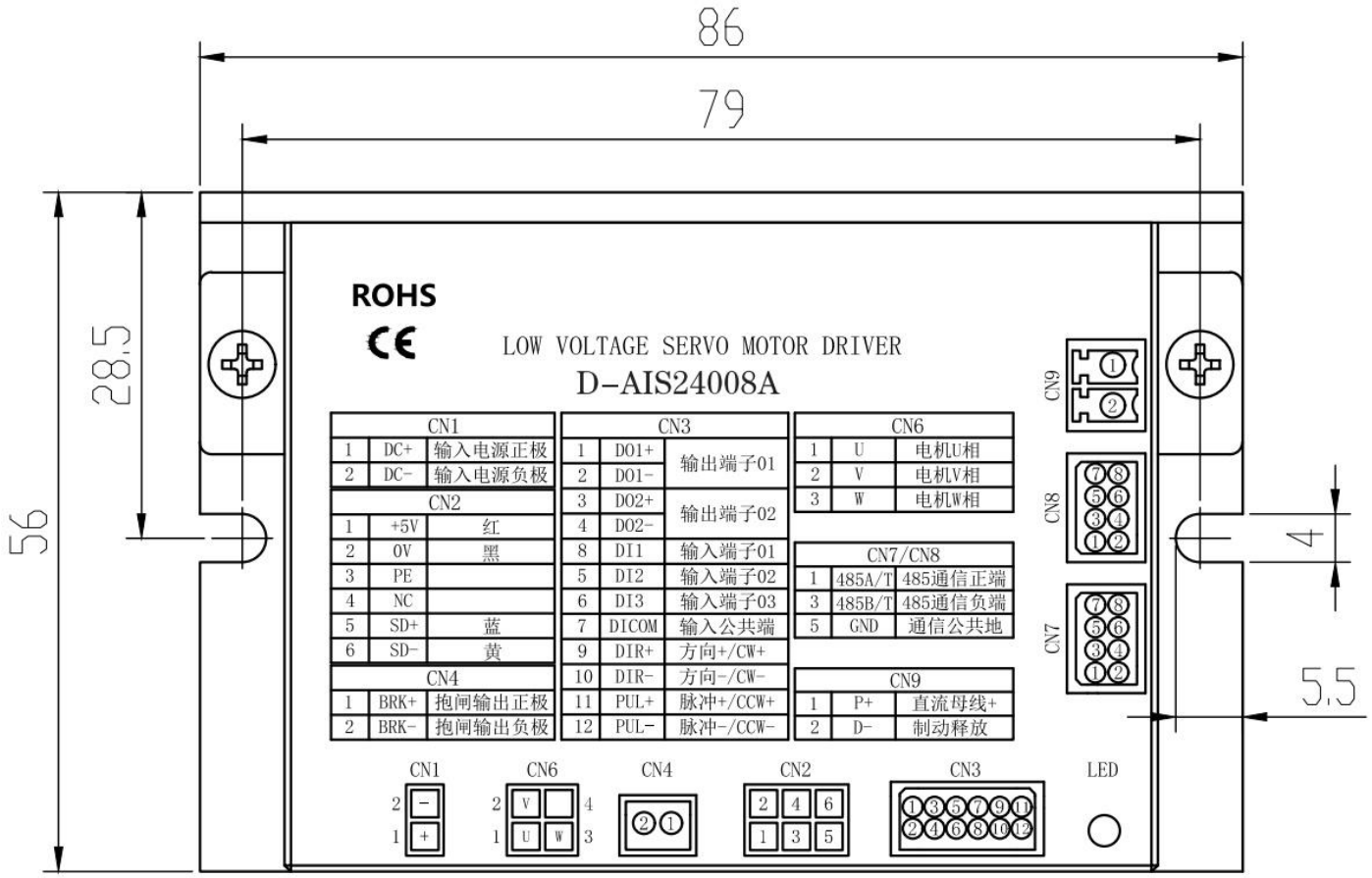
CN9:Drain port

CN1:Power port	terminal serial number	Name	Function	
	1	P+	DC bus	Connect the brake bleeder resistor
	2	D-	Brake release	

Note: * For CANOPEN bus motors, non-CANOPEN bus motors do not include this function.
Note: Products are being updated, this manual does not include the model please go to our official website to confirm

1.3-Low Voltage DC Split Drive Hardware Interface

1) Driver Model:D-AIS24005A/C~D-AIS24008A/C Terminal Interface Diagram

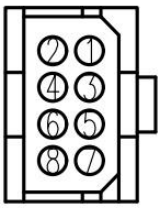


- DI/DO Low Voltage DC Split Interface Factory Default Definition

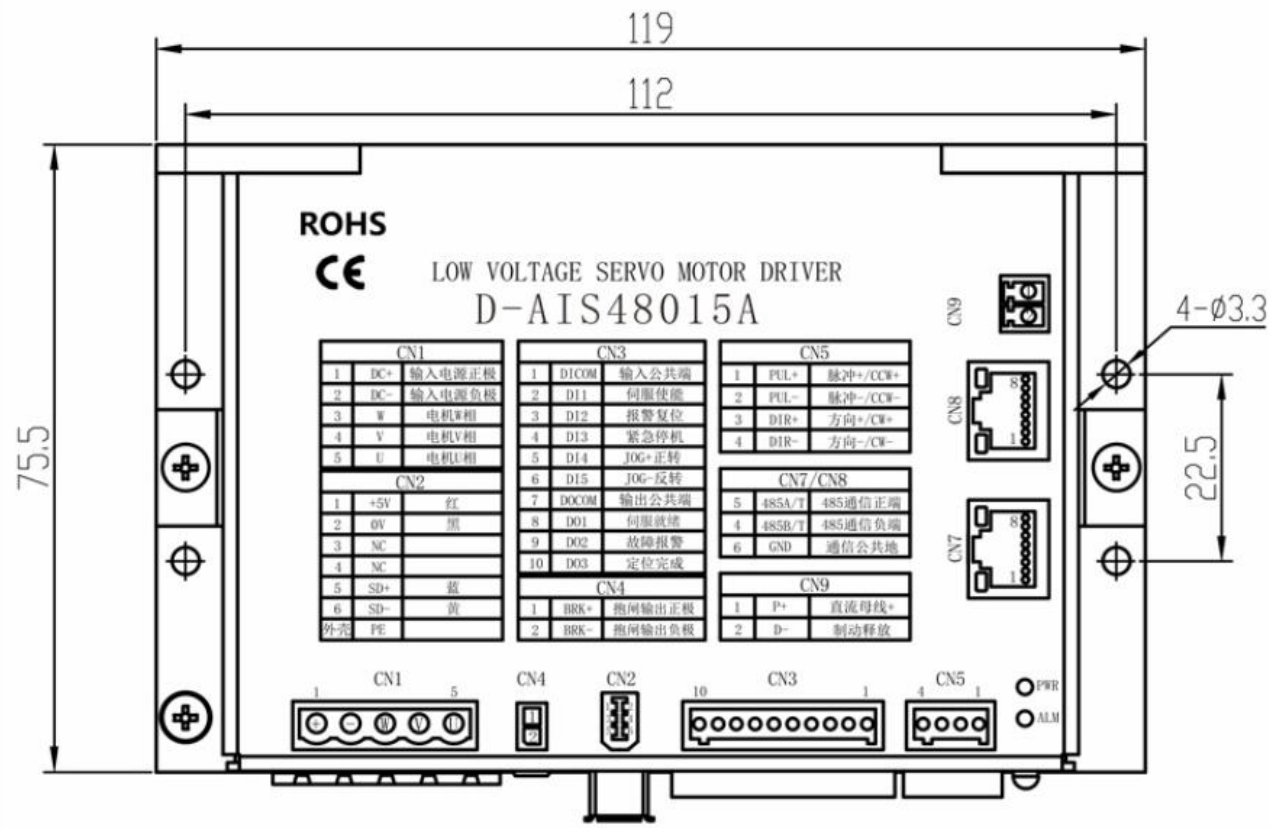
Input terminals	terminal serial number	Functional Description	function symbols
DI_COM	CN3/7	Input Common	COM
DI1	CN3/8	Servo Enable	SON
DI2	CN3/5	Alarm reset	ALM_RST
DI3	CN3/6	Emergency shutdown	E_STOP

Output terminals	terminal serial number	Functional Description	function symbols
DO1+	CN3/1	Servo ready	READY
DO1-	CN3/2		
DO2+	CN3/3	Fault Alarm Output	ALM
DO2-	CN3/4		

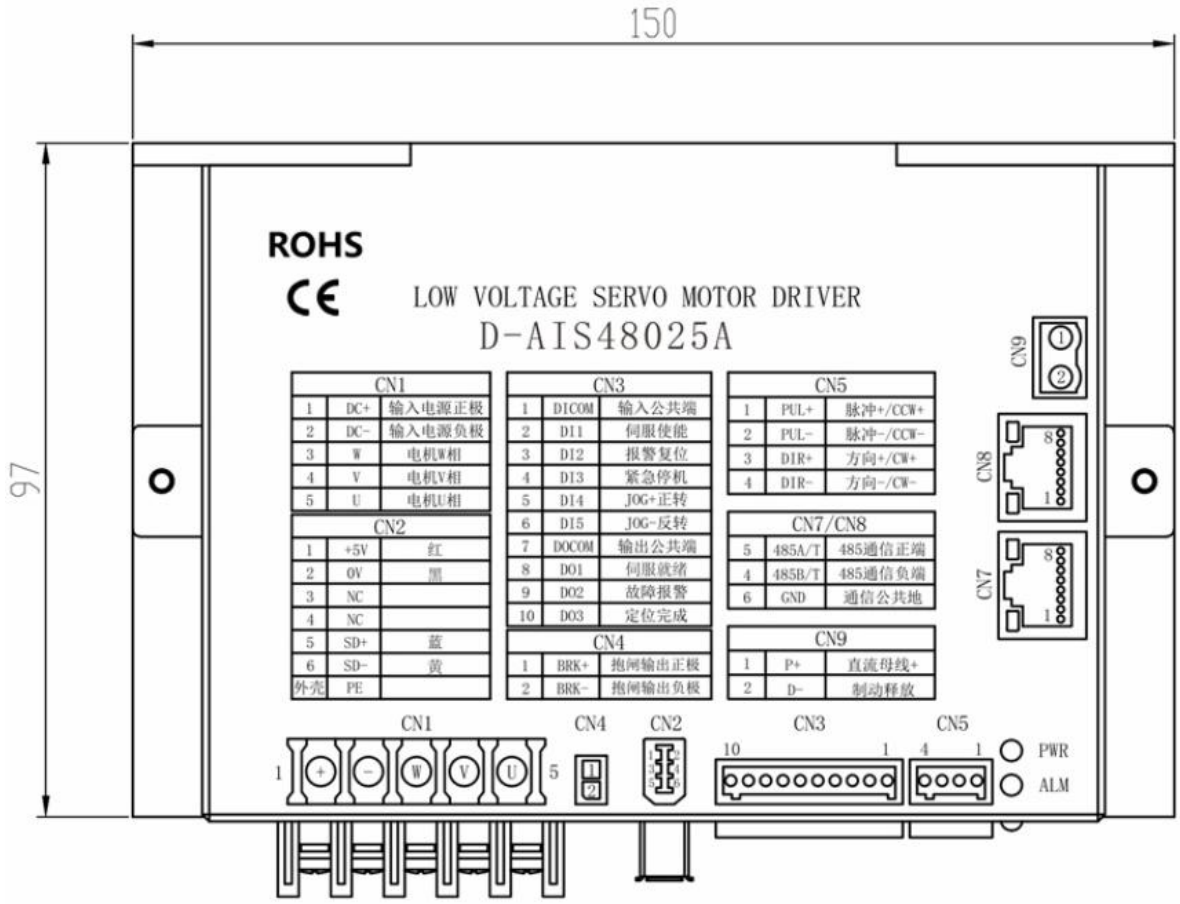
- The communication interface is defined by default

CN7/CN8: Communication ports	terminal serial number	Name	Function
	1	485A	485 communication positive
	2	NC	Reservations
	3	485B	485 communication negative terminal
	4	NC	Reservations
	5	GND	communication ground
	6	NC	Reservations
	7	NC	Reservations
	8	NC	Reservations

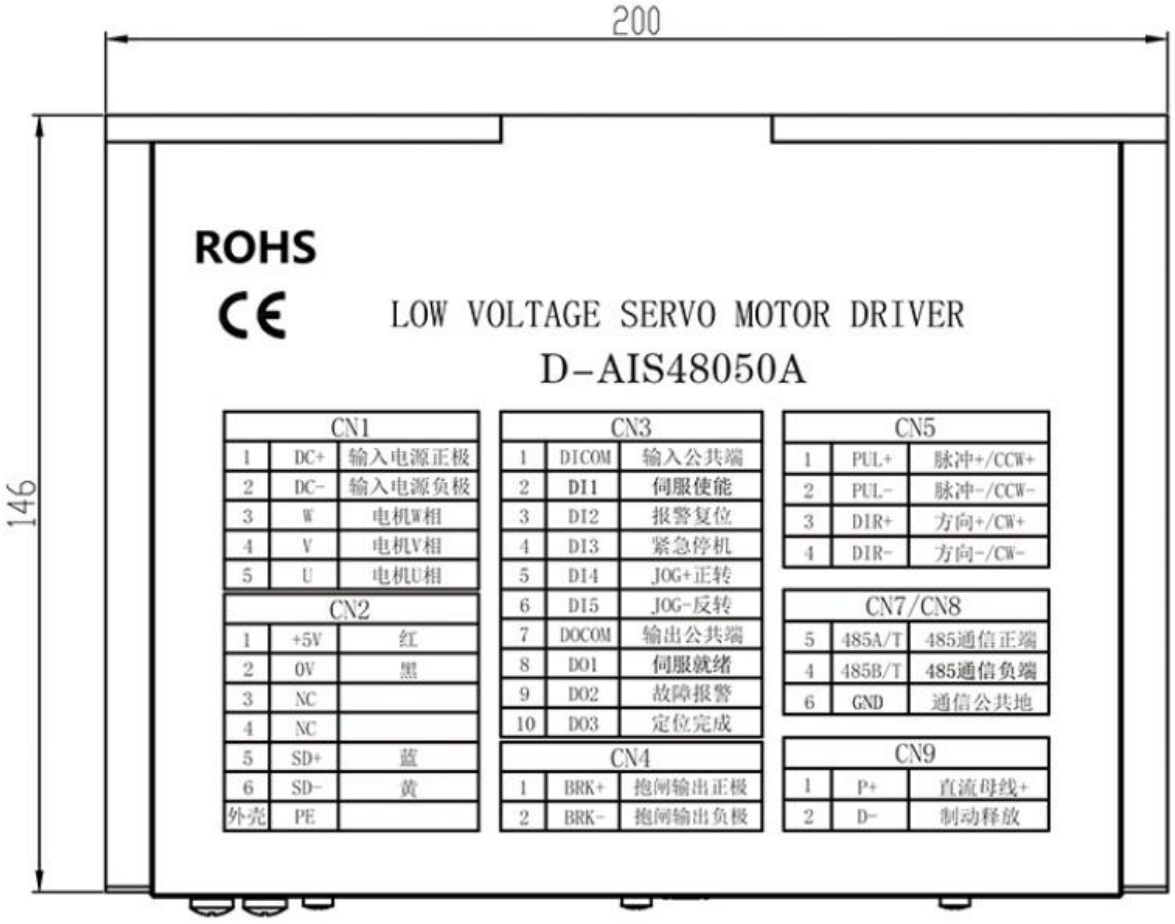
2) Driver Model:D-AIS4815A/C Terminal Interface Diagram



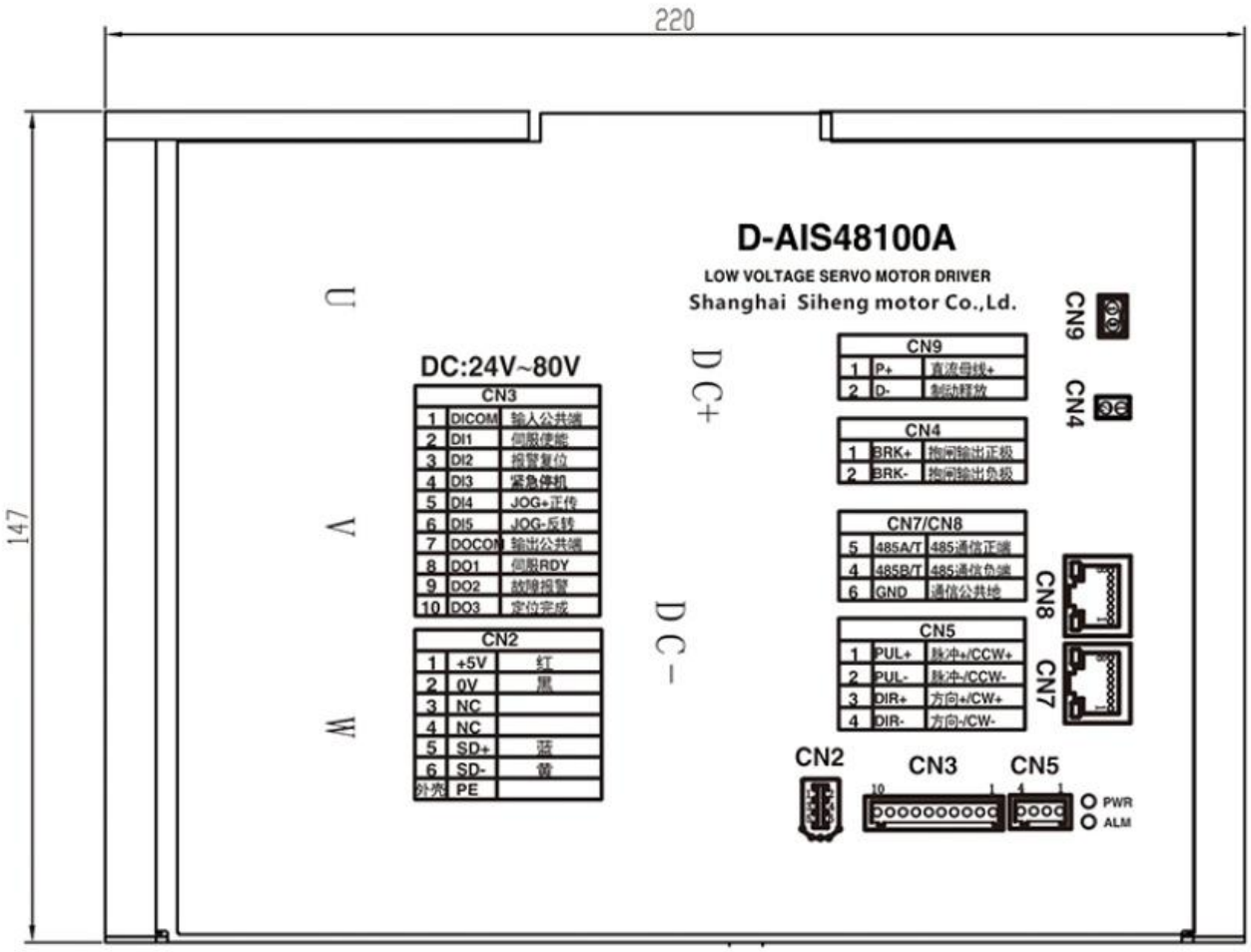
3) Driver Model:D-AIS4825A/C Terminal Interface Diagram



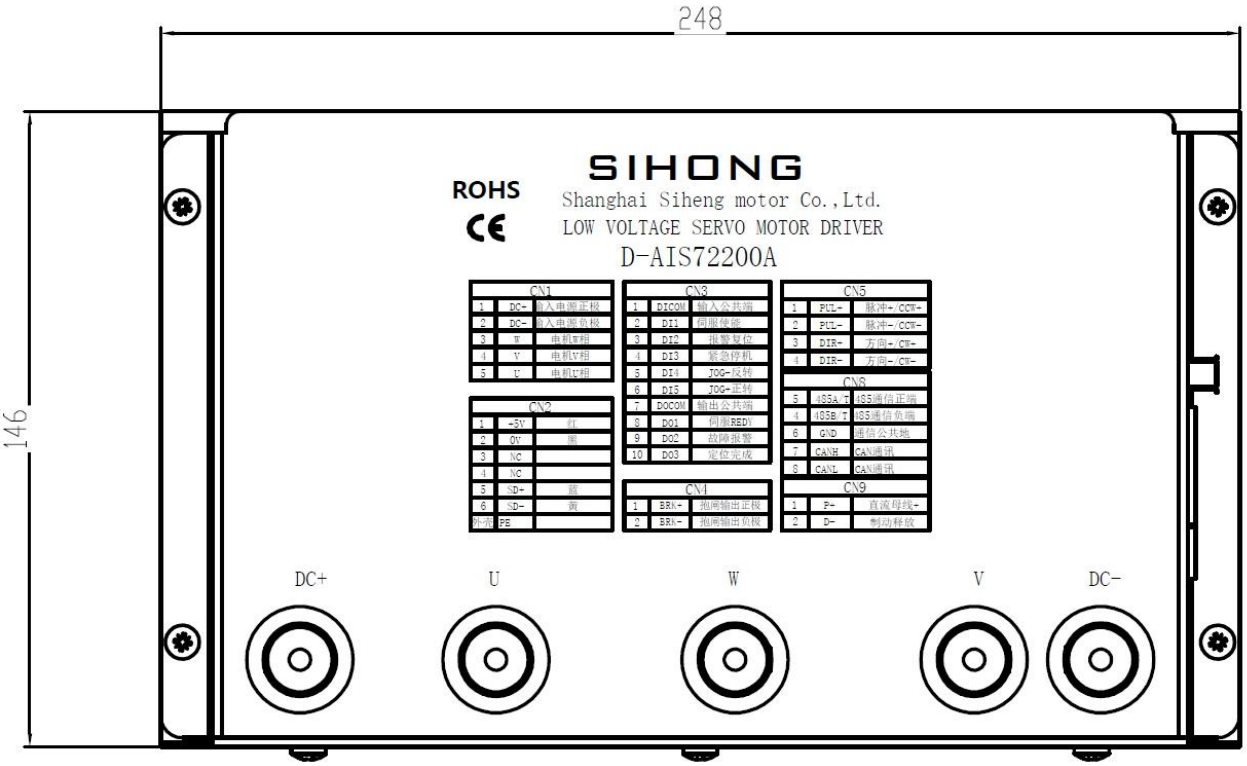
4) Driver Model:D-AIS4850A/C Terminal Interface Diagram



5) Driver Model:D-AIS48100A/C Terminal Interface Diagram



6) Driver Model:D-AIS72200A/C Terminal Interface Diagram

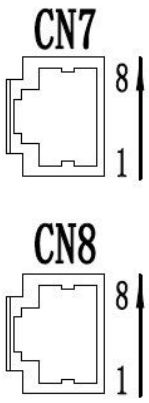


- DI/DO Low Voltage DC Split Interface Factory Default Definition

Input terminals	terminal serial number	Functional Description	function symbols
DI_COM	CN3/1	Input Common	COM
DI1	CN3/2	Servo Enable	SON
DI2	CN3/3	Alarm reset	ALM_RST
DI3	CN3/4	Emergency shutdown	E_STOP
DI4	CN3/5	Positive rotation at the point	JOG+
DI5	CN3/6	Tap to reverse	JOG-

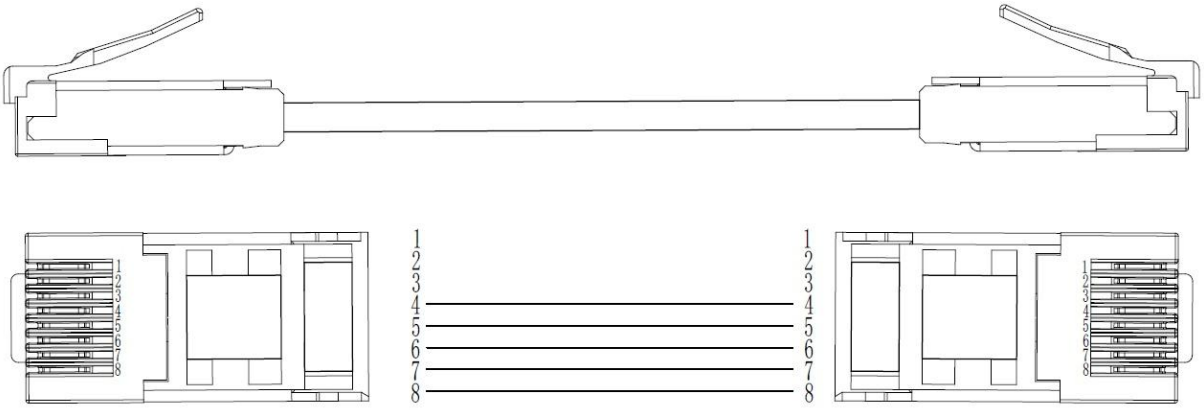
Output terminals	terminal serial number	Functional Description	function symbols
DO_COM	CN3/7	Output Common	COM
DO1	CN3/8	Servo ready	READY
DO2	CN3/9	Alarm output	ALM
DO3	CN3/10	Positioning complete	COIN

- Split Low Voltage Servo Drive Communication port definition



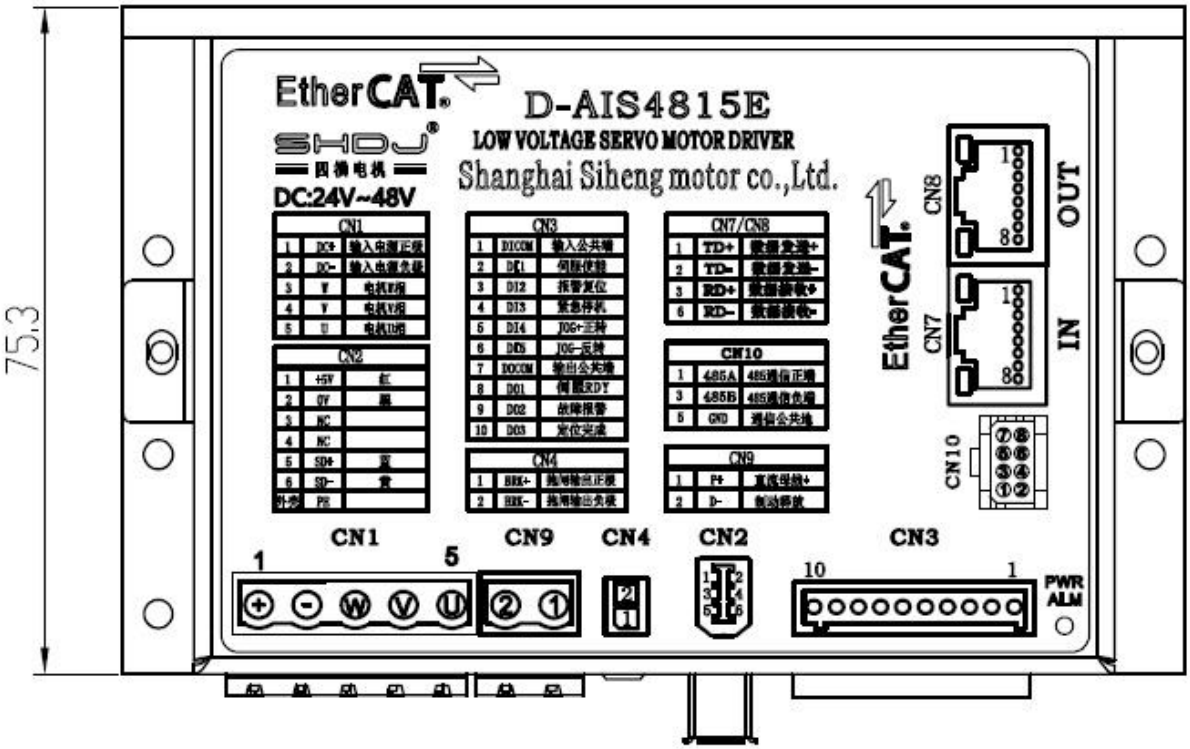
脉冲版			CANOPEN版		
端子序号	名称	功能	端子序号	名称	功能
1	NC	引脚1/2/3一定不要接入任何线缆，否则会损坏驱动器	1	NC	引脚1/2/3一定不要接入任何线缆，否则会损坏驱动器
2	NC		2	NC	
3	NC		3	NC	
4	485B	485通信负端	4	485B	485通信负端
5	485A	485通信正端	5	485A	485通信正端
6	GND	通信公共地	6	GND	通信公共地
7	NC	预留	7	CAN_H	CAN通信高
8	NC	预留	8	CAN_L	CAN通信低

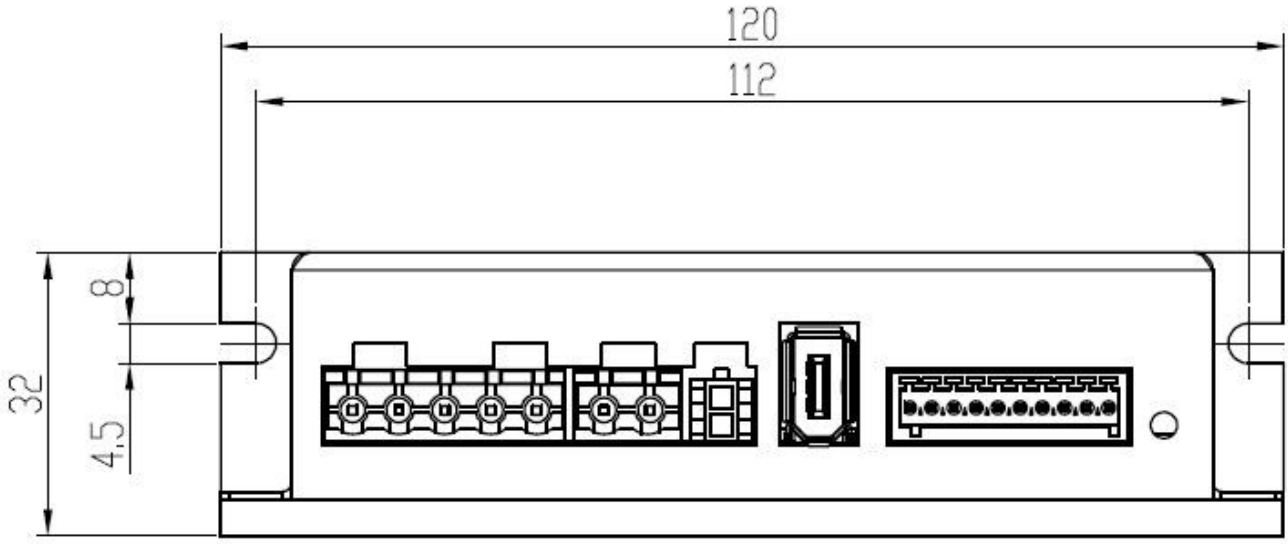
- Split Low Voltage Servo Drive RS485, CAN Loop Communication Cable Diagram



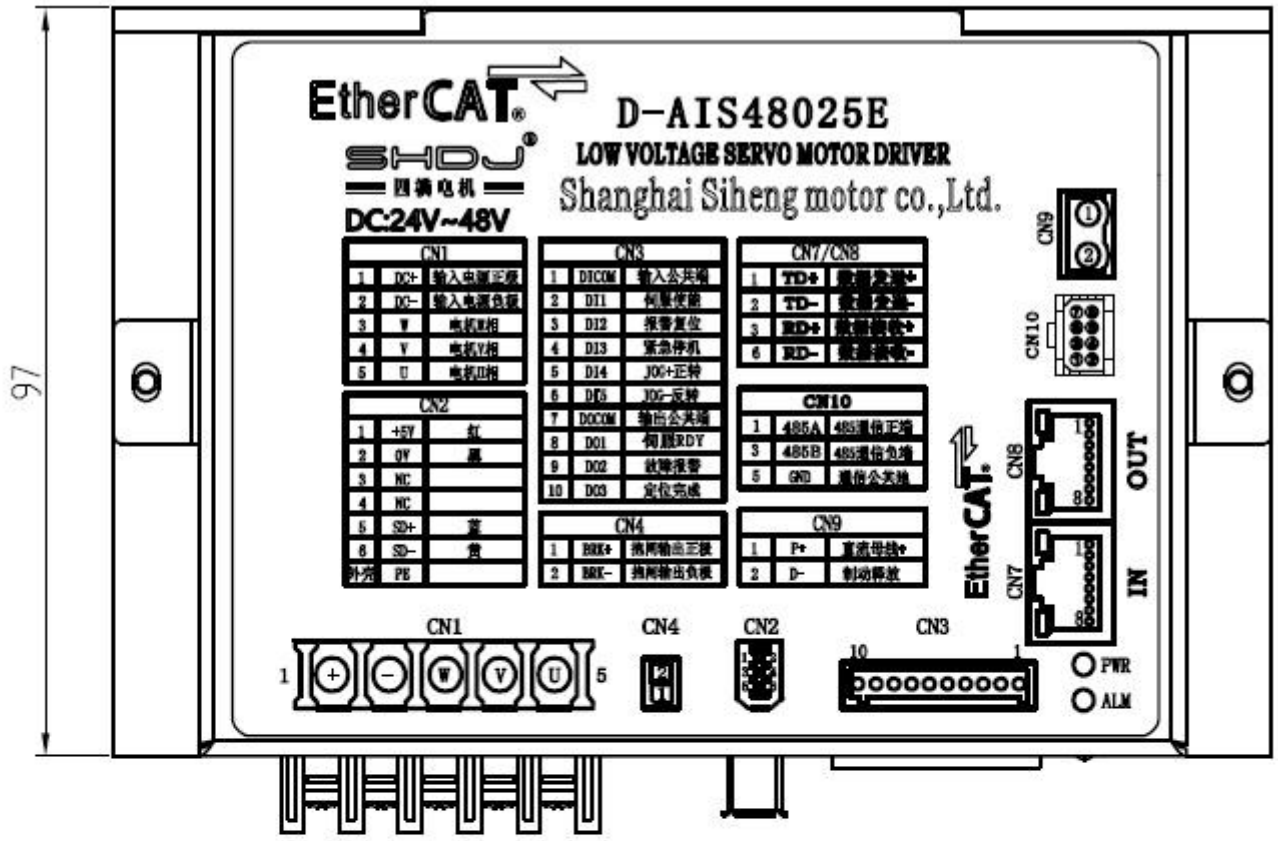
1.4-Split EtherCAT Bus Low Voltage Servo Drives

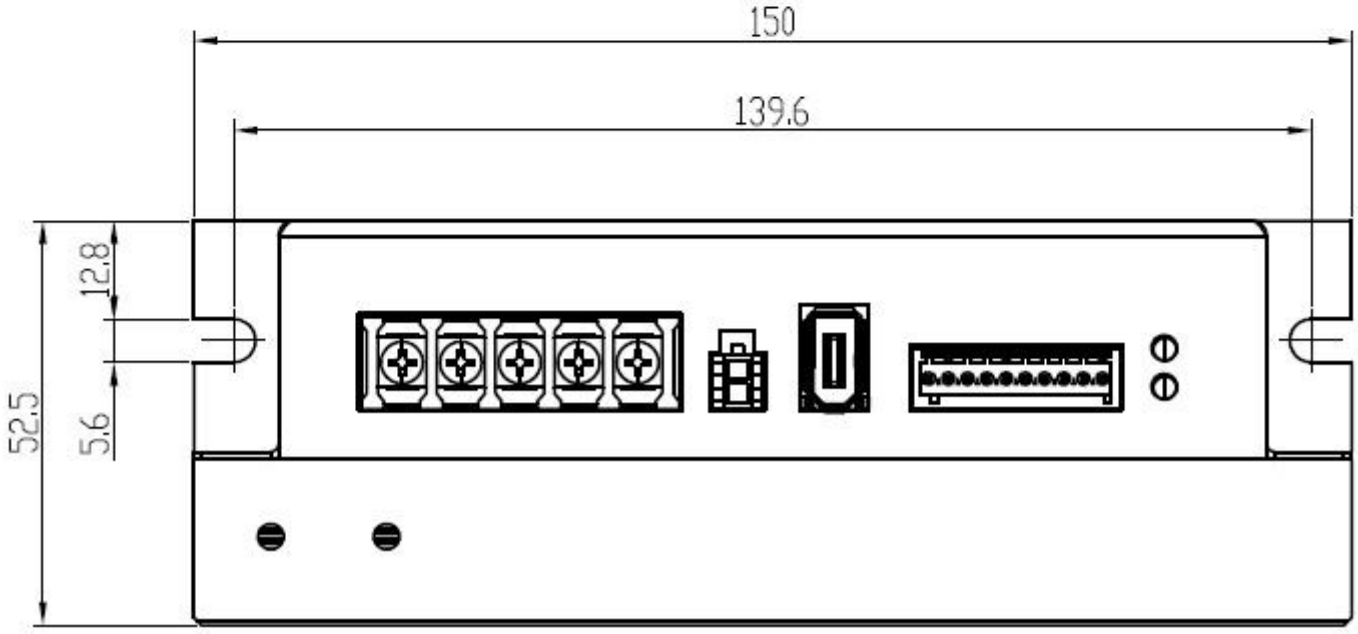
1) D-AIS4815E Low Voltage Servo Drive





2) D-AIS4825E Low Voltage Servo Drive





3) D-AIS4815E/D-AIS4825E Interface Definition

CN1: Input power supply and motor power cable port

terminal serial number	Name	Function	
1	DC+	DC power supply positive	DC24~48V power supply, positive and negative polarity reversal will damage the driver
2	DC-	DC power supply negative	
3	W	Motor W phase	
4	V	Motor V-phase	
5	U	Motor U-phase	

CN2:Motor encoder port

terminal serial number	Name	Function
1	+5V	Encoder power supply 5V positive
2	0V	encoder power supply negative
3	NC	Reservations
4	NC	Reservations
5	SD+	Encoder communication positive
6	SD-	Encoder communication negative

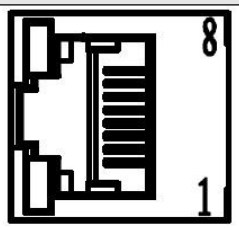
CN3: Digital Input/Output Port

terminal serial number	Name	Function
1	DICOM	digital input common
2	DI1	Digital input 1: default servo enable
3	DI2	Digital Input 2: Default Alarm Reset
4	DI3	Digital Input 3: Default Emergency Stop
5	DI4	Digital Input 4: Default JOG + Positive Transmission
6	DI5	Digital Input 5: Default JOG-Reverse
7	DOCOM	Digital output common
8	DO1	Digital Output 1: Default servo-ready
9	DO2	Digital Output 2: Default servo alarm output
10	DO3	Digital Output 3: Default positioning is complete

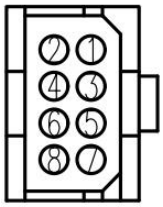
CN4:Motor Brake Output Port

terminal serial number	Name	Function
1	BRK+	Holding brake output positive
2	BRK-	Holding brake output negative

CN7:EtherCAT IN port;CN8:EtherCAT OUT port

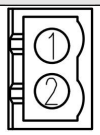
CN7:Communication port	terminal serial number	Name	Function
	1	TD+	Data transmission +
	2	TD-	Data transmission -
	3	RD+	Data reception+
	4	NC	Reservations
	5	NC	Reservations
	6	RD-	Data reception -
	7	NC	Reservations
	8	NC	Reservations

CN10:RS485 communication port

CN10:Communication port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2	NC	Reservations
	3	485B	485 communication negative terminal
	4	NC	Reservations
	5	GND	communication ground
	6	CLK	program upgrade clock lines
	7	+3.3V	Communication 3.3V

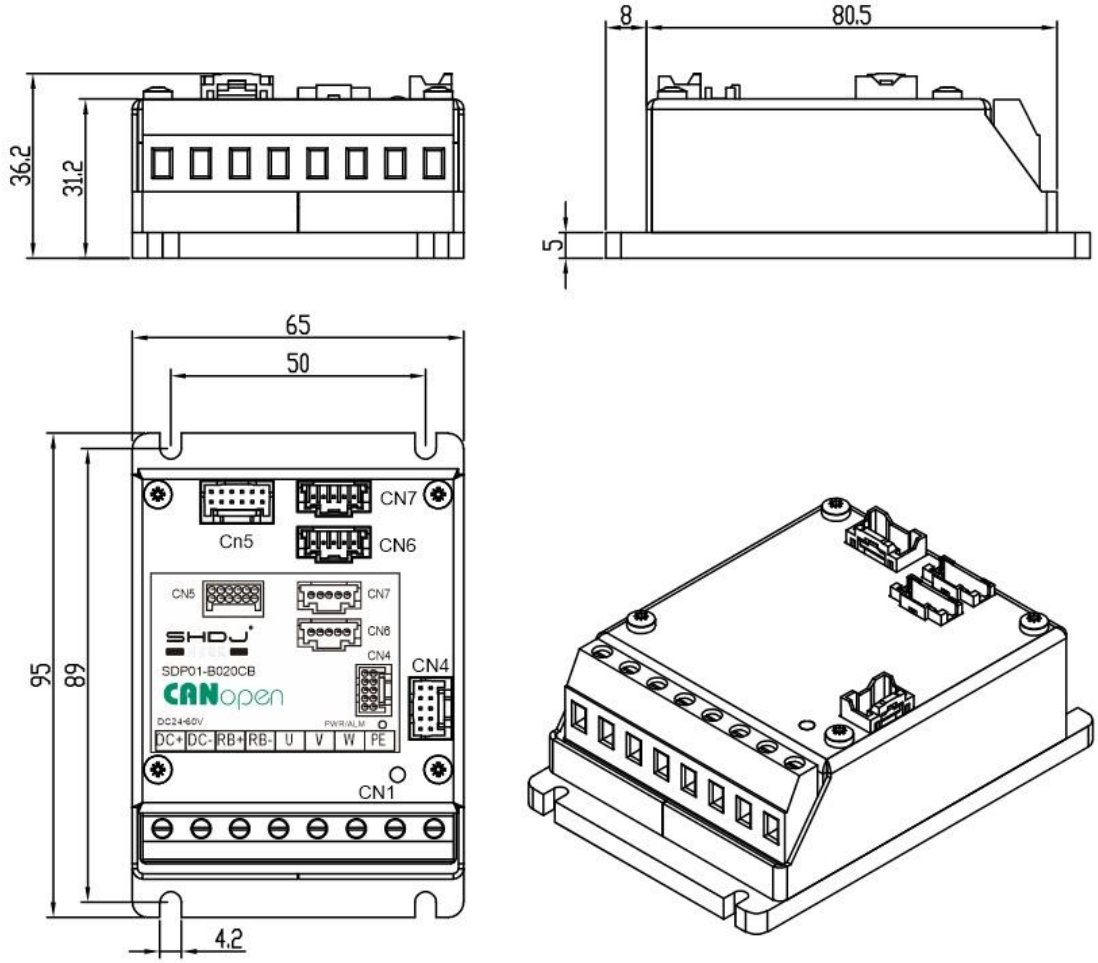
			power supply
	8	DIO	program upgrade cable

CN9:Drain port

CN1:Power port	terminal serial number	Name	Function	
	1	P+	DC bus	Connect the brake bleeder resistor
	2	D-	Brake release	

1.5 Thin Split Low Voltage Servo Drive

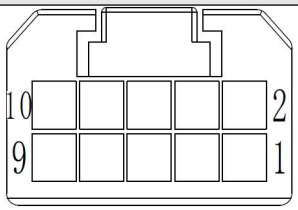
1）SDP01-B020CB



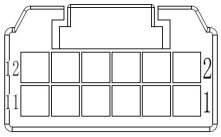
CN1:Power, motor, brake ports

terminal serial number	Name	Function	
1	DC+	DC power supply negative	DC24~60V power supply, positive and negative reversal will damage the driver.
2	DC-	DC power supply positive	
3	RB+	DC bus +	
4	RB-	Brake Drain	
5	U	Motor U-phase	
6	V	Motor V-phase	
7	W	Motor W phase	
8	PE	Grounding terminal	

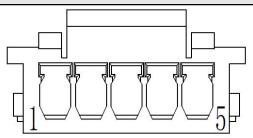
CN4: Encoder communication port

CN4:Encoder port	terminal serial number	Name	Function
	1	SD+	Encoder communication positive
	2	SD-	Encoder communication negative
	3	PE	encoder shielded cable
	4	NC	Reservations
	5	5V	Encoder 5V power positive
	6	GND	Encoder power negative
	7	NC	Reservations
	8	NC	Reservations
	9	CLK	program upgrade clock lines
	10	DIO	program upgrade cable

CN5: Digital input port

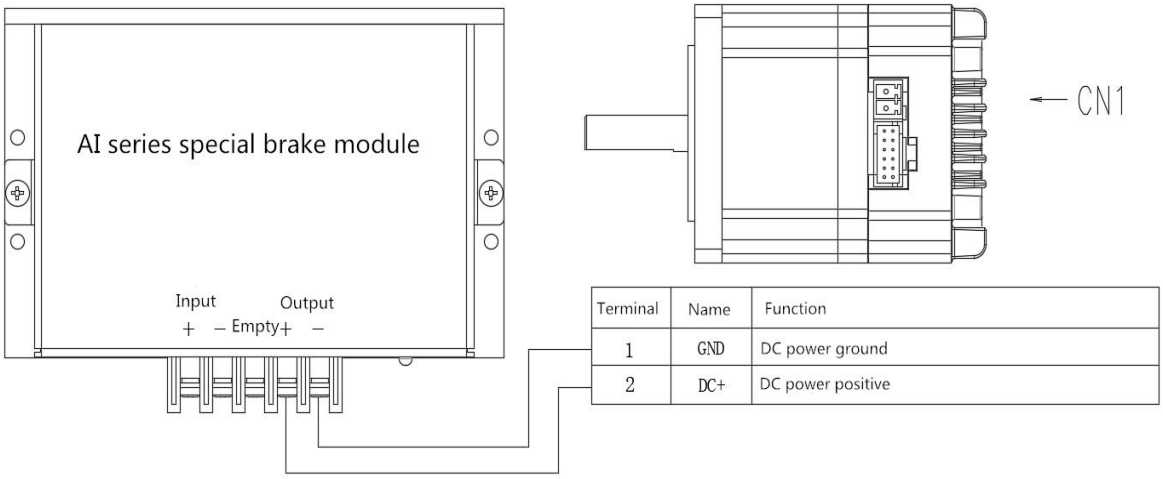
CN4:Encoder port	terminal serial number	Name	Function	
	1	DO1+	Output terminal 1	The function of this terminal depends on the user's I/O function setting.
	2	DO1-		
	3	DO2+	Output terminal 2	
	4	DO2-		
	5	DI2	Input terminal 2	
	6	DI3	Input terminal 3	
	7	DIC	Input terminal common terminal, used to drive the input optocoupler, connected to DC12 ~ 24V (common positive NPN connection) or 0V (common negative PNP connection), current ≥ 100mA	
	8	DI1	Input terminal 1	The function of this terminal depends on the user's I/O function setting.
	9	DIR+	Command Direction Positive	DC5-24V adaptive
	10	DIR-	Command Direction Negative	
	11	PULS+	Command Pulse Positive	
	12	PULS-	Command Pulse Negative	

CN6/CN7: RS485, CAN communication port

CN4:Encoder port	terminal serial number	Name	Function
	1	485A	485 communication positive
	2	485B	485 communication negative
	3	CAN_H	CAN communication H
	4	CAN_L	CAN communication L
	5	GND	communication ground

1.6-Low Voltage DC Motor Driven Brake Release

- Specialized brake modules
  Integrated series motors do not have an external braking relief resistor interface, when the load inertia is large, it is recommended to purchase our AIS special braking module, to ensure that
  Bus voltage quality. The external DC power supply is connected to the input +- port of the brake module, and the output +- port of the module is connected to the motor power interface.

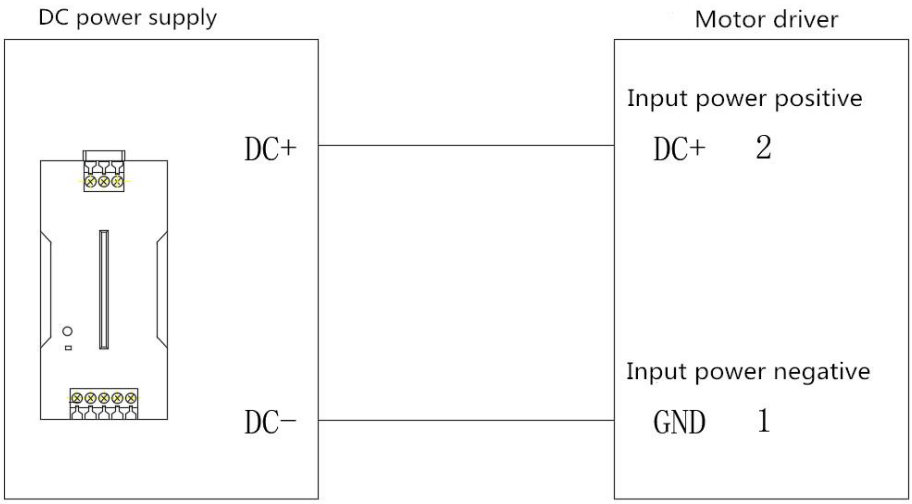


- Low Voltage DC External Brake Relief Resistor

Split drive models that	the rated output current of the driver	External Braking Resistor Resistance Requirements	External braking resistor power
D-AIS24008A	08A	10 ohm-30 ohm range	Greater than 100W
D-AIS48015A/C/E	15A	10 ohm-30 ohm range	Greater than 100W
D-AIS48025A/C/E	25A	05 ohm-15 ohm range	Greater than 200W
D-AIS48050A/C	50A	05 ohm-15 ohm range	Greater than 200W
D-AIS48100A/C	100A	05 ohm-15 ohm range	Greater than 200W
D-AIS72200A/C	200A	05 ohm-15 ohm range	Greater than 200W
D-AIS96050A/C	50A	10 ohms	Greater than 200W
D-AIS96100A/C	100A	10 ohms	Greater than 200W
D-AIS96200A/C	200A	10 ohms	Greater than 200W
SDP01-B020CB	20A	05 ohm-15 ohm range	Greater than 200W
MD80 All-in-One	20A	05 ohm-15 ohm range	Greater than 200W
MD86 One-piece 20A	20A	05 ohm-30 ohm range	Greater than 200W
BMD80 One-piece backpack model	20A	05 ohm-30 ohm range	Greater than 200W

Chapter II Standard Wiring Diagrams

2.1 - DC Product Power Supply Wiring

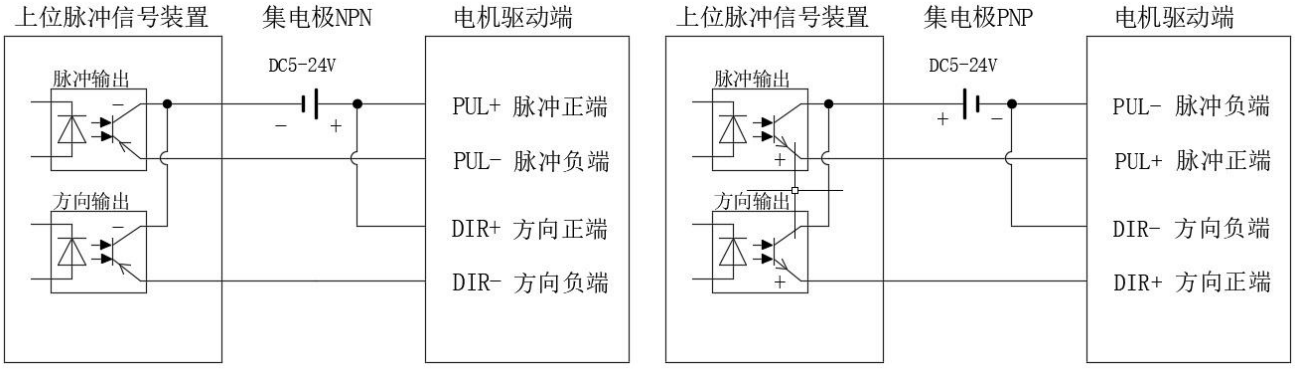


Note 1: Power input terminals are strictly differentiated between positive and negative poles, the input voltage range of different models may not be the same, please refer to the previous chapter corresponding to the model hardware interface reference wiring.

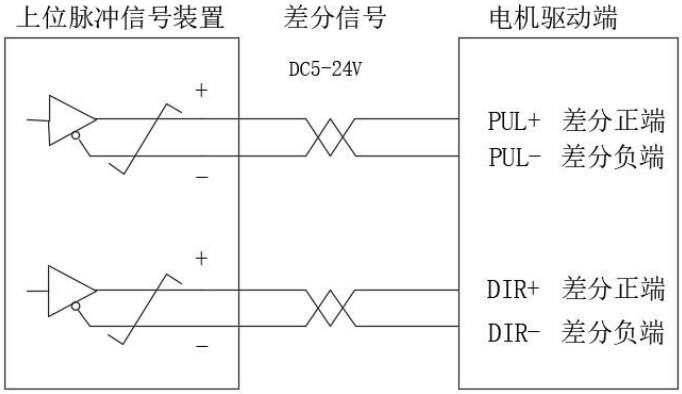
Note 2: This product has a certain overload capacity, elected to match the external DC switching power supply power supply should be greater than the rated current of the product 1.5 times the output capacity. The rated current of the product is marked on the nameplate.

2.2-High-Speed Pulse Signal Wiring

- Open Collector Wiring , , Open Collector Wiring , , Open Collector Wiring



- Differential signal wiring



Note 1: Different motor drives may not have the same location of the pulse input terminals, please refer to the description of the hardware interface of the corresponding model in the previous section.

Note 2: This product supports 5-24V wide voltage pulse input, the maximum receiving pulse frequency is 100KHZ, the upper pulse device note that the control frequency is limited to 100K or less, otherwise the driver is easy to lose the pulse, resulting in

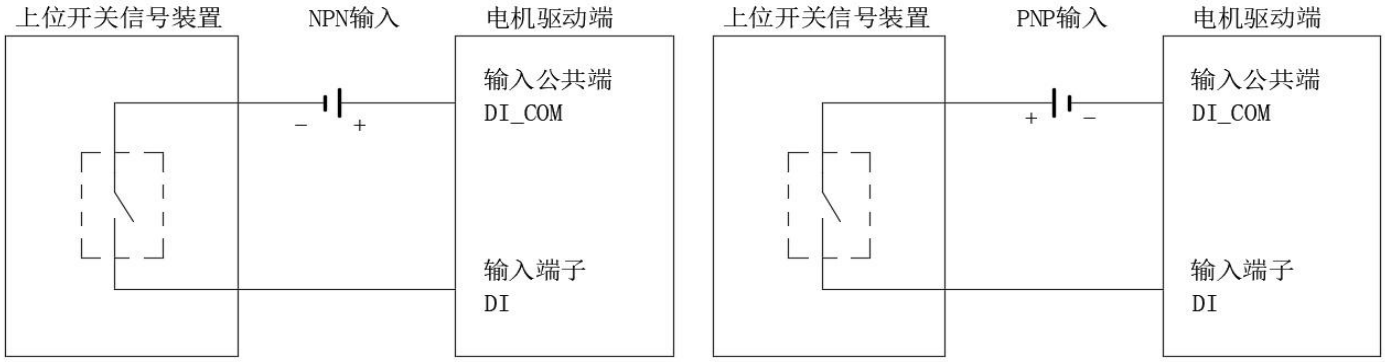
abnormal positioning.

Note 3: It is recommended that the pulse control line use twisted shielded wire, and do not lay in the same line with strong interference, can effectively shield the external strong magnetic interference.

Note 4: The above pulse wiring should be consistent with H05-15 parameters, H05-15 factory default pulse + direction of the command form.

2.3-DI and DO Signal Wiring

- DI input terminal wiring



Note 1: Input terminal voltage receiving range DC12-24V, too high voltage may lead to internal optocoupler isolation damage.

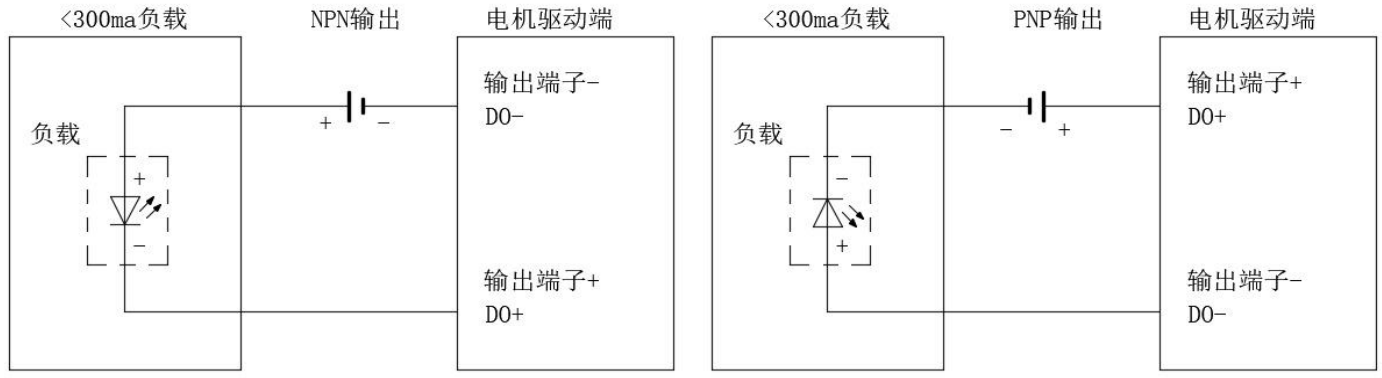
Note 2: Each DI can be freely assigned to different functions (refer to section 4.3 DIDO Parameters), but the same function cannot be assigned to more than one DI.

Note 3: If the output level is low when controlling DI port operation, choose NPN type connection; if the output level is high when controlling DI port operation, choose PNP type connection; if the output level is high when controlling DI port operation, choose PNP type connection; if the output level is high when controlling DI port operation, choose PNP type connection.

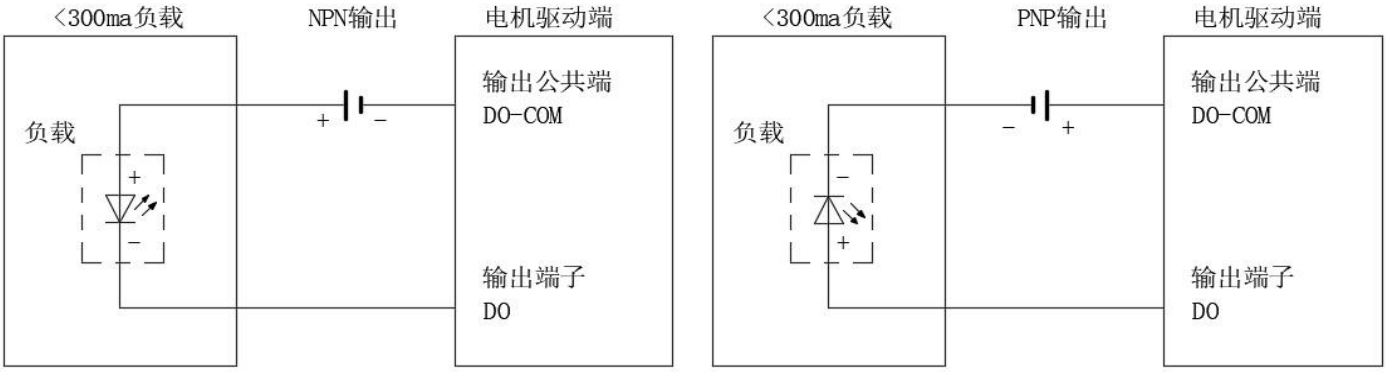
Note 4: Input terminal signal width should be >5ms, otherwise it will be regarded as invalid signal.

- DO output terminal wiring

1、MD series one-piece



2、D Series Split Drive



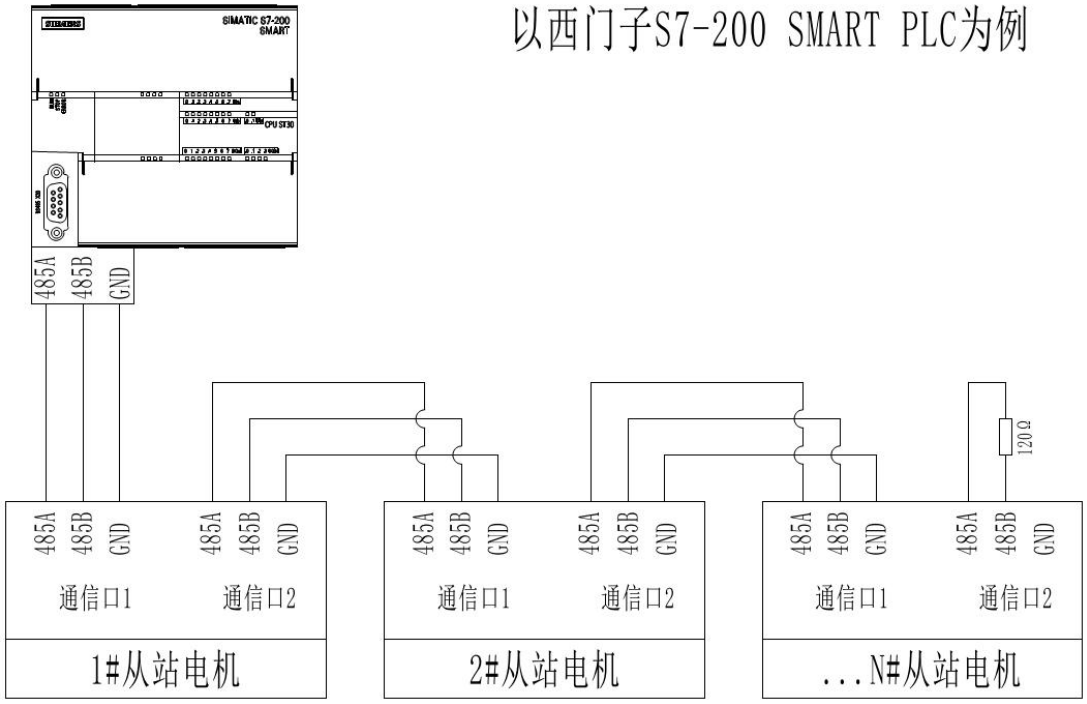
Note 1: The maximum driving capacity of the output terminal is <300ma current, if you need to drive a large load, please use the intermediate relay conversion.

Note 2: Each DO is free to assign different functions (refer to section 4.3 DIDO Parameters).

Note 3: If the output level is low when the DO port is operated, select NPN type connection; if the output level is high when the DO port is operated, select PNP type connection; if the output level is high when the DO port is operated, select PNP type connection; if the output level is high when the DO port is operated, select PNP type connection.

2.4-RS485 Communication Wiring

- Multi-slave connections



Note 1: For multi-slave connection, if the communication signal is noisy, it is recommended to add a 120 ohm termination resistor on the last slave to ensure the communication quality.
Note 2: Communication-related reading (Chapter 4.9 RS485-related parameters)

- The OP debugging connection

Note 1: Usually there is no direct 485 interface on the computer, you need to convert USB to 485 in order to connect the slave motor driver.
Note 2: Our official website can download the PC-based debugging software, convenient for users to debug.

Chapter III. Control Flow Charts

3.1-Control Flowchart

The system is set up in a tree structure, expanding branches step by step, please refer to the following table for the design when applying the product; the system structure is from left to right →>

<table>
<tr><td rowspan="9">Control model Choices H02_00</td><td rowspan="4">=0
Speed control</td><td rowspan="4">Speed command selection H06_02 (Option)
↓
H06-00 (main)
H06-01 (auxiliary)</td><td>Instruction source = 0
Derived from internal parameters</td><td colspan="2">H06_03 Setting speed
DI-associated SON enable control start/stop</td></tr>
<tr><td>Instruction source = 2
PWM duty cycle given</td><td colspan="2">PWM duty cycle given speed</td></tr>
<tr><td rowspan="3">Source of instruction = 5
Sourced from internal multiband speeds</td><td rowspan="3">H12_00
Multi-step speed operation mode selection</td><td>= 0 single-cycle operation</td></tr>
<tr><td>= 1 cycle running</td></tr>
<tr><td>=2 DI switching operation</td></tr>
<tr><td>JOG Speed Control</td><td colspan="2">H06_04 Setting speed
DI associated with JOGCMD ± spot operation</td></tr>
<tr><td rowspan="4">=1
position control</td><td rowspan="4">position command selection H05_00</td><td rowspan="3">=0
originating from pulse control</td><td rowspan="3">H05_15
pulse comm morphology selection</td><td>=0 pulse+direction positive logic</td></tr>
<tr><td>=1 pulse+direction negative logic</td></tr>
<tr><td>=2 AB phase pulse</td></tr>
<tr><td>=2
derived from multi-segment control</td><td rowspan="3">H11_00
Multi-segment operation mode selection</td><td>=3 CW/CCW double pulse</td></tr>
<tr><td>=0 Single-cycle operation</td></tr>
<tr><td>=1 Cyclic operation</td></tr>
<tr><td>=2
torque control</td><td>torque command selection H07_02 (selection)
↓
H07-00 (main)
H07-01 (auxiliary)</td><td>Instruction source = 0
Derived from internal parameters</td><td colspan="2">H07_03 Setting torque.
H07_19 Setting the forward maximum speed.
H07_20 Setting the reverse maximum speed
DI-associated SON enable control start/stop</td></tr>
<tr><td>=8
CANOPEN control</td><td>PP/PV/PT/HM/ CSP/CSV/CST</td><td>Compliance with CIA402 axle control standard</td><td colspan="2">Only for CANOPEN version motors object dictionary operations</td></tr>
<tr><td>=9
EtherCAT control</td><td>PP/PV/PT/HM/ CSP/CSV/CST</td><td>Compliance with CIA402 axle control standard</td><td colspan="2">Only for EtherCAT version motors object dictionary operations</td></tr>
</table>

Chapter IV. Parametric Functions

Parameter Notes:

- In the parameter list "Applicable modes" P for position mode, S for speed mode, T for torque mode.
- Some parameters need to disable the motor to change, or need to be restarted after changing, please pay attention to the "modification mode" and "effective mode" in the parameter table.
- For communication access or control parameters, please note the "Data type" and "Parameter setting range" in the parameter table.

4.1-Drive Motor Parameters (H00~H01)

H00_00	Functional Description	Motor code		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	——
	parameter range	0	2147483647	mode of entry into force	——	applying the model	P/S/T	data type	UInt32
Manufacturer's parameter, the manufacturer's number is different for different motors, it needs the manufacturer's authority to modify, the user should not modify it.									

H00_02	Functional Description	Holding brake selection		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	——
	parameter range	0	2147483647	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt32
Manufacturer's parameter, the manufacturer's number is different for different motors, it needs the manufacturer's authority to modify, the user should not modify it.									

H00_08	Functional Description	Motor encoder zero state		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	——
	parameter range	0	1	mode of entry into force	——	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, motor encoder assembly zeroing use, display parameters can not be changed.									

H00_09	Functional Description	motor rated voltage		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	V
	parameter range	0	380	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, the rated voltage of different motors is different, need the manufacturer's authority to modify, the user should not modify.									

H00_11	Functional Description	motor rated current		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	10mA
	parameter range	0	60000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, the rated current of different motors is different, need the manufacturer's authority to modify, the user should not modify.									

H00_12	Functional Description	motor rated torque		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.001Nm
	parameter range	0	300000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt32
Manufacturer's parameters, the rated voltage of different motors is different, need the manufacturer's authority to modify, the user should not modify.									

H00_14	Functional Description	motor rated speed		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	rpm
	parameter range	0	18000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, the rated speed of different motors is different, need the manufacturer's permission to modify, the user should not modify.									

H00_15	Functional Description	Maximum motor speed		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	rpm
	parameter range	0	18000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, the maximum speed of different motors is different, need the manufacturer's authority to modify, the user should not modify; this parameter as the maximum speed of the motor limit, and the highest priority.									

H00_16	Functional Description	Motor moment of inertia Jm		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.001kgcm^2
	parameter range	0	214783647	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt32
Manufacturer's parameters, the inertia of the motor is different for different motors, it needs the manufacturer's authority to modify, the user should not modify.									

H00_17	Functional Description	number of motor pole pairs		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	To the pole
	parameter range	2	360	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, different pole pairs of different motors, need the manufacturer's permission to modify, the user should not modify.									
H00_18	Functional Description	Stator resistance		Modification method	Enable Disconnect	factory value	manufacturer's registration	Unit	mΩ
	parameter range	1	65535	mode of entry into force	Power failure and	applying the model	P/S/T	data type	UInt16

					reboot				
Manufacturer's parameters, the stator resistance of different motors is different, need the manufacturer's authority to modify, the user should not modify.									

H00_19	Functional Description	Stator inductance Lq		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.01mH
	parameter range	1	65535	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, the stator inductance Lq is different for different motors, it needs manufacturer's authority to modify, user should not modify it.									

H00_20	Functional Description	Stator inductance Ld		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.01mH
	parameter range	1	65535	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, stator inductance Ld is different for different motors, it needs manufacturer's authority to modify, user should not modify.									

H00_21	Functional Description	line counter potential coefficient		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.01V/1Krpm
	parameter range	1	65535	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, different motors have different coefficients of line reverse potential, need manufacturer's authority to modify, users should not modify.									

H00_22	Functional Description	ia current self-calibration bias		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	mv
	parameter range	-3300	3300	mode of entry into force	——	applying the model	P/S/T	data type	Int16
Manufacturer's parameters, display only; for displaying current sampling hardware deviation compensation									

H00_23	Functional Description	ib current self-calibration bias		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	mv
	parameter range	-3300	3300	mode of entry into force	——	applying the model	P/S/T	data type	Int16
Manufacturer's parameters, display only; for displaying current sampling hardware deviation compensation									

H00_28	Functional Description	motor encoder offset		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	P/r
	parameter	-131072	131072	mode of	Power	applying	P/S/T	data type	Int32

	range			entry into force	failure and reboot	the model			
Manufacturer's parameters for zeroing the motor encoder, cannot be changed by the user.									

H00_30	Functional Description	encoder type selection		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	——
	parameter range	0	10	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16
Manufacturer's parameters, display only; for displaying the type of encoder to which the motor is adapted									

H00_31	Functional Description	encoder resolution		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	P/r
	parameter range	0	1073741824	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt32
Manufacturer's parameters, display only; for displaying the resolution of the encoder to which the motor is adapted									

H00_35	Functional Description	Damping resistors		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	mΩ
	parameter range	0	65535	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16
Manufacturer's parameters, display only.									

H00_43	Functional Description	Maximum motor current		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	10mA
	parameter range	0	120000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt32
Manufacturer's parameters, different motors can accept different maximum current, set an illegal value will lead to motor heating or damage, need the manufacturer's permission to modify, the user should not modify. Limit current output = limit torque output; this parameter and H07_09/H07_10 and the manufacturer's parameter H01_03, as the actual motor maximum current output limitation, take the low effective.									

H00_44	Functional Description	MT6835 Encoder Calibration Control		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	——
	parameter range	0	1	mode of entry into force	Provisional entry into force	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters For manufacturer's MT6835 encoder accuracy calibration control									

H01_00	Functional Description	MCU software version number		Modify the way in which	Show only	factory value	——	Unit	mΩ
	parameter range	0	65535	mode of entry into force	——	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, software version number; display parameters cannot be changed.									

H01_01	Functional Description	current sampling filter time		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	us
	parameter range	0	500	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, need manufacturer's permission to modify, users should not modify.									

H01_02	Functional Description	drive letter		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	——
	parameter range	0	2147483647	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt32
Manufacturer's parameters, the number of different drives is different, you need the manufacturer's permission to modify, the user should not modify.									

H01_03	Functional Description	Maximum drive current		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	10mA
	parameter range	10	120000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt32
Manufacturer's parameters, different drives can output different maximum current, set an illegal value will lead to motor heating or damage, need the manufacturer's permission to modify, the user should not modify. Limit current output = limit torque output; this parameter is valid with H07_09/H07_10 and the manufacturer's parameter H00_43, as the maximum current output limit of the actual motor, taking the lower valid.									

H01_04	Functional Description	current sampling lag time		Modify the way in which	Running setup	factory value	manufacturer's registration	Unit	0.01ms
	parameter range	1	10000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, the current sampling lag time of different drivers is different, it needs manufacturer's authority to modify, users should not modify it.									

H01_05	Functional Description	driver current sampling resistor		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	mΩ
	parameter range	1	1000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, the current sampling resistance of different drivers is different, need the manufacturer's permission to modify, the user should not modify.									

H01_06	Functional Description	driver current amplifier input resistance		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	Ω
	parameter range	500	65535	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, the input resistance of current amplifier is different for different drivers, it needs manufacturer's authority to modify, users should not modify it									

H01_07	Functional Description	driver current amplifier feedback resistor		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	Ω
	parameter range	500	65535	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameter, the feedback resistance of current amplifier is different for different drivers, it needs manufacturer's authority to modify, users should not modify it.									

H01_08	Functional Description	drive temperature alarm threshold		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	℃
	parameter range	40	100	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, as the drive overheating protection threshold, need the manufacturer's permission to modify, the user should not modify. Exceeding the set value will occur motor overheating fault alarm ER.650.									

H01_09	Functional Description	drive bus voltage attenuation factor		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	——
	parameter range	0	65535	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, need manufacturer's permission to modify, the user should not modify.									

4.2 Basic Control Parameters (H02)

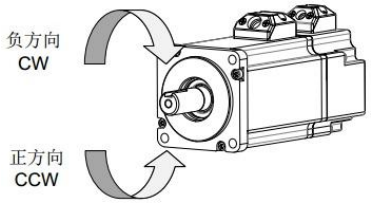
H02_00	Functional Description	control mode selection		Modify the way in which	Enable Disconnect	factory value	1	Unit	——
	parameter range	0	6	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

Set 0: speed mode (refer to section 4.5/Speed Control Parameters); Set 1: position mode (refer to section 4.4/Position Control Parameters);
Set 2: Torque mode (refer to subsection 4.6/Torque control parameters); Set 8: CANOPEN mode (only for CanOpen version motors)

H02_02	Functional Description	rotation direction selection		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16

Set 0:CCW to be positive direction CW to be negative direction.

Set 1:CW is positive CCW is negative.



H02_05	Functional Description	Enable OFF stop mode selection		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

Setting 0: free stop, after stopping the machine remains free.
Set 1: Zero-speed shutdown, free state after shutdown.
Set 2: Zero-speed shutdown, keep DB state after shutdown (damping state after enabling OFF, recommended for vertical load).

H02_06	Functional Description	Failure No2. Level stopping method		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

Setting 0: free stop, after stopping the machine remains free.
Set 1: Zero-speed shutdown, free state after shutdown.
Set 2: Zero-speed shutdown, keep DB state after shutdown (damping state after enabling OFF, recommended for vertical load).

H02_09	Functional Description	Delay from brake output ON to command reception		Modify the way in which	Enable Disconnect	factory value	250	Unit	ms
	parameter range	0	500	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

Setting the delay time between when the servo driver receives an input command and when the holding brake output is turned ON after the servo driver is powered up.

H02_10	Functional Description	Standstill holding brake output OFF to motor not energized delay time		Modify the way in which	Enable Disconnect	factory value	150	Unit	ms
	parameter range	1	1000	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

Setting the delay time between the motor entering the non-energized state and the output OFF of the holding brake when the motor is at a standstill.

H02_11	Functional Description	Rotational speed threshold at rotational state brake output OFF		Modify the way in which	Enable Disconnect	factory value	30	Unit	rpm
	parameter range	0	3000	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Sets the motor speed threshold when BK is set to OFF while the motor is rotating.									

H02_19	Functional Description	Brake starting voltage value		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.1V
	parameter range	150	10000	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16
When the real-time input bus voltage is higher than this value, the brake is turned on									

H02_20	Functional Description	Braking stop voltage value		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.1V
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
After the brake is turned on and the real-time input bus voltage falls below this value, the brake is turned off									

H02_21	Functional Description	the minimum value of energy consumption resistance allowed for the drive		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	Ω
	parameter range	0	65535	mode of entry into force	——	applying the model	ALL	data type	UInt16
View the minimum value of energy consumption resistance allowed for a particular drive model, which cannot be changed and is only relevant to the drive model									

H02_22	Functional Description	Built-in braking resistor power		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	W
	parameter range	0	65535	mode of entry into force	——	applying the model	ALL	data type	UInt16
View the power of the braking resistor built into a particular drive model, which cannot be changed and is only relevant to the drive model.									

H02_23	Functional Description	Built-in braking resistor resistance value		Modify the way in which	Show only	factory value	manufacturer's registration	Unit	Ω
	parameter range	0	65535	mode of entry into force	——	applying the model	ALL	data type	UInt16
View the built-in braking resistor resistance value of a certain drive model, which cannot be changed and is only related to the drive model									

H02_24	Functional	resistive heat		Modify	Enable	factory	manufact	Unit	W

	Description	dissipation factor		the way in which	Disconne ct	value	urer's registrati on		
	parameter range	5	100	mode of entry into force	with immediat e effect	applying the model	ALL	data type	UInt16
Setting the heat dissipation coefficient of the resistor is effective for both internal and external braking resistors									

H02_25	Functional Description	braking resistor setting		Modify the way in which	Enable Disconne ct	factory value	manufact urer's registrati on	Unit	W
	parameter range	0	3	mode of entry into force	with immediat e effect	applying the model	ALL	data type	UInt16
Set 0: use internal braking resistor; Set 1: use external braking resistor; Set 2: use internal + external braking resistor in parallel; Set 3: no braking resistor									

H02_26	Functional Description	External built-in braking resistor power		Modify the way in which	Enable Disconne ct	factory value	1	Unit	W
	parameter range	1	65535	mode of entry into force	with immediat e effect	applying the model	ALL	data type	UInt16
Sets the power of the external braking resistor for a particular drive model									

H02_27	Functional Description	External built-in braking resistor resistance value		Modify the way in which	Enable Disconne ct	factory value	50	Unit	Ω
	parameter range	1	1000	mode of entry into force	with immediat e effect	applying the model	ALL	data type	UInt16
Sets the resistance value of the external braking resistor for a certain drive model									

H02_30	Functional Description	Password privileges		Modify the way in which	Enable Disconne ct	factory value	0	Unit	-
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	ALL	data type	UInt16
Set the operation only when the manufacturer modifies special parameters.									

H02_31	Functional Description	initialization of system parameters		Modify the way in which	Enable Disconne ct	factory value	0	Unit	-
	parameter range	0	5	mode of entry into force	with immediat e effect	applying the model	ALL	data type	UInt16
Set 0: No effect; Set 1: Restore user related factory parameters; Set 2: Clear H0B_33 fault record; Set 3: Restore motor and drive factory registered parameters (requires manufacturer's authority); Set 5: Restore all system parameters. After this operation, you need to re-match the parameters of the motor and driver, you need to enter the password again to reset option 3 (requires manufacturer's authorization). Note: Normal use of option 1 to restore the parameters set by the user can be; system parameters to initialize the function of option 3/5, non-manufacturers of technical personnel do not use;									

4.3 DI/DO Parameters (H03~H04)

Input terminal DI function option table[Note 1]		
InFun set value	**Symbol**	**Corresponding functions**

0	NO	No effect
1	SON	Servo motor enable
2	ALM_RST	Fault alarm reset
6	CMD1	Multi-segment operation command switching1
7	CMD2	Multi-segment operation command switching 2
14	P_OT	Positive over travel switch
15	N_OT	Reverse over travel switch
18	JOG_CMD+	Velocity Positive Pointing JOG
19	JOG_CMD-	Velocity Reverse Tap JOG
21	FWD-EN	speed positive operation
22	REV-EN	Running in reverse speed
26	SPD DirSel	Speed mode direction switching
28	PosInSen	Multi-segment position run command enable
31	Home_Switch	External home switch
32	Homing_Start	The origin reversion enables
34	Emergency Stop	Emergency shutdown
35	ClrPos Err	Clear the position deviation counter
37	Pulse Inhibit	Pulse command prohibited
38	Touchprobe1	Probe 1
39	Touchprobe2	Probe 2
41	Home_Record	Setting the current position as the origin (zero position)
Note 1: InFun option (a DI function option can only be associated with a DI terminal, can not be duplicated allocation, otherwise the DI duplicate allocation of fault alarms will occur ER.130)		

H03_02	Functional Description	DI1 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	41	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Factory default association: InFun1 servo enable; if you need to change the association function, refer to "Input Terminal DI Function Option Table".									

H03_03	Functional Description	DI1 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_04	Functional Description	DI2 terminal function selection		Modify the way in which	Running setup	factory value	2	Unit	——
	parameter range	0	41	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Factory default association: InFun2 alarm reset; if you need to change the association function, refer to "Input Terminal DI Function Options Table".									

H03_05	Functional Description	DI2 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter	0	1	mode of	with	applying	P/S/T	data type	UInt16

	range			entry into force	immediate effect	the model			
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_06	Functional Description	DI3 terminal function selection		Modify the way in which	Running setup	factory value	34	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: InFun34 Emergency stop; if you need to change the association function, refer to "Input Terminal DI Function Options Table".									
H03_07	Functional Description	DI3 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_08	Functional Description	DI4 terminal function selection		Modify the way in which	Running setup	factory value	18	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: InFun18 speed forward motion; if you need to change the association function, please refer to "Input Terminal DI Function Options Table".									

H03_09	Functional Description	DI4 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_10	Functional Description	DI5 terminal function selection		Modify the way in which	Running setup	factory value	19	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: InFun19 Negative Velocity Tap; if you need to change the association function, please refer to "Input Terminal DI Function Options Table".									

H03_11	Functional Description	DI5 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_16	Functional Description	DI6 terminal function selection		Modify the way	Running setup	factory value	0	Unit	——

				in which					
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Factory default association: InFun0 No function; if you need to change the association function, refer to "Input Terminal DI Function Options Table". Configure H05-15 parameter setting 4 to set the pulse port as the input source of normal DI6.									

H03_17	Functional Description	DI6 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_18	Functional Description	DI7 terminal function selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Factory default association: InFun0 No function; if you need to change the association function, refer to "Input Terminal DI Function Options Table". Configure H05-15 parameter setting 4 to set the direction port as the input source of normal DI7.									

H03_19	Functional Description	DI7 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H03_50	Functional Description	AI1 bias or duty cycle bias		Modify the way in which	Running setup	factory value	0	Unit	mv/pwm%
	parameter range	-5000	5000	mode of entry into force	with immediate effect	applying the model	S/T	data type	Int16
The amount of zero bias compensation for analog input when the command is derived from AI. This parameter can be used to bias the input voltage when the external analog voltage input device cannot be adjusted to absolute 0V. The amount of compensation for PWM duty cycle bias when the command is derived from PWM. Note: This function is not included in the AI MOTOR low-voltage servo series.									

H03_51	Functional Description	AI1/PWM input filter time constant		Modify the way in which	Running setup	factory value	2000	Unit	0.01ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	S/T	data type	UInt16
Low-pass filter for analog input and PWM input signals; the larger the filter time setting value, the stronger the anti-interference and the slower the response speed.									

H03_53	Functional Description	AI1 dead zone		Modify the way in which	Running setup	factory value	100	Unit	0.1mV
	parameter range	0	10000	mode of entry into force	with immediate effect	applying the model	S/T	data type	UInt16
Analog input voltage is located in the range of no control area when the analog command is invalid; applied in the analog input voltage can not be stabilized to 0V, the motor slightly fluctuating, you can adjust the dead zone range, so that the motor is stationary. For example, if the input voltage is 0.1V and the deadband is set to 200, then the analog voltage within the range of +-0.2V will be regarded as 0V input by the system.									

H03_54	Functional Description	AI1 zero drift		Modify the way in which	Running setup	factory value	0	Unit	0.1mV
	parameter range	-5000	5000	mode of entry into force	with immediate effect	applying the model	S/T	data type	Int16
The amount of zero bias compensation for analog inputs									

H03_60	Functional Description	DI1 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	Int16
Setting the filtering time of DI1 terminal, the valid level lasts for H03.60 time before the DI function is considered valid.									

H03_61	Functional Description	DI2 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	Int16
Setting the filtering time of DI2 terminal, the valid level lasts for H03.61 time before the DI function is considered valid.									

H03_62	Functional Description	DI3 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	Int16
Setting the filtering time of DI3 terminal, the valid level lasts for H03.62 time before the DI function is considered valid.									

H03_63	Functional Description	DI4 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into	Power failure	applying the	P/S/T	data type	Int16

				force	and reboot	model			
Set the filtering time of DI4 terminal, the valid level lasts for H03.63 time before the DI function is considered valid.									

H03_64	Functional Description	DI5 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	Int16
Setting the filtering time of DI5 terminal, the valid level lasts for H03.64 time before the DI function is considered valid.									

H03_80	Functional Description	Analog 10V/PWM % corresponds to RPM value		Modify the way in which	Running setup	factory value	3000	Unit	rpm
	parameter range	0	6000	mode of entry into force	with immediate effect	applying the model	S/T	data type	Int16
When the instruction comes from analog, set the ratio between the analog input voltage of 10V and the motor rotation speed; setting 3000 means that the motor rotation speed is 3000rpm when the voltage is 10V. When the instruction comes from PWM, set PWM duty cycle to 100% and the proportionality of motor speed; set 3000, which means that the motor speed is 3000rpm when the duty cycle is 100%.									

H03_81	Functional Description	Analog 10V corresponds to the torque value		Modify the way in which	Running setup	factory value	100	Unit	0.01 times
	parameter range	100	800	mode of entry into force	with immediate effect	applying the model	S/T	data type	UInt16
Set the proportionality between the analog input voltage and the motor torque; set 100 to indicate that the motor torque at 10V is 100% of the rated torque.									

Output terminal DO function option table		
OutFun set value	**Symbol**	**Corresponding functions**
0	No	No effect
1	S_RDY	Servo ready
5	COIN	Positioning the completed output
9	BRK	Holding brake output control
11	ALM	Fault Alarm Output
16	Home_Attaion	Home return to zero completes the output
17	Elec Home Attain	The electrical return to zero completes the output that
18	ToqReach	torque reaches the output
19	V-Arr	speed to reach the output
24	Bldc Pulsout	Pulse output

H04_00	Functional Description	DO1 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	24	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: OnFun1 Servo ready; if you need to change the association function, refer to "Output Terminal DO Function Option Table".									

H04_01	Functional Description	DO1 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H04_02	Functional Description	DO2 terminal function selection		Modify the way in which	Running setup	factory value	11	Unit	——
	parameter range	0	24	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: OnFun11 fault alarm output; if you need to change the association function, please refer to "Output Terminal DO Function Option Table".									

H04_03	Functional Description	DO2 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H04_04	Functional Description	DO3 terminal function selection		Modify the way in which	Running setup	factory value	5	Unit	——
	parameter range	0	24	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: OnFun5 Positioning Completion Output; if you need to change the association function, refer to "Output Terminal DO Function Options Table".									

H04_05	Functional Description	DO3 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H04_06	Functional Description	DO4 terminal function selection		Modify the way in which	Running setup	factory value	18	Unit	——
	parameter range	0	24	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Factory default association: OnFun18 torque arrival output; if you need to change the association function, please refer to "Output Terminal DO Function Option Table".									

H04_07	Functional Description	DO4 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H04_08	Functional Description	DO5 terminal function selection		Modify the way in which	Running setup	factory value	19	Unit	——
	parameter range	0	24	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Factory default association: OnFun19 Speed Arrival Output; if you need to change the association function, please refer to "Output Terminal DO Function Options Table".									

H04_09	Functional Description	DO5 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

4.4 Position Control Parameters (H05)

H05_00	Functional Description	source of positional instructions		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
When H02_00=1 (position control mode). Set 0: Pulse command (external controller outputs a high-speed pulse string, which is input to the motor driver to control the motor positioning and rotation, and the input pulse pattern is set by H05-15). Setting 2: Multi-segment position instruction (set by internal multi-segment position parameter, control motor rotation, specifically refer to H11 group internal multi-segment position parameter)									

H05_04	Functional Description	Position command low-pass filtering time constant		Modify the way in which	Enable Disconnect	factory value	manufacturer's registration	Unit	0.1ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Sets the first-order low-pass filtering time constant for position commands. Setting this parameter will result in an increase in the latency of the positioning response but will have no effect on the amount of displacement (total number of position commands). When the external controller does not have a pulse acceleration and deceleration function, and the motor impact is relatively large, you can increase the value of this parameter to indirectly achieve the effect of passive hysteresis.									

H05_07	Functional Description	Electronic tooth number ratio 1 (molecule)		Modify the way in which	Enable Disconnect	factory value	131072	Unit	——
	parameter range	0	1073741824	mode of entry into force	with immediate effect	applying the model	P	data type	UInt32
Setting the position command electronic gear ratio numerator, AIMotor motor encoder resolution 131072. When the numerator of the electronic gear ratio is fixed to the resolution of the motor, the value of the parameter of the electronic gear ratio numerator (H05-09) is the number of pulse commands required to rotate the motor by 1 revolution. When the numerator of the electronic gear ratio is not fixed to the motor resolution, the motor gear ratio is calculated as follows: Example 1: It is known that the motor through the coupling drive screw, for linear motion, screw pitch of 10mm, the requirements of 1 pulse unit corresponds to 0.01mm. Calculation: $\frac{B}{A} = \frac{131072}{1} \times \frac{0.01}{10}$ $\frac{B}{A} = \frac{131072}{1000}$ Electronic gears numerator = 131072 denominator = Example 2: It is known that the motor drives the pulley through the coupling to carry out linear motion, the circumference of the pulley is 60mm, and 5 pulse units are required to correspond to 0.02mm. Calculations: $\frac{B}{A} = \frac{131072}{5} \times \frac{0.02}{60}$ $\frac{B}{A} = \frac{131072}{15000}$ Electronic gears numerator = 131072 denominator = 15000								

H05_09	Functional Description	Electronic tooth ratio 1 (denominator)		Modify the way in which	Enable Disconnect	factory value	1000	Unit	——
	parameter range	0	1073741824	mode of entry into force	with immediate effect	applying the model	P	data type	UInt32
Setting the position command electronic gear score, factory default 1000, that is to say, the motor rotates 1 circle need 1000 pulse command input. When the numerator of the electronic gear ratio (H05-07) is fixed to the resolution of the motor, the value of the parameter of the electronic gear ratio numerator is the number of pulse commands required to rotate the motor by 1 revolution; the value of the parameter of the electronic gear ratio numerator is the number of pulse commands required to rotate the motor by 1 revolution.									

H05_15	Functional Description	the pulse command form		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	3	mode of entry into force	Power failure and reboot	applying the model	P	data type	UInt16
Set 0: pulse + direction Positive logic (high-speed pulse string control motor rotation, direction signal OFF for CW direction, direction signal ON for CCW direction). Set 1: Pulse + Direction Negative logic (high speed pulse string control motor rotation, direction signal OFF for CCW direction, direction signal ON for CW direction). Set 2: A/B phase quadrature pulse 4 times frequency (A phase ahead of B phase 90 ° motor forward, B phase ahead of A phase 90 ° motor reverse). Setting 3: CW/CCW double pulse (CCW pulse receives CW pulse to disconnect motor forward rotation, CW pulse receives CCW pulse to disconnect motor reverse rotation). Set 4: Pulse direction control is invalid. Use the pulse port as DI6 input port and the direction port as DI7 input port. (Supported by Servo V562 and above)									

H05_17	Functional Description	Number of encoder divided pulses		Modify the way in which	Running setup	factory value	1	Unit	pulse
	parameter range	1	50	mode of entry into force	with immediate effect	applying the model	P/S	data type	UInt16
Sets the number of pulses output from the DO terminal for one revolution of the motor.									

H05_21	Functional Description	locating the completion threshold		Modify the way in which	Running setup	factory value	92	Unit	encoder units
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Set positioning completion threshold, motor position deviation value < positioning completion threshold, OutFun5(COIN) positioning completion signal COIN is valid. The positioning completion signal COIN is only valid in the position mode and in the motor enable state.									
H05_30	Functional Description	Home return enable control		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	8	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

Setting the home reset mode and the source of the trigger signal.

Setting values	Trigger signal	The origin resumption model	Remarks
0	Close the origin reversion	-	-
1	Enable home return via DI(Homeing_Start)	Origin search	The signal is valid when the motor is enabled
2	Enable electrical return to zero via DI(Homeing_Start)	Electrical return to zero	The signal is valid when the motor is enabled
3	Automatic home return after power-on enable	Origin search	Re-energize, the first enable signal is valid
4	Communication control (H05_30 write 4) enables home return	Origin search	The command is valid when the motor is enabled
5	Communication control (H05_30 write 5) enable electrical return to zero	Electrical return to zero	The command is valid when the motor is enabled
6	Communication control (H05_30 write 6) triggers the current position as the home position	After successful triggering, set the current position H0B-07 to 0.	
8	Trigger current position as origin via DI(HomeRecord)	After successful triggering, set the current position H0B-07 to 0.	

Note 1: For communication control (H05_30 write 4/H05_30 write 5/H05_30 write 6), H05_30 is automatically set to 0 after the

command is executed; communication control commands should not be sent cyclically.

H05_31	Functional Description	The origin resumption model		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	16	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

Sets the initial direction of the motor, the deceleration point, and the home position during home search.

Setpoint	Search directions	Deceleration point	Origin	process steps
0	Positive	Home switch	Home switch	The motor firstly searches for the home switch at high speed in the set direction, encounters the rising edge of the home switch signal and starts to run at low speed to disengage from it, disengages from it to the falling edge of the home switch signal, the motor changes direction and continues to search for the rising edge of the home switch signal at low speed, encounters the rising edge of the home switch signal and stops immediately, and the return to zero is successful.
1	Reverse	Home switch	Home switch	
2	Positive	Motor Z signal	Motor Z signal	The motor firstly searches the Z-phase at high speed in the set direction, starts commutation running at low speed when it encounters the rising edge of the Z-phase signal, and stops immediately when it encounters the rising edge signal of the other side of the Z-phase, and returns to zero successfully.
3	Reverse	Motor Z signal	Motor Z signal	
4	Positive	Home switch	Motor Z signal	The motor firstly searches for the home switch at high speed in the set direction, meets the rising edge of the home switch signal and starts to run at low speed to disengage from it, disengages from it to the falling edge of the home switch signal and again switches to low speed to search for the rising edge of the home switch signal, and meets the rising edge of the home switch signal and then stops immediately when it meets the Z signal and returns to the zero successfully.
5	Reverse	Home switch	Motor Z signal	
6	Positive	Forward overtravel	Forward overtravel	The motor firstly searches for the home switch at high speed in the set direction, and starts to change direction at low speed to disengage from the rising edge of the forward overtravel switch signal, and disengages from it to the falling edge of the forward overtravel switch signal, and then changes direction at low speed to search for the rising edge of the forward overtravel switch signal, and stops immediately when it encounters the rising edge of the forward overtravel switch signal, and returns to the zero successfully.
7	Reverse	Reverse overtravel	Reverse overtravel	
8	Positive	Forward overtravel	Motor Z signal	The motor firstly searches the forward overtravel switch at high speed in the set direction, encounters the rising edge of the forward overtravel switch signal and starts to decelerate and commutate to run detached, and detaches to the falling edge of the signal of the forward overtravel switch and continues to run to the Z signal of the motor and stops immediately, and returns to zero successfully.
9	Reverse	Reverse overtravel	Motor Z signal	
10	Positive	Mechanical Limit Bits	Mechanical Limit Bits	The motor firstly searches the mechanical limit position with the set direction and torque (the torque set by H05_56) at low speed, and encounters the mechanical limit position against the blocking rotation and the torque reaches the upper limit of the torque limit of touch-stop return to zero, and maintains the default time the motor stops immediately, and the return to zero is successful.
11	Reverse	Mechanical Limit Bits	Mechanical Limit Bits	
12	Positive	Mechanical Limit Bits	Motor Z signal	The motor firstly searches the mechanical limit position with the set direction and torque (the torque set by H05_56) at low speed, and encounters the mechanical limit position against the blocking rotation and the torque reaches the upper limit of the torque limit of touch-stop return to zero, and maintains the default time the motor runs in the reverse direction and stops immediately at the Z signal of the motor, and the return to zero is successful.
13	Reverse	Mechanical Limit Bits	Motor Z signal	
14	Positive	Single-turn zero return		The motor returns at high speed in the set direction to the zero position

15	Reverse	operation.	within a single revolution of the motor predetermined by the user, ignoring the number of revolutions data. The current position is cleared to zero after arrival.
16	Nearby		The motor returns at high speed in the direction of proximity to a user pre-determined zero position within a single revolution of the motor

Note 1: Please correlate the DI function options corresponding to the deceleration point, home switch and forward/reverse overtravel switch used in the selected mode, otherwise alarm ER.601 return to zero failure will occur.
Note 2: If the selected mode has a home switch for the deceleration point and is associated with a positive or negative overtravel switch DI, the motor will automatically change direction and continue searching when it encounters the overtravel switch in the search path; the motor will automatically change direction and continue searching when it encounters the overtravel switch in the search path.
Note 3: The high-speed search speed in the process step is set by parameter H05_32, and the low-speed search speed is set by parameter H05_33.
Note 4: If the origin is not found within the time of parameter H05_35, the alarm ER.601 Return to zero timeout will occur.
Note 5: After successful home return, DO function (OutFun16-HomeAttain) home return to zero completion output is valid, after enabling OFF home return to zero completion output is invalid.
Note 6: The function of return to home position is effective in position mode; when running in position mode, you need to release the multi-segment enable signal first.

H05_32	Functional Description	High-speed search for home switch signal speed		Modify the way in which	Running setup	factory value	100	Unit	rpm
	parameter range	0	3000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
1:Setting the high speed search speed setting for the home return process; 2:Starting the speed setting for the electrical return to zero.									

H05_33	Functional Description	low search home switch signal speed		Modify the way in which	Running setup	factory value	100	Unit	rpm
	parameter range	0	100	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Set the low speed search speed setting for the home return process; the lower the setting value, the higher the accuracy of searching the home point. If the selected home return mode deceleration point machine is the limit position of the instrument (blocking to zero), the motor will always run at a low speed until the home return is successful; the motor will run at a low speed until the home return is successful.									

H05_34	Functional Description	Acceleration and deceleration times while searching for the origin		Modify the way in which	Enable Disconnect	factory value	200	Unit	ms
	parameter range	0	200	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Set the time of motor speed change from 0 to 1000rpm when the home return mode is set, and the value of this parameter can be increased appropriately when the motor shock of the home return is large.									

H05_35	Functional Description	origin search timeout time		Modify the way in which	Enable Disconnect	factory value	60000	Unit	ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Set the maximum allowable time for home return, if the home point is not found within the time range of this parameter, the alarm ER.601 Return to home timeout.									

H05_36	Functional Description	Mechanical origin offset	Modify the way in which	Enable Disconnect	factory value	0	Unit	Instruction unit

	parameter range	-1073741824	1073741824	mode of entry into force	with immediate effect	applying the model	P	data type	Int32
Set the offset position after home return, and continue to execute the offset position action after successful home return. If H05_36 home position offset = 0, the electrical zero position is the same as the home position, the current absolute motor position H0B_07 will be automatically cleared to 0 after the home position is restored to zero successfully, and the electrical zero position is back to the home position. If H05_36 home position offset ≠ 0, the electrical zero position is equal to the home position offset. After the successful zero return to the home position, the motor will continue to go to the offset position and then stop, the current absolute position of the motor H0B_07 is the home offset position, and the zero position of the electric motor is the return to the home offset position; and the zero position of the electric motor is the return to the home position. If the home return mode H05_31=14/15/16, the motor returns to the position within a single revolution during the electrical return to zero, and the mechanical home offset is invalid. If the home return mode H05-31=6/7/10/11,H05-36 sets the mechanical home offset (positive value=positive direction; negative value=negative direction), when the offset value is in the same direction as the home return direction, the alarm ER.668 will be raised, and the motor will not execute the action.									

H05_40	Functional Description	The amount of mechanical home position offset and the way to deal with the encounter limit		Modify the way in which	Enable Disconnect	factory value	3	Unit	-
	parameter range	0	3	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Setting 0: H05_36 is to return to the original position value, after encountering the limit, you need to restart the original point of return; Setting 1: H05_36 is to return to the original offset position value, after encountering the limit, you need to restart the original point of return; Setting 2: H05_36 is to return to the original position value, after encountering the limit, it automatically reverses to zero; Setting 3: H05_36 is to return to the original offset position value, after encountering the limit, it automatically reverses to zero; Setting 3: H05_36 is to return to the original position value, after encountering the limit, it automatically reverses to zero; Setting 3: H05_36 is to return to the original offset position value, after encountering the limit, it automatically reverses to zero.									

H05_58	Functional Description	Touch-stop return to zero torque limit		Modify the way in which	Running setup	factory value	1000	Unit	0.10%
	parameter range	0	3000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Setting the home return mode (H05_31=10/11/12/13) blocking the maximum torque limit of positive and negative torque in the process of stopping and returning to zero; it must be ensured that the set torque can drive the load movement.									

4.5 Speed Control Parameters (H06)

H06_00	Functional Description	Main Speed Command A Source		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16
Set 0: from H06_03 given value; Set 1: from external AI1 analog voltage given; Set 2: PWM duty cycle given									

H06_01	Functional Description	Auxiliary Speed Command B Source		Modify the way in which	Enable Disconnect	factory value	5	Unit	——
	parameter range	0	5	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16
Set 0: from H06_03 given value; Set 1: from external AI1 analog voltage given; Set 5: from internal multispeed given									

H06_02	Functional	Speed command	Modify	Enable	factory	0	Unit	——

	Description	selection		the way in which	Disconnect	value			
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16
When H02_00=0 Speed control mode; set 0: select main speed command A source operation; set 1: select auxiliary speed command B source operation.									

H06_03	Functional Description	The speed command communication setup value that		Modify the way in which	Running setup	factory value	0	Unit	rpm
	parameter range	-18000	18000	mode of entry into force	with immediate effect	applying the model	S	data type	Int16
When H06_02=0, this parameter is used to set the running speed of the motor.									

H06_04	Functional Description	JOG Tap Speed Setting Value		Modify the way in which	Running setup	factory value	100	Unit	rpm
	parameter range	0	18000	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16
When InFun18 (JOG_CMD+) and InFun19 (JOG_CMD-) are selected for the DI function of H03 group, the rotation speed of the motor pointing JOG is set by this parameter.									

H06_05	Functional Description	speed command acceleration ramp time constant		Modify the way in which	Running setup	factory value	0	Unit	ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16
Setting the motor acceleration time from 0-1000rpm in speed mode (the acceleration and deceleration time of the internal multispeed is determined by the H12 group parameter, which is not related to this parameter).									

H06_06	Functional Description	Speed command deceleration ramp time constant		Modify the way in which	Running setup	factory value	0	Unit	ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16
Setting the motor deceleration time from 1000-0rpm in the speed mode; the acceleration and deceleration time of the multispeed within the speed mode is determined by the H12 group parameter, which is not related to this parameter; the motor deceleration time in the speed mode is determined by the H12 group parameter, which is not related to this parameter.									

H06_18	Functional Description	velocity reaches the signaling threshold		Modify the way in which	Running setup	factory value	1000	Unit	rpm
	parameter range	10	18000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting the speed condition for the arrival of the rotational speed. When the actual speed of the motor after filtering >= the set value, the judgment speed to reach, OutFun19 (V-Arr) speed to reach the signal is valid; otherwise, speed to reach the signal is invalid.									

4.6 Torque Control Parameters (H07)

H07_00	Functional Description	Main Torque Command A Source		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	T	data type	Int16
Set 0: the main torque command is derived from H07_03 digital feed; Set 1: the main torque command is derived from external AI1 analog voltage feed.									

H07_01	Functional Description	Auxiliary Torque Command B Source		Modify the way in which	Enable Disconnect	factory value	1	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	T	data type	Int16
Set 0: the main torque command is derived from H07_03 digital feed; Set 1: the main torque command is derived from external AI1 analog voltage feed.									

H07_02	Functional Description	torque command selection		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	T	data type	Int16
When H02_00=2 (torque control mode); set 0: select main torque command A source operation; set 1: select auxiliary torque command B source operation.									

H07_03	Functional Description	torque command communication set value		Modify the way in which	Running setup	factory value	0	Unit	0.10%
	parameter range	-3000	3000	mode of entry into force	with immediate effect	applying the model	T	data type	Int16
When H02_00=2 (torque control mode); set the torque limitation of positive and negative direction output when the motor is running, limiting the torque output is equal to limiting the current output. 100.0% = 1x motor torque (1x motor torque = rated motor torque and rated motor current). This parameter, together with H07_09/H07_10 and the manufacturer's parameter H00_43/H01_03, serves as a limit for the maximum current output of the actual motor, whichever is lower.									

H07_05	Functional Description	Torque command filtering time constant		Modify the way in which	Running setup	factory value	79	Unit	0.01ms
	parameter range	0	3000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting the torque command low-pass filtering time makes the torque command run smoother and reduces vibration. Too large a setting will reduce the responsiveness of the motor.									

H07_09	Functional Description	positive internal torque limit		Modify the way in which	Running setup	factory value	3000	Unit	0.10%
	parameter range	0	4000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting the torque limit of positive direction output when the motor is running, valid in any mode 100.0% = 1x motor torque (1x motor torque = rated motor torque and rated motor current). Limit torque output = limit current output, this parameter and the manufacturer's parameter H00_43/H01_03 are both used as the actual maximum current output limit of the motor, take the lower effective.									

H07_10	Functional Description	negative internal torque limit		Modify the way in which	Running setup	factory value	3000	Unit	0.10%
	parameter range	0	4000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Setting the torque limit of negative direction output when the motor is running, independent of the mode; limiting the torque output is equal to limiting the current output. 100.0% = 1x motor torque (1x motor torque = rated motor torque and rated motor current). Limit torque output = limit current output, this parameter and the manufacturer's parameter H00_43/H01_03 are both used as the actual maximum current output limit of the motor, take the lower effective.									

H07_19	Functional Description	torque control forward speed limit value		Modify the way in which	Running setup	factory value	1500	Unit	rpm
	parameter range	0	18000	mode of entry into force	with immediat e effect	applying the model	T	data type	UInt16
Limit the maximum forward speed of the motor when setting the torque mode, and the speed limit must be set when torque control, to avoid unlimited speed increase of light-loaded motors, which leads to over-speed flying. The percentage of torque output and speed limit are set. When the load is less than the torque output, the motor will accelerate and rotate in the direction of the torque output, and when it accelerates to the speed limit or when the output torque is not enough to support further acceleration, the motor will stop accelerating, and the speed will fluctuate according to the load fluctuation. When the load is approximately equal to the torque output, the motor will stop. When the load is greater than the output torque, the motor will be dragged in the reverse direction of rotation to apply torque with reverse damping.									

H07_20	Functional Description	Negative speed limit value for torque control		Modify the way in which	Running setup	factory value	1500	Unit	rpm
	parameter range	0	18000	mode of entry into force	with immediat e effect	applying the model	T	data type	UInt16
Limit the maximum speed of motor reverse when setting the torque mode, the speed limit must be set when torque control, to avoid the light load motor unlimited speed leading to overspeed flyer. The process principle is the same as H07_19 Torque Control Forward Speed Limit.									
H07_21	Functional Description	torque reaches the reference value		Modify the way in which	Running setup	factory value	0	Unit	0.10%
	parameter range	0	3000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
The H0B_02/H07_21/H07_22/H07_23 parameters are used as valid conditions for the torque arrival output OutFun18 (ToReach), with the following relationship:: Actual torque (H0B_02), torque reaching reference value (H07_21), torque reaching valid value (H07_22), torque reaching invalid value (H07_23). When actual torque >= torque arrival reference value + torque arrival valid value; moment arrival output OutFun18(ToReach) is valid. When actual torque < Torque Reach Reference + Torque Reach Invalid; Torque Reach Output OutFun18(ToReach) is invalid.									

H07_22	Functional Description	The torque reaches the rms value		Modify the way in which	Running setup	factory value	200	Unit	0.10%
	parameter range	0	3000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Valid conditions for torque reaching output OutFun18(ToReach).									

H07_23	Functional Description	The torque reaches the invalid value	Modify the way in which	Running setup	factory value	100	Unit	0.10%

	parameter range	0	3000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Invalid condition for torque reaching output OutFun18(ToReach).									

4.7 Performance and Protection Parameters (H08~H09~H0A)

H08_00	Functional Description	Velocity loop gain		Modify the way in which	Running setup	factory value	200	Unit	0.1Hz
	parameter range	1	20000	mode of entry into force	with immediate effect	applying the model	P/S	data type	UInt16
Setting the speed loop gain determines the maximum frequency of the speed command to be followed by the speed loop. If no noise or vibration occurs in the motor, increase the value of this parameter appropriately to speed up the positioning time and followability; if noise or vibration occurs, decrease the value of this parameter.									

H08_01	Functional Description	velocity loop integration time constant		Modify the way in which	Running setup	factory value	1000	Unit	0.01ms
	parameter range	15	51200	mode of entry into force	with immediate effect	applying the model	P/S	data type	UInt16
Setting the speed loop integration time constant eliminates speed loop deviation. Reducing the setting value can strengthen the integrating effect and speed up the positioning time, but the setting value is too small to cause motor and mechanical vibration.									

H08_02	Functional Description	position loop gain		Modify the way in which	Running setup	factory value	100	Unit	0.1Hz
	parameter range	0	20000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Setting the position loop gain determines the maximum frequency of the speed command that the position loop follows. In the case of no noise or vibration of the motor, increasing the value of this parameter can speed up the positioning time and improve the ability of the motor to resist external disturbances when it is in a static state. Setting too large a value may cause the system to become unstable and oscillate, then the value of this parameter should be reduced.									

H08_15	Functional Description	load moment of inertia ratio		Modify the way in which	Running setup	factory value	0	Unit	0.01 times
	parameter range	0	12000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Set the mechanical load inertia ratio relative to the motor's own inertia; H08_15=0 indicates that the motor is not loaded; H08_15=1 indicates that the load inertia is equal to the motor inertia. For high inertia loads, increase the value of this parameter first and then adjust the gain.									

H08_19	Functional Description	velocity feedforward gain		Modify the way in which	Running setup	factory value	0	Unit	0.10%
	parameter range	0	1000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Increasing this parameter improves the position command response and reduces the position deviation at a fixed speed.									

H08_23	Functional Description	velocity feedback low-pass filter cutoff frequency		Modify the way in which	Running setup	factory value	4000	Unit	Hz
	100	100	4000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Sets the cutoff frequency for first-order low-pass filtering of the velocity feedback. The smaller the setting, the smaller the speed feedback fluctuation, but the feedback delay is also larger. The cutoff frequency is 4000Hz, no filtering effect.									

H09_00	Functional Description	self-adjusting mode selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Setting 0: the automatic adjustment of the parameter is invalid (standard rigidity table), the gain parameter is adjusted manually. Setting 1: Use of standardized rigidity tables with automatic gain adjustment based on the rigidity table rating.									

H09_01	Functional Description	rigidity class selection		Modify the way in which	Running setup	factory value	10	Unit	——
	parameter range	0	41	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
When H09_00=1, set the motor rigidity according to the rigidity table level, the higher the rigidity level, the stronger the gain, the faster the response, but too strong rigidity back to cause vibration.									

HA_02	Functional Description	Whether the driver hardware has an STO loop function		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
When H0A_02=0, it means that the driver hardware has no STO loop function, and STO detection and alarm are disabled. When H0A_02=1, it means that the driver hardware has STO loop function, enabling STO detection and alarm.									
H0A_03	Functional Description	Whether the user zero bias is written to the EEPEOM		Modify the way in which	Running setup	factory value	4000	Unit	Hz
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: do not save to EEPROM; set 1: save to EEPROM.									

H0A_04	Functional Description	motor overload protection gain		Modify the way in which	Enable Disconne ct	factory value	100	Unit	%
	parameter range	10	3000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
By setting the value of this parameter, it determines the time for the motor overload fault alarm ER.620 to be reported; 100% is equal to about 10S, which varies for different motors; and the time for the motor overload fault alarm ER.620 to be reported. Setting this parameter should be determined by the actual heating of the motor, too large a value of the motor will cause the motor to exceed its own torque for a long time without overloading the alarm leads to motor temperature is too high.									

H0A_09	Functional Description	STO input synchronization window time		Modify the way in which	Running setup	factory value	100	Unit	ms
	parameter range	1	65535	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16
The two STO input terminals are energized within the set time to de-energize STO.									

H0A_10	Functional Description	Position deviation too large fault threshold		Modify the way in which	Running setup	factory value	1048576	Unit	encoder units
	parameter range	1	1073741824	mode of entry into	with immediat	applying the	P	data type	UInt32

				force	e effect	model			
Setting alarm threshold for position deviation overload in position mode; default 131072*8=1048576, over 8 turns alarm for position deviation overload. When the deviation of the actual motor position from the commanded position exceeds the value of this parameter, the fault alarm ER.B00 will occur.									

H0A_19	Functional Description	DI6 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	Int16
Setting the filtering time of DI7 terminal, the valid level lasts for H03.60 time before the DI function is considered valid.									

H0A_20	Functional Description	DI7 Filter Time		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	1	50000	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	Int16
Setting the filtering time of DI7 terminal, the valid level lasts for H03.60 time before the DI function is considered valid.									

H0A_25	Functional Description	speed feedback display value filter time		Modify the way in which	Running setup	factory value	100	Unit	ms
	parameter range	0	5000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt32
Set the low-pass filtering time constant for speed information corresponding to speed feedback and position commands.									

H0A_26	Functional Description	motor overload shield enable		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Set 0: open motor overload detection alarm. Set 1: Shielded motor overload detection alarm, overloaded motor automatically run down current.									

H0A_27	Functional Description	Speed DO filter time constant		Modify the way in which	Running setup	factory value	100	Unit	ms
	parameter range	0	5000	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting the mean value filtering time constant for the speed information corresponding to the speed feedback and position commands									

H0A_36	Functional Description	absolute encoder fault shielding options		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	3	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Set 0: Multi-turn absolute encoder for normal application; Set 1: Masked turn overflow detection. Set 2: Shield battery status detection Set 3: Shield circle overflow detection + battery status detection.									

H0A_40	Functional Description	soft limit settings		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	2	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: soft limit is not enabled; set 1: soft limit is enabled; set 2: soft limit is enabled after home return to zero									

H0A_41	Functional Description	Soft limit max		Modify the way in which	Running setup	factory value	0	Unit	Instruction unit
	parameter range	-2147483648	2147483648	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	Int32
Soft Limit Upper Limit									

H0A_43	Functional Description	Soft limit min		Modify the way in which		factory value	0	Unit	——
	parameter range	-2147483648	2147483648	mode of entry into force		applying the model	P/S/T	data type	Int32
soft limit lower limit value									

H0A_44	Functional Description	single-phase bus voltage overvoltage generation value		Modify the way in which	Running setup	factory value	manufact urer's registrati on	Unit	V
	parameter range	0	1000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Drive real-time single-phase bus voltage is higher than the set value, over-voltage alarm									

H0A_46	Functional Description	carrier frequency		Modify the way in which	Enable Disconne ct	factory value	10	Unit	——
	parameter range	5	15	mode of entry into force	Power failure and reboot	applying the model	P/S/T	data type	UInt16
Manufacturer's parameters, not user modifiable									

H0A_48	Functional Description	single-phase bus voltage undervoltage generation value		Modify the way in which	Running setup	factory value	manufact urer's registrati on	Unit	V
	parameter range	15	1000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
The real-time single-phase bus voltage of the driver is lower than the set value, under-voltage alarm									

H0A_50	Functional Description	power-up initialization delay time		Modify the way in which	Running setup	factory value	1000	Unit	ms
	parameter range	500	5000	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Drive power-up initialization delay time setting									

H0A_51	Functional Description	The undervoltage continues to generate alarms for a period of time that		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	0	500	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
The drive's continuous undervoltage delay alarm setting time									

H0A_52	Functional Description	Hardware filtering of PULSE/DIR signals		Modify the way in which	Running setup	factory value	0	Unit	——
	0	15	7	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
Set 0: Maximum received pulse frequency <330KHZ. Set 1: Maximum received pulse frequency <200KHZ. Set 2: Maximum received pulse frequency <100KHZ. Set 3: Maximum received pulse frequency <050KHZ. Setting the appropriate pulse command filtering level can effectively prevent interference; the actual maximum pulse frequency should be less than the allowable value of the selected filtering level									

4.8 Monitoring Read-Only Parameters (H0B)

Note: All display parameters of H0B group can only be read by communication, and cannot be changed (written).

H0B_00	Functional Description	actual motor speed		Modify the way in which	Show only	factory value	0	Unit	rpm
	parameter range	-65535	65535	mode of entry into force	——	applying the model	ALL	data type	Int16
Displays the filtered real-time speed of the motor.									

H0B_02	Functional Description	internal real-time torque commands		Modify the way in which	Show only	factory value	0	Unit	0.10%
	parameter range	-3000	3000	mode of entry into force	——	applying the model	ALL	data type	Int16
Display real-time internal torque output, 100.0% corresponds to the rated torque of the motor.									

H0B_03	Functional Description	Input signal (DI signal) monitoring		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	99999	mode of entry into force	——	applying the model	ALL	data type	UInt32
Decimal display hardware DI port status;; For example, if DI1 and DI3 are valid and the rest of the DOs are invalid, then the binary is 00000101, and H0B_05 is displayed as 5 (decimal).									

H0B_05	Functional Description	Output signal (DO signal) monitoring		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	——	applying the model	ALL	data type	UInt16
Decimal display hardware DO port status;; For example, DO1 and DO2 are valid and the rest of the DOs are invalid, then the binary is 00000011 and H0B_05 is displayed as 3 (decimal).									

H0B_07	Functional Description	Absolute position counter (32-bit decimal display)		Modify the way in which	Show only	factory value	0	Unit	Instruction unit
	parameter range	-2147183648	2147483647	mode of entry into force	——	applying the model	ALL	data type	Int32
Display the real-time absolute position of the motor (command pulse unit); the current position will be cleared to zero after the home position is successfully restored; the current position will be cleared to zero after the home position is successfully restored.									

H0B_09	Functional Description	Incremental Encoder UVW Hall Angle Sequence		Modify the way in which	Show only	factory value	0	Unit	encoder units
	parameter range	0	360	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Incremental encoders U-phase, V-phase, W-phase Hall angle									

H0B_10	Functional Description	Electrical angle		Modify the way in which	Show only	factory value	0	Unit	0.1°
	parameter range	0	3600	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

Displays the current electrical angle of the motor with an accuracy of 0.1°.

H0B_11	Functional Description	Input the speed information corresponding to the position comm		Modify the way in which	Show only	factory value	0	Unit	rpm
	parameter range	-65535	65535	mode of entry into force	——	applying the model	P	data type	Int16
The speed information corresponding to the command pulse input frequency is displayed, independent of the enable; whether the external command pulse frequency is correct or not can be tested by this parameter with the enable OFF; the speed information corresponding to the command pulse input frequency is displayed.									

H0B_12	Functional Description	average load factor		Modify the way in which	Show only	factory value	0	Unit	0.10%
	parameter range	0	5000	mode of entry into force	——	applying the model	ALL	data type	UInt16
Displays the average motor load as a real-time percentage of the motor's rated torque, with 100.0% corresponding to the motor's rated torque; low hysteresis.									

H0B_13	Functional Description	Input command pulse counter (32-bit decimal display)		Modify the way in which	Show only	factory value	0	Unit	Instruction unit
	parameter range	-2147183648	2147483647	mode of entry into force	——	applying the model	P	data type	Int32
Display the number of command pulse inputs to be added or subtracted according to the direction, independent of the enable; this parameter can be used to test whether the number of external command pulse inputs is correct or not when the enable is OFF.									

H0B_15	Functional Description	encoder position deviation counter (32-bit decimal display)		Modify the way in which	Show only	factory value	0	Unit	encoder units
	parameter range	-1073741824	1073741824	mode of entry into force	——	applying the model	P	data type	Int32
Displays the real-time deviation of the motor's current position from the commanded position.									

H0B_21	Functional Description	AI1 Sampling voltage value or PWM duty cycle		Modify the way in which	Show only	factory value	0	Unit	0.01V
	parameter range	-3000	3000	mode of entry into force	——	applying the model	P/S/T	data type	Int16
Displays the voltage value or PWM duty cycle of external analog channel 1 (AI1) inputs									

H0B_24	Functional Description	RMS phase current		Modify the way in which	Show only	factory value	0	Unit	0.01A
	parameter range	-120000	120000	mode of entry into force	——	applying the model	P/S/T	data type	Int32
Display the real-time output phase current value of the motor.									

H0B_26	Functional Description	The value of the bus voltage		Modify the way in which	Show only	factory value	0	Unit	0.1V
	parameter range	0	9999	mode of entry into force	——	applying the model	P/S/T	data type	UInt16
Displays the drive's real-time input bus voltage; can be used to monitor the stability of the external power supply input voltage.									

H0B_27	Functional Description	module temperature values		Modify the way in which	Show only	factory value	0	Unit	℃
	parameter range	-50	120	mode of entry into force	——	applying the model	P/S/T	data type	Int16
Displays the current drive MOS real-time temperature value.									

H0B_33	Functional Description	Fault logging		Modify the way in which	Running setup	factory value	0	Unit	First n failures
	parameter range	0	9	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Used to set the last 10 faults of the motor; no fault record is not displayed; set 0:H0B_34 to display the current fault information; set 1:H0B_34 to display the last fault information.									

H0B_34	Functional Description	selected number of fault codes		Modify the way in which	Display	factory value	0	Unit	-
	parameter range	0	4095	mode of entry into force	——	applying the model	P/S/T	data type	UInt16
Display the fault information selected by H0B_33, default display the current fault, if there is no fault record is not displayed.									

H0B_70	Functional Description	Absolute encoder revolution data	Modify the way	Display	factory value	0	Unit	r

				in which					
	parameter range	-32768	32767	mode of entry into force	——	applying the model	ALL	data type	Int16
Display absolute encoder rotational data, single-turn absolute motor power on the number of turns data is automatically cleared; multi-turn absolute motor turns are memorized.									

H0B_71	Functional Description	position within 1 revolution of the absolute encoder		Modify the way in which	Display	factory value	0	Unit	encoder units
	parameter range	0	2147483647	mode of entry into force	——	applying the model	ALL	data type	UInt32
Display of absolute encoder position data within a single revolution, AIMtor motor 1 revolution interpolation 131072.									

H0B_77	Functional Description	Absolute encoder absolute position (lower 32 bits)		Modify the way in which	Display	factory value	0	Unit	encoder units
	parameter range	-2147483648	2147483647	mode of entry into force	——	applying the model	ALL	data type	Int32
Display multi-turn absolute motor based on the absolute encoder position of the lower 32 bits; single-turn absolute motor power on the number of turns of the data is automatically cleared, multi-turn absolute motor turns are memorized.									

H0B_79	Functional Description	Absolute encoder absolute position (high 32 bits)		Modify the way in which	Display	factory value	0	Unit	encoder units
	parameter range	-2147483648	2147483647	mode of entry into force	——	applying the model	ALL	data type	Int32
Display multi-turn absolute motors based on absolute encoder position 32 bits high; single-turn absolute motors power on the number of turns data is automatically cleared, multi-turn absolute motors turns are memorized.									

H0B_81	Functional Description	TS Encoder Fault Codes		Modify the way in which	Display	factory value	0	Unit	encoder units
	parameter range	-2147483648	2147483647	mode of entry into force	——	applying the model	ALL	data type	Int32
manufacturer's encoder failure information									

H0B_83	Functional Description	TS Encoder Status Code		Modify the way in which	Display	factory value	0	Unit	encoder units
	parameter range	-2147483648	2147483647	mode of entry into force	——	applying the model	ALL	data type	Int32
manufacturer's encoder status information									

H0B_85	Functional Description	TS encoder send-receive monitoring		Modify the way in which	Display	factory value	0	Unit	encoder units
	parameter range	-2147483648	2147483647	mode of entry into force	——	applying the model	ALL	data type	Int32
Manufacturer encoder data transmission and reception status monitoring									

4.9 RS485 Communication and Functional Parameters (H0C)

H0C_00	Functional Description	servo axis address		Modify the way in which	Running setup	factory value	1	Unit	-
	parameter range	1	247	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16
Setting the axis address for servo serial communication and the node ID for CAN communication. AIMotor supports broadcast mode for MODBUS communication (the host can only write to the slave via broadcast mode, and the slave executes but does not return data according to the command received from the master). When a master controls multiple slaves, it must ensure that each slave has a unique axis address or node ID, which cannot be repeated, otherwise the communication will fail.									

H0C_02	Functional Description	serial port baud rate setting		Modify the way in which	Running setup	factory value	5	Unit	-
	parameter range	0	6	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16

Set servo axis serial port communication baud rate, factory default 57600; servo axis baud rate must be consistent with the host baud rate, otherwise communication cannot be established.

Setting values	baud rate	Remarks
0	2400kbp/s	The lower the baud rate, the slower the communication speed and the less susceptible it is to external signals. It is recommended to use a high baud rate when connecting to the manufacturer's host computer debugging software for smoother operation.
1	4800kbp/s	
2	9600kbp/s	
3	19200kbp/s	
4	38400kbp/s	The higher the baud rate, the faster the communication speed and the relative vulnerability to external signal interference. It is recommended to use low baud rate to ensure communication stability in case of electromagnetic harshness or long distance communication.
5	57600kbp/s	
6	115200kbp/s	

H0C_03	Functional Description	MODBUS data format		Modify the way in which	Running setup	factory value	0	Unit	-
	parameter range	0	3	Power failure and reboot	with immediate effect	applying the model	ALL	data type	UInt16
Set the servo axis communication data verification method; keep the servo axis Modbus data format consistent with that of the host computer. Set 0: no parity, 2 end bits; Set 1: even parity, 1 end bit. Set 2: odd parity, 1 stop bit; Set 3: no parity, 1 end bit.									

H0C_08	Functional Description	CAN communication rate setting		Modify the way in which	Running setup	factory value	5	Unit	-
	parameter range	0	7	Power failure and reboot	with immediate effect	applying the model	ALL	data type	UInt16

Set servo axis CAN communication baud rate, factory default 5 (500K); servo axis CAN communication rate must be consistent with the host CAN communication rate.

Setting values	communication rate	Setting values	communication rate
0	20K	4	250K

1	50K	5	500K
2	100K	6	1M
3	125K	7	1M

H0C_09	Functional Description	CAN communication sample rate selection		Modify the way in which	Running setup	factory value	0	Unit	-
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
In order to better adapt the communication quality of CAN host to ensure the correct rate of CAN sampling, it is used to set the CAN sampling rate. (Supported by Servo V561 and above) Set 0:67%; Set 1:75%; Set 2:89%									

H0C_11	Functional Description	DO controlled in bus mode, selection of DO output state after dropping the line		Modify the way in which	Running setup	factory value	0	Unit	-
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
The 60FEh (digital output) object is controlled using the CANOPEN or ETHERCAT bus. When the bus is disconnected, the DO controlled by the bus is output according to this parameter. (Supported by Servo version V558 and above) Set 0: the controlled DO maintains the output state before dropping out; Set 1: the controlled DO is forced to output OFF; Set 0: the controlled DO maintains the output state before dropping out; Set 1: the controlled DO is forced to output OFF; Set 1: the controlled DO is forced to output OFF. Setting 2: Controlled DO forced output ON									
H0C_13	Functional Description	Whether to update to EEPROM control		Modify the way in which	Running setup	factory value	0	Unit	-
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Parameter values changed using communication are saved in the temporary storage area to take effect, after power failure the parameter will be restored to the value before the change, this parameter determines whether or not the modified parameter values will be saved permanently. Set 1: save the parameter of communication change into EEPROM, the parameter will be set to 0 automatically when save successfully.									

H0C_26	Functional Description	MODBUS communication data high and low bit sequence		Modify the way in which	Running setup	factory value	1	Unit	-
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Set 0: high 16 bits before, low 16 bits after Set 1: low 16 bits before, high 16 bits after									

H0C_30	Functional Description	MODBUS communication timeout detection		Modify the way in which	Running setup	factory value	1	Unit	ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Set ≠0 to enable modbus communication timeout and dropout detection, set =0 to disable the detection function. (Supported by Servo V558 and above) For example: set 500, when the master control does not perform correct read/write access to the machine in 500ms, the machine will generate modbus timeout alarm.									

4.10 Auxiliary Function Parameters (H0D)

H0D_00	Functional	software reset	Modify	Enable	factory	0	Unit	——

	Description			the way in which	Disconnect	value			
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Set 1: motor system software reset restart, similar to the effect of power failure restart; automatically set to 0 after successful reset.									

H0D_01	Functional Description	Fault reset		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Set 1: reset the drive fault alarm status (some fault alarms do not support fault reset need to check the cause of the power failure and restart).									

H0D_05	Functional Description	Emergency shutdown		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
Set 0; release emergency stop. Set 1: internal emergency stop, the motor stops immediately after the emergency stop to keep the position locked.									

H0D_20	Functional Description	Absolute encoder reset enable		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16
set to 0; no effect. Set 1: Reset absolute encoder internal fault message. Set 2: Reset absolute encoder internal fault message + clear multiturn data.									

Parameters H0D_30~H0D_44 are only available for EtherCAT bus servo.

H0D_30	Functional Description	EtherCAT_ESC Slave Site Proper Name		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	EtherCAT	data type	UInt16
For masters that automatically assign station numbers, the station number to which the slave is assigned when using EtherCAT communication is displayed.									

H0D_31	Functional Description	EtherCAT_ESC Slave Site Alias		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	EtherCAT	data type	UInt16

H0D_32	Functional Description	EtherCAT_ESC port 0 frame invalid 0-7bit and receive error 8-15bit count value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	EtherCAT	data type	UInt16

H0D_33	Functional Description	EtherCAT_ESC port 1 frame invalid 0-7bit and receive error 8-15bit count value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_34	Functional Description	EtherCAT_ESC port 0/1/2 forwarding error count value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	2147483647	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt32

H0D_37	Functional Description	EtherCAT_ESC processing unit error count value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_38	Functional Description	EtherCAT-PDI Interface Error Count Value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_39	Functional Description	EtherCAT_ESC port 0/1/2 link loss count value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	2147483647	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt32

H0D_40	Functional Description	EtherCAT_APP_Count of AL state changes due to errors		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_41	Functional Description	EtherCAT_APP_SYNCO Watchdog Trigger Time Setting		Modify the way in which	Running setup	factory value	20	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_42	Functional Description	EtherCAT_APP_SYNCO Watchdog Time Count Value		Modify the way in which	Show only	factory value	0	Unit	ms
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_43	Functional Description	EtherCAT_APP_SM event misses the maximum allowed value		Modify the way in which	Running setup	factory value	10	Unit	——

	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

H0D_44	Functional Description	EtherCAT_APP_SM event miss count value		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	EtherCAT	data type	UInt16

4.11 Internal Multiband Parameters (H11)

H11_00	Functional Description	Multi-stage position operation mode		Modify the way in which	Enable Disconne ct	factory value	0	Unit	——
	parameter range	0	5	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16

When H02_00=1 selects the position control mode and H05_00=2 selects that the position instruction is derived from multi-segment, set the multi-segment operation mode in the table below.

Setting values	mode of operation	Remarks
0	Single-cycle end-of-operation shutdown	Run 1 round to stop, multi-segment enable level is valid to start running; segment number from the first segment automatically incremental running to the end of the segment, segment to segment can be set between the waiting time; multi-segment enable OFF, forced stop.
1	Cyclic operation	Cyclic operation, start to run when multi-segment enable level is valid; segment number is automatically incremented from the first segment to the end segment, wait time after the end segment is executed, automatically repeat from the first segment; multi-segment enable OFF, forced stop; the segment number is automatically incremented from the first segment to the end segment.
2	DI switching operation	To set up a DI switching operation, there must be at least one DI associated with a multi-run command switch. InFun6(CMD1) InFun7(CMD2) is a multi-segment switching instruction 1 and 2. The number of segments to be operated is determined by the DI terminal combination logic (position/speed/acceleration/deceleration presetting within the segment). There is no waiting time between segments, depending on the timing of the call; each time the DI terminal logic is determined, it is necessary to enable the rising edge of the multi-segment trigger to start running. The combination logic of the DI terminal is described in Note 2 below.

Note 1: All multi-segment operation methods must have an InFun28(PosInSen) multi-segment enable associated with the DI.
Note 2: The DI switching operation combination logic is shown in the following table:

Multi-segment switching instruction 1 (CMD1)	Multi-segment switching command 2 (CMD2)	Multi-segment enable (PosInSen)	Running position segments
OFF	OFF	OFF→ON	Paragraph 1
ON	OFF	OFF→ON	Paragraph 2
OFF	ON	OFF→ON	Paragraph 3
ON	ON	OFF→ON	Paragraph 4

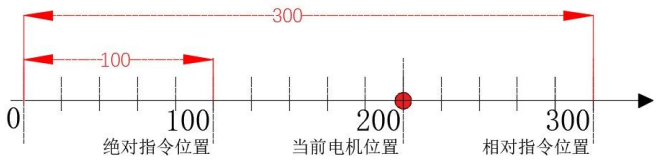
H11_01	Functional Description	the number of end segments of the bit shift instruction		Modify the way in which	Enable Disconne ct	factory value	1	Unit	——
	parameter range	1	4	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16

Setting the total number of multi-segment operation segments, different segments can be set to different displacements, speeds, acceleration and deceleration times.
When the multi-segment operation mode ≠ 2, the multi-segment segment number is automatically incrementally switched, and the switching sequence is 1, 2.H11_01 end segment.

H11_02	Functional Description	Residual treatment		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16
When the multi-segment operation mode = 0/1, if the mode is switched during multi-segment operation or the multi-segment enable signal changes from ON to OFF, the operation is suspended and the processing mode is re-run. Set 0: continue to run the number of segments remaining from the previous run, if the previous run was paused in the middle of the second segment, the re-run will discard the remainder of the second segment 2 and continue from the third segment. Set 1: Re-run from the first segment, if the previous run was suspended in the middle of the second segment, the re-run will discard the remaining segments and re-run from the first segment.									

H11_04	Functional Description	Bit Shift Instruction Type Selection		Modify the way in which	Enable Disconnect	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

Set 0: Relative displacement instruction (incremental displacement instruction based on the current position)
Setting 1: Absolute displacement command (incremental displacement command based on the coordinate zero position (home position))
As shown in the figure, the motor is currently at position 200, if the relative position instruction is executed, the displacement is 100.
Then the motor finally moves to position 200+100=300;
As shown in the figure, the motor is currently at position 200, if the absolute position instruction is executed, the displacement is 100.
Then the motor finally moves to position 0+100=100;



H11_12	Functional Description	Paragraph 1 mobile displacements		Modify the way in which	Running setup	factory value	1000	Unit	Instruction unit
	parameter range	-1000000 00	10000000	mode of entry into force	with immediat e effect	applying the model	P	data type	Int32
When H11_04=0 relative displacement instruction, set the relative displacement increment of the 1st movement of the multi-stage position; the direction of movement of the motor depends on the set positive and negative numbers. When H11_04=1 absolute displacement instruction, set the multi-stage position of the first stage to move the target position, the direction of movement of the motor depends on the current position and the target position coordinate direction. The same applies to the other paragraphs below.									

H11_14	Functional Description	Maximum operating speed for the 1st displacement		Modify the way in which	Running setup	factory value	200	Unit	rpm
	parameter range	1	6000	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16
Setting the maximum rotation speed to execute the 1st position operation; when the displacement is very small, the motor starts to decelerate during acceleration and stops reaching the position, the maximum rotation speed will not be reached in practice. The same applies to the other paragraphs below.									

H11_15	Functional Description	1st displacement plus deceleration time		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	1	65535	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16
Set the acceleration time from 0 to 1000rpm and the deceleration time from 1000 to 0rpm for the first position operation; the same applies to the other following segments. The same applies to the other paragraphs below.									

H11_16	Functional Description	Waiting time after completion of 1st displacement		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	0	10000	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16
(b) Setting the delay time for stopping the execution of the first position at the end of the run, and then executing the next position. This parameter is invalid when H11_00=2 (DI switching operation) and H11_00=3 (sequential operation); the same applies to the following other segments.									

H11_17	Functional Description	Paragraph 2 mobile displacements		Modify the way in which	Running setup	factory value	1000	Unit	Instruction unit
	parameter range	-1000000 00	10000000	mode of entry into force	with immediat e effect	applying the model	P	data type	Int32

H11_19	Functional Description	Maximum operating speed for the 2nd displacement		Modify the way in which	Running setup	factory value	200	Unit	rpm
	parameter range	1	6000	mode of entry into force	with immediat e effect	applying the model	P	data type	UInt16

H11_20	Functional Description	2nd displacement plus deceleration time	Modify the way in which	Running setup	factory value	10	Unit	ms

	parameter range	1	65535	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_21	Functional Description	Waiting time after completion of segment 2 displacement		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	0	10000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_22	Functional Description	Paragraph 3 mobile displacements		Modify the way in which	Running setup	factory value	1000	Unit	Instruction unit
	parameter range	-10000000	10000000	mode of entry into force	with immediate effect	applying the model	P	data type	Int32

H11_24	Functional Description	Maximum operating speed for segment 3 displacements		Modify the way in which	Running setup	factory value	200	Unit	rpm
	parameter range	1	6000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_25	Functional Description	3rd displacement plus deceleration time		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	1	65535	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_26	Functional Description	Waiting time after completion of paragraph 3 displacement		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	0	10000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_27	Functional Description	paragraph 4 mobile displacement		Modify the way in which	Running setup	factory value	1000	Unit	Instruction unit
	parameter range	-10000000	10000000	mode of entry into force	with immediate effect	applying the model	P	data type	Int32

H11_29	Functional Description	Maximum operating speed for segment 4 displacements		Modify the way in which	Running setup	factory value	200	Unit	rpm
	parameter range	1	6000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_30	Functional Description	4th displacement plus deceleration time		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	1	65535	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

H11_31	Functional Description	Waiting time after completion of paragraph 4 displacement		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	0	10000	mode of entry into force	with immediate effect	applying the model	P	data type	UInt16

4.12 Internal Multiband Speed Parameters (H12)

H12_00	Functional Description	Multi-stage speed command operation mode		Modify the way in which	Enable Disconnect	factory value	1	Unit	——
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16

When H02_00=0 selects the position control mode and H06_00=1 selects the speed command from multispeed, set the multispeed operation mode in the table below.

Setting values	mode of operation	Remarks
0	Single-cycle end-of-operation shutdown	Run 1 round to stop, servo enable level is valid to start running; section number from the first section automatically incremental running to the end of the section, each section of the running time can be set; servo enable OFF, the motor in accordance with the H02_05 set to enable OFF way to stop.
1	Cyclic operation	Cyclic operation, servo enable level is valid to start running; segment number from the first segment automatically incremental operation to the end of the segment, each section of the running time can be set; the end of the segment running time execution is complete, automatically from the first segment to repeat the cycle of execution; servo enable OFF, the motor in accordance with the H02_05 set to enable the OFF way to stop.
2	DI switching operation	To set up a DI switching operation, there must be at least one DI associated with a multi-run command switch. InFun6(CMD1) InFun7(CMD2) is a multi-segment switching instruction 1 and 2. The number of segments to be run is determined by the DI terminal combination logic (speed within segment/segment run time). Each time the DI terminal logic is determined and the servo is enabled, the corresponding segment operation will be switched immediately.

Note 1: The DI switching operation combination logic is shown in the following table:

Multi-segment switching instruction 1 (CMD1)	Multi-segment switching command 2 (CMD2)	Enable (SON)	Running speed segments
OFF	OFF	ON	Paragraph 1
ON	OFF	ON	Paragraph 2
OFF	ON	ON	Paragraph 3
ON	ON	ON	Paragraph 4

H12_01	Functional Description	Speed command end segment selection		Modify the way in which	Enable Disconnect	factory value	4	Unit	——
	parameter range	1	4	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16

Setting the total number of multispeed running segments, different segments can be set to different running speeds and running time.
When the multisegment operation mode ≠ 2, the multisegment speed segment number is automatically incrementally switched, and the switching sequence is 1, 2.H12_01 end segment.

H12_03	Functional Description	Acceleration time		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16

Setting the acceleration time from 0 to 1000rpm; when switching from one segment to another, the motor automatically accelerates and decelerates smoothly; common to all segments.

H12_04	Functional Description	Deceleration time		Modify the way in which	Running setup	factory value	10	Unit	ms
	parameter	0	65535	mode of	with	applying	S	data type	UInt16

	range			entry into force	immediat e effect	the model			
Setting the acceleration time from 1000 to 0rpm; when switching from segment to segment, the motor automatically accelerates and decelerates smoothly; common to all segments.									

H12_20	Functional Description	Paragraph 1 of the Speed Directive		Modify the way in which	Running setup	factory value	0	Unit	rpm
	parameter range	-6000	6000	mode of entry into force	with immediat e effect	applying the model	S	data type	Int16
Setting the maximum speed at which the first speed is executed; the direction of movement of the motor depends on the set positive and negative numbers; the same applies to the following other speeds.									

H12_21	Functional Description	The run time of the 1st instruction		Modify the way in which	Running setup	factory value	50	Unit	0.1s
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	S	data type	UInt16
Set the time to execute the first speed run; when the time is reached, the run is completed; the same applies to the following other segments.									

H12_23	Functional Description	Paragraph 2 of the speed comm		Modify the way in which	Running setup	factory value	100	Unit	rpm
	parameter range	-6000	6000	mode of entry into force	with immediat e effect	applying the model	S	data type	Int16

H12_24	Functional Description	The running time of the 2nd instruction		Modify the way in which	Running setup	factory value	50	Unit	0.1s
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	S	data type	UInt16

H12_26	Functional Description	Paragraph 3 speed instructions		Modify the way in which	Running setup	factory value	300	Unit	rpm
	parameter range	-6000	6000	mode of entry into force	with immediat e effect	applying the model	S	data type	Int16

H12_27	Functional Description	The running time of the 3rd instruction		Modify the way in which	Running setup	factory value	50	Unit	0.1s
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	S	data type	UInt16

H12_29	Functional Description	Paragraph 4 speed instructions		Modify the way in which	Running setup	factory value	500	Unit	rpm
	parameter range	-6000	6000	mode of entry into force	with immediat e effect	applying the model	S	data type	Int16

H12_30	Functional Description	The running time of the 4th instruction	Modify the way	Running setup	factory value	50	Unit	0.1s

				in which					
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	S	data type	UInt16

4.13 Other Supporting Parameters (H17-H31)

H17_00	Functional Description	VDI1 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory Default Association:0 No function; If you need to change the associated function, refer to the "Input Terminal DI Function Option Table".									

H17_01	Functional Description	VDI1 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal value 1 is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H17_02	Functional Description	VDI2 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory Default Association:0 No function; If you need to change the associated function, refer to the "Input Terminal DI Function Option Table".									

H17_03	Functional Description	VDI2 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H17_04	Functional Description	VDI3 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	41	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Factory default association: 0 No function; if you need to change the association function, refer to "Input Terminal DI Function Option Table".									

H17_05	Functional Description	VDI3 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Setting 0: indicates that the signal is valid for conduction and invalid for disconnection (positive logic input); Setting 1: indicates that the signal is valid for disconnection and invalid for conduction (reverse logic input).									

H17_06	Functional Description	VDO1 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	24	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16

Factory default association: 0 No function; if you need to change the association function, refer to "Output Terminal DO Function Option Table".

H17_07	Functional Description	VDO1 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H17_08	Functional Description	VDO2 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	24	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Factory default association: 0 No function; if you need to change the association function, refer to "Output Terminal DO Function Option Table".									

H17_09	Functional Description	VDO2 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H17_10	Functional Description	VDO3 terminal function selection		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	0	24	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Factory default association: 0 No function; if you need to change the association function, refer to "Output Terminal DO Function Option Table".									

H17_11	Functional Description	VDO3 terminal logic selection		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Set 0: when the signal is valid, the optocoupler conducts (positive logic output); set 1: when the signal is valid, the optocoupler turns off (reverse logic output).									

H17_12	Functional Description	VDO Virtual Terminal Output Status		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediat e effect	applying the model	P/S/T	data type	UInt16
Decimal display hardware VDO port status;; For example, VDO1 and VDO2 are valid and the rest of the VDOs are invalid, then the binary is 00000011, and H17_12 is displayed as 3 (decimal).									

Note: Servo product software version V555 and above support the use of our host computer to modify and save the parameters based on CANoen01/402 object dictionary.

17_13	Functional Description	cia301-basic parameter 1		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_14	Functional Description	cia301-basic parameter 2		Modify the way in which	Show only	factory value	——	Unit	us
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_15	Functional Description	cia301-basic parameter 3		Modify the way in which	Show only	factory value	——	Unit	ms
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_16	Functional Description	cia301-basic parameter 4		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_17	Functional Description	cia301-basic parameter 5		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_18	Functional Description	cia301-basic parameter 6		Modify the way in which	Show only	factory value	——	Unit	ms
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_19	Functional Description	cia301-basic parameter 7		Modify the way in which	Show only	factory value	——	Unit	ms
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_20	Functional Description	cia301-basic parameter 8		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_21	Functional	cia301-basic parameter 9		Modify	Show	factory	——	Unit	——

	Description			the way in which	only	value			
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_22	Functional Description	Select the PDO channel to view		Modify the way in which	Running setup	factory value	1	Unit	——
	parameter range	1	4	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Unt16

H17_23	Functional Description	cia301-PRDOX channel parameter 1		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_24	Functional Description	cia301-PRDOX channel parameter 2		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_25	Functional Description	cia301-PRDOX channel parameter 3		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_26	Functional Description	cia301-PRDOX channel parameter 4		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_27	Functional Description	cia301-PRDOX channel parameter 5		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_28	Functional Description	cia301-PRDOX channel parameter 6		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_29	Functional Description	cia301-PRDOX channel parameter 7		Modify the way in which	Show only	factory value	——	Unit	——

	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_30	Functional Description	cia301-PRDOX channel parameter 8		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_31	Functional Description	cia301-PRDOX channel parameter 9		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_32	Functional Description	cia301-PRDOX channel parameter 10		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_33	Functional Description	cia301-TPDOX channel parameter 1		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_34	Functional Description	cia301-TPDOX channel parameter 2		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_35	Functional Description	cia301-TPDOX channel parameter 3		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_36	Functional Description	cia301-TPDOX Channel Parameter 4		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_37	Functional Description	cia301-TPDOX channel parameter 5		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_38	Functional Description	cia301-TPDOX channel parameter 6		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_39	Functional Description	cia301-TPDOX Channel Parameter 7		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_40	Functional Description	cia301-TPDOX channel parameter 8		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_41	Functional Description	cia301-TPDOX channel parameter 9		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_42	Functional Description	cia301-TPDOX channel parameter 10		Modify the way in which	Show only	factory value	——	Unit	——
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_43	Functional Description	CIA402-6040h Control word		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt16

H17_44	Functional Description	CIA402-6041h Status word		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt16

H17_45	Functional Description	CIA402-605Ah Quick stop method		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	-32767	32767	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int16

H17_46	Functional	CIA402-6060h Motion		Modify	Show	factory	8	Unit	——

	Description	Mode		the way in which	only	value			
	parameter range	-127	127	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int16

H17_47	Functional Description	CIA402-6061h Mode Display		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	-127	127	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int16

H17_48	Functional Description	CIA402-6064h Position Feedback		Modify the way in which	Show only	factory value	0	Unit	Pul
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_49	Functional Description	CIA402-606Ch Speed Feedback		Modify the way in which	Show only	factory value	0	Unit	Pul/s
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_50	Functional Description	CIA402-6071h Target torque		Modify the way in which	Show only	factory value	0	Unit	0.1%
	parameter range	-32767	32767	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int16

H17_51	Functional Description	CIA402-6077h Torque Feedback		Modify the way in which	Show only	factory value	0	Unit	0.1%
	parameter range	-32767	32767	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int16

H17_52	Functional Description	CIA402-607Ah Target location		Modify the way in which	Show only	factory value	0	Unit	Pul
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_53	Functional Description	CIA402-60Ch Origin Offset		Modify the way in which	Show only	factory value	0	Unit	Pul
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H17_54	Functional Description	CIA402-60Eh Command Polarity		Modify the way in which	Show only	factory value	0	Unit	——

	parameter range	0	256	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt16

H17_55	Functional Description	CIA402-607Fh Maximum profile speed (pt mode)		Modify the way in which	Show only	factory value	0	Unit	Pul/s
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_56	Functional Description	CIA402-6081h Contouring speed (pp mode)		Modify the way in which	Show only	factory value	0	Unit	Pul/s
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_57	Functional Description	CIA402-6083h Contour acceleration		Modify the way in which	Show only	factory value	10000	Unit	Pul/s^2
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_58	Functional Description	CIA402-6084h Contour Deceleration		Modify the way in which	Show only	factory value	10000	Unit	Pul/s^2
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_59	Functional Description	CIA402-6085h Rapid Deceleration		Modify the way in which	Show only	factory value	50000	Unit	Pul/s^2
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_60	Functional Description	CIA402-6098h Recovery method		Modify the way in which	Show only	factory value	35	Unit	——
	parameter range	-127	127	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int16

H17_61	Functional Description	CIA402-6099h-1h back to the original highway		Modify the way in which	Show only	factory value	10000	Unit	Pul/s
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_62	Functional Description	CIA402-6099h-2h Back to Original Low Speed		Modify the way in which	Show only	factory value	1000	Unit	Pul/s
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_63	Functional Description	CIA402-609A Back to original plus or minus velocity		Modify the way in which	Show only	factory value	1000	Unit	Pul/s²
	parameter range	0	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt32

H17_64	Functional Description	CIA402-60FFh Target speed		Modify the way in which	Show only	factory value	0	Unit	Pul/s
	parameter range	-2147483648	2147483647	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	Int32

H30_00	Functional Description	Main task execution time		Modify the way in which	Show only	factory value	0	Unit	0.1%
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	ALL	data type	UInt16

H30_01	Functional Description	CANOPEN NMT Network Management Status		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt16

H30_02	Functional Description	CIA402 state machine status		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	CAN-ECAT	data type	UInt16

H30_03	Functional Description	special function settings		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	Power failure and reboot	applying the model	ALL	data type	UInt16

for manufacturers' per-position setting of parameters for special applications

Bit 位	Function	Set to false	Set to true
0	Limit release mode	edge detection	level detection
1	PP mode absolute positioning reference point selection	Based on the pre-motion static datum coordinates	based on the current real-time coordinates
2	Direction port exception, whether to turn off the DIR interrupt.	Not disabling the DIR interrupt	Turn off the interrupt first, then delay recovery
3	Whether or not to block window watchdog monitoring	Unshielded Window Watchdog	Shielded Window Watchdog
4	Whether or not to mask independent watchdog monitoring	Without shielding the independent watchdog	Shielded independent watchdog
5	whether or not to block user watchdog monitoring	Not blocking user watchdogs	shielding users from watchdogs
6	If the direction port is abnormal, does it generate an alarm?	without generating abnormal interruption alarms	generating an abnormal interruption alarm

H32_01	Functional Description	internal servo enable		Modify the way in which	Running setup	factory value	0	Unit	——
	parameter range	0	1	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16

H32_02	Functional Description	servo state		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	6	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16

= 1, indicates that the motor system is being initialized
=2, indicating that the motor is being deactivated
=3, indicates that the motor has received the enable command and is processing the enable power-up process
=4, indicates that the motor has received the enable command and is configuring the enable state
=5, indicates that the motor is in the enable state
=6, indicates that the motor is in the de-energized shutdown process

H32_03	Functional Description	the types of features supported by the drive		Modify the way in which	Show only	factory value	0	Unit	——
	parameter range	0	65535	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16

By the 16 BIT bits respectively indicates the driver's hardware version and software version of the function type support, when the bit = 1 indicates support (servo products V560 version and above support)

Bit	0	1	2	3	4	5	6	7
Function	Whether or not it is supported Pulse command 485+CAN	Whether to support ETHERCAT bus communication	Whether or not it is supported Calibration of the mt6835 encoder	Whether or not it is supported Hardware STO security control	manufacturer's reservation	manufacturer's reservation	manufacturer's reservation	Whether or not it is supported boot load upgrade
Bit	8	9	10	11	12	13	14	15

Function	current standard hardware program for the low voltage series	Currently high voltage 220V standard hardware program	Currently a high voltage 220V all-in-one hardware program	Currently high voltage 380V standard hardware program	Currently a low voltage 1 tow 2 standard hardware program that	manufacturer's reservation	manufacturer's reservation	manufacturer's reservation

Chapter V. 485 Communication Functions

5.1-Introduction of Communication Protocols

The servo drive is embedded with standard Modbus RTU communication protocol, which supports the operation of Modbus RTU master to read and write single and multiple parameters. When the controller with Modbus protocol is successfully connected with the servo drive, the controller can directly perform parameter setting, monitoring and reading operations on the servo drive. Servo drive in

In communication control mode, the controller can modify the position, speed and torque operation command parameters in real time to change the motor operation position, speed and torque.

The parameter function number of the drive corresponds to the Modbus address of the device in the following table

parameter function number		Calculation	Modbus address
Hexadecimal	decimal	(hexadecimal group number) x 256 + (decimal group number)	decimal
H02	00	02 (02)×256 + 00	512
H0C	12	0C(12)×256 + 12	3084
H11	04	11(17)×256 + 04	4356
Parameter function group number (hex) x 256 + address number within parameter group (decimal) = Modbus register control address (decimal)			

Modbus RTU protocol has a variety of bus commands, the servo drive supports the most commonly used three kinds of function code commands (03H/06H/10H), the three kinds of function code commands to meet the controller to the full range of servo drive control.

1:communication read/write parameter data length

Modbus registers are 16-bit data length, so pay attention to the data type of the access parameter when using Modbus commands.

Parameter data type is UInt16, Int16 should use function code 03H to read, 06H to write.

Parameter data type is UInt32, Int32 or read/write multiple parameters consecutively should use function code 03H read, 10H write.

2:03H(read single register)

If only one parameter is read, the register start address is the register address of the parameter. The return data is the data corresponding to the parameter.

Example: The host sends the following request data frame to read the drive communication address station number 01, parameter number H0B_00 (current motor speed) data.

H0B_00 register address is 0B00H; read register number 1 (data type Int16); send request pin ↓.

Slave address	function codes	register start Addresses are high	register start Address Low	registers to be read High volume	registers to be read Low volume	CRC Checksum High	CRC Checksum Low Bit
01H	03H	0BH	00H	00H	01H	86H	2EH

Assuming that the current speed of the motor is 0, the drive correctly returns the answer pin as ↓ to return to the starting address data for H0B_00 data.

Slave address	function codes	Returning data the length of the byte count	Returns the start address data high	Returns the start address data low	CRC check Highs	CRC check Low
01H	03H	02H	00H	00H	B8H	44H

3:06H (Write single register)

Only one 16-bit data length parameter can be written using the 06H function code, the register start address is the register address of the parameter, and the driver will change the value of this parameter to the data to be written when it receives the request data frame successfully.

Example: The host sends the following request data frame to write data 1 to the drive communication address station number 01 and parameter number H02_00 (control mode selection).

H02_00 register address is 0200H;write data is 1,data type is Int16;send request pin↓

Slave address	function codes	register start Addresses are	register start Address Low	Write to register The data is high	Write to register	CRC check Highs	CRC check Low

		high			The data is low		
01H	06H	02H	00H	00H	01H	49H	B2H

After a successful write the drive correctly returns the value of the answer pin as ↓H0B_00 will be changed to 1;.

Slave address	function codes	register start Addresses are high	register start Address Low	Received register data high	Received register data low	CRC check Highs	CRC check Low
01H	06H	02H	00H	00H	01H	49H	B2H

4:03H (read multiple consecutive registers)

Some parameters of the parameter table have 32-bit data types, and some parameters have jumps between them, such as the next parameter of H0B_00 is H0B_02, so if you want to read multiple parameters consecutively, you need to use 03H to read consecutively multiple 16-bit registers. To read multiple parameters consecutively, you need to use 03H function code to read multiple 16-bit registers consecutively. When you use 03H to read multiple parameters consecutively, the start address of the register is the register address of the first parameter. The order of returning consecutive data is 1st parameter data → 2nd parameter data → Nth parameter data; the system automatically shifts the order according to the 1st parameter data returned, and the amount of returned data depends on the number of registers read.

Example: The host sends the following request data frame to read the three parameter data of the drive with communication address station No. 01, parameter No. H0B_02 (real-time motor torque) and its next parameter H0B_03 (input DI monitoring) and its next parameter H0B_05 (output DO monitoring).

The register address of the starting parameter H0B_03 is 0B03H; the parameter data type is H0B_03(UInt32), ,H0B_05(UInt16), and the number of registers read according to the parameter data type is 3; send the request pin ↓.

Slave address	function codes	register start Addresses are high	register start Address Low	registers to be read High volume	registers to be read Low volume	CRC Checksum High	CRC Checksum Low Bit
01H	03H	0BH	03H	00H	03H	E7	EF

Assuming the current parameter value H0B_03=1,H0B_05=3 the driver correctly returns the answer pin as ↓.

Slave address	function codes	Returning data byte length	Returns the start address + 1 data high	Returns the starting address + 1 number According to the low level	Returns the start address + 2 data high	Returns the start address + 2 data low	Returns the start address + 3 data high	Returns the start address + 3 data low	CRC Checksum High	CRC check Low
01H	03H	06H	00H	01H	00H	00H	00H	03H	5CH	B4H
			H0B_03 Parameter Return Value (Lower 16 bits first, upper 16 bits second)				H0B_05 Return Value			

5:10H (write multiple consecutive registers)

Some parameters of the parameter table have 32-bit data types, and some parameters have jumps between them, such as the next parameter of H05_04 is H05_07, so if you want to write multiple parameter data consecutively, you need to use the 10H function code to write consecutively multiple 16-bit registers. When using 10H to read multiple consecutive parameters, the register start address is the register address of the first parameter. The order of writing consecutive data is 1st parameter data → 2nd parameter data → Nth parameter data; the system is based on the received 1st parameter data automatically sequential offset, the written data.

Example: The host sends the following request data frame, writing the drive communication address station number 01, the parameter number H11_12 (first displacement) to 1000 and its next parameter H11_14 (first maximum speed) to 200.

The register address of the starting parameter H11_12 is 110CH; the parameter data type is H11_12(Int32),H11_14(UInt16); the number of registers written according to the parameter data type is 3; send request pin ↓.

Slave address	function codes	register start Address Highs	register start Address Low	the number of write registers Highs	the number of write registers Low	the number of bytes written	Start address data high	Start address data low bit	Starting address +1 The data is high	Starting address +1 The data is low	Starting address +2 The data is high	Starting address +2 The data is low	CRC Checksum High	CRC check Low
01H	10H	11H	0CH	00H	03H	06H	03H	E8H	00H	00H	00H	C8H	17H	31H
							Data written by H11_12				H11_14 data			

After a successful write the driver correctly returns the answer pin as ↓ the value of H11_12 will be changed to 1000; the value of H11_14 will be changed to 200; and

From the station	function codes	register start Addresses are high	register start Address Low	Number of received registers high	Number of received registers low	CRC check Highs	CRC check Low

Address							
01H	10H	11H	0CH	00H	03H	45H	37H

6:communication error code

If the master sends an incorrect data frame during communication or the slave servo receives an error message from the master due to interference, the slave will return an error data frame in the following format

Slave address	Functional error code	Error number	CRC Checksum High	CRC Checksum Low Bit
returned based on the actual station number of the communication	(when using code 03H) = 83H (when using code 06H) = 86H (when using 10H code) = 90H	(Function code error) =01H (Parameter address error)=02H (CRC test error)=04H	Based on the test sum of the first three byte values	

5.2 - Communication Control Program

1:communication control speed operation

First of all, use the upper computer debugging software to set the following parameters in advance

parameter number	Setting values	Functional Description	Modify the way in which	mode of entry into force	parameter range	data type
H02_00	0	Control mode selection: speed control	Enable Disconnect	with immediate effect	0~2	UInt16
H03_02	1	DI1 association: servo enable control	Running setup	with immediate effect	0~41	UInt16
H03_03	0	DI1 Logic Selection: Conductivity, Positive Logic	Running setup	with immediate effect	0~1	UInt16
H04_00	19	DO1 correlation: speed arrival outputs	Running setup	with immediate effect	0~19	UInt16
H04_01	0	DO1 Logic Selection: Conducts output when signal is valid, Positive logic	Running setup	with immediate effect	0~1	UInt16
H06_02	0	Speed command source: internal speed comm	Enable Disconnect	with immediate effect	0~1	UInt16
H0C_13	1	Parameters are saved to EEPROM and automatically set to 0 after success; power off hold	Running setup	with immediate effect	0~1	UInt16

The communication then controls the following parameter table objects

parameter number	Functional Description	Modify the way in which	mode of entry into force	parameter range	Unit	data type
H06_03	Setting the speed command communication setting value for running	Running setup	with immediate effect	-6000~6000	rpm	Int16
H06_05	Set the acceleration time for the speed run	Running setup	with immediate effect	0~65535	ms	UInt16
H06_06	Set the deceleration time for the speed run	Running setup	with immediate effect	0~65535	ms	UInt16
H06_18	velocity reaches the signaling threshold	Running setup	with immediate effect	10~6000	rpm	UInt16
H03_03	Set 1 to enable conduction motor operation; set 0 to motor stop or DI1 external signal to control motor running and stopping.	Running setup	with immediate effect	0~1	-	UInt16

Note: servo enable in this control scheme is the switch to enable the motor, but also the switch to start the speed operation; if the running process is interrupted, the motor will be stopped according to the method set in the H05_05 parameter; the motor will be stopped according to the method set in the H05_05 parameter.
If the current actual motor speed H0B_00>=H06_18 ,DO1 speed arrival output is valid.

2:Communication control position operation

First of all, use the upper computer debugging software to set the following parameters in advance

parameter number	Setting values	Functional Description	Modify the way in which	mode of entry into force	parameter range	data type
H02_00	1	Control mode selection: position control	Enable Disconnect	with immediate effect	0~2	UInt16
H03_02	1	DI1 association: servo enable control	Running setup	with immediate effect	0~41	UInt16
H03_03	0	DI1 Logic Selection: Conductivity, Positive Logic	Running setup	with immediate effect	0~1	UInt16
H03_04	28	DI2 association:Multi-segment bit operation enable	Running setup	with immediate effect	0~41	UInt16
H03_05	0	DI2 Logic Selection: Conductivity, Positive Logic	Running setup	with immediate effect	0~1	UInt16
H04_00	5	DO1 association: Positioning complete	Running setup	with immediate effect	0~19	UInt16
H04_01	0	DO1 Logic Selection: Conducts output when signal is valid, Positive logic	Running setup	with immediate effect	0~1	UInt16
H05_00	2	Position instruction source: internal multi-segment bit instruction	Enable Disconnect	with immediate effect	0~1	UInt16
H11_00	0	Multi-segment operation mode: end of single-cycle operation	Enable Disconnect	with immediate effect	0~3	UInt16
H11_01	1	Displacement instruction end segment: 1 segment at a time.	Enable Disconnect	with immediate effect	1~4	UInt16
H0C_13	1	Parameters are saved to EEPROM and automatically set to 0 after success; power off hold	Running setup	with immediate effect	0~1	UInt16

The communication then controls the following parameter table objects

parameter number	Functional Description	Modify the way in which	mode of entry into force	parameter range	Unit	data type
H05_21	locating the completion signal threshold	Running setup	with immediate effect	0~65535	Encoder	UInt16
H11_04	Set 0 relative displacement; set 1 absolute displacement	Running setup	with immediate effect	0~1	-	UInt16
H11_12	Sets the running displacement of	Running setup	with immediate effect	-9999999~9999999	p	Int32
H11_14	Setting the speed of the run	Running setup	with immediate effect	0~6000	rpm	UInt16
H11_15	Setting the acceleration and deceleration times for running	Running setup	with immediate	0~65535	ms	UInt16

			effect			
H03_03	Set 1 motor enable on; set 0 motor enable off or DI1 external signal to control the motor enable or disable.	Running setup	with immediate effect	0~1	-	UInt16
H03_05	Set 1 multi-segment bit to start operation; set 0 multi-segment bit to stop or DI2 external signal, to control multi-segment enable start/stop.	Running setup	with immediate effect	0~1	-	UInt16

Note: Multi-segment enable is similar to multi-segment run switch, the motor will start to run according to the set position and speed when the multi-segment enable is on, and the motor will stop automatically at the end of the run; the motor needs to turn on the multi-segment enable again when it is running again. If the multi-stage enable is disconnected during operation, the motor will stop immediately.

If the current value of the current deviation counter H0B_15<H05_21, the DO1 positioning completion output is valid.

3:communication control torque operation

First of all, use the upper computer debugging software to set the following parameters in advance

parameter number	Setting values	Functional Description	Modify the way in which	mode of entry into force	parameter range	data type
H02_00	2	Control mode selection: torque control	Enable Disconnect	with immediate effect	0~2	UInt16
H03_02	1	DI1 association: servo enable control	Running setup	with immediate effect	0~41	UInt16
H03_03	0	DI1 Logic Selection: Conductivity, Positive Logic	Running setup	with immediate effect	0~1	UInt16
H04_00	18	DO1 association:Torque arrival output	Running setup	with immediate effect	0~19	UInt16
H04_01	0	DO1 Logic Selection: Conducts output when signal is valid, Positive logic	Running setup	with immediate effect	0~1	UInt16
H0C_13	1	Parameters are saved to EEPROM and automatically set to 0 after success; power off hold	Running setup	with immediate effect	0~1	UInt16

The communication then controls the following parameter table objects

parameter number	Functional Description	Modify the way in which	mode of entry into force	parameter range	Unit	data type
H07_03	Setting the torque command communication setting value for the running	Running setup	with immediate effect	-3000~3000	0.1%	Int16
H07_19	Setting the forward maximum speed limit for torque operation	Running setup	with immediate effect	0~6000	rpm	UInt16
H07_20	Setting the reverse maximum speed limit for torque operation	Running setup	with immediate effect	0~6000	rpm	UInt16
H07_21	Setting the torque to reach the reference value	Running setup	with immediate effect	0~3000	0.1%	UInt16
H07_22	Setting the torque to reach the rms value	Running setup	with immediate effect	0~3000	0.1%	UInt16
H07_23	Set the torque to reach the invalid value	Running setup	with immediate effect	0~3000	0.1%	UInt16

H03_03	Set 1 to enable conduction motor operation; set 0 to motor stop or DI1 external signal to control motor running and stopping.	Running setup	with immediate effect	0~1	-	UInt16

Note: Servo enable in this control scheme is the switch to enable the motor, and also the switch to start torque operation; if the enable is interrupted during operation, the motor will be stopped according to the method set in the H05_05 parameter; the motor will be stopped according to the method set in the H05_05 parameter.

If the current actual motor torque H0B_02>=(H07_21+H07_22) DO1 Torque Arrival output is valid.

If the current actual motor torque H0B_02< (H07_21+H07_23) DO1 torque arrival output is invalid.

Chapter 6: Applications of Multiturn Absolute Value Systems

6.1 - Introduction to the Application of Multi-Turn Absolute Value Systems

The use of multi-turn absolute system applications, the need to match the motor installed multi-turn absolute encoder, multi-turn absolute encoder that detects the position of the motor within a week of rotation also counts the number of revolutions of the motor, the maximum recording range - 32768-32767 revolutions.

Multi-turn absolute encoders require an external uninterruptible power supply in order not to lose position data. Power is supplied to the encoder from the drive via the encoder extension cable when the servo drive is energized, and from the battery on the encoder extension cable when the drive is de-energized; battery life is recommended to be no more than 2 years.

6.2 - Error Code ER.731/ ER.730/ ER.735

ER.731 (Battery failure of multi-turn absolute encoder) reminds the user that the multi-turn absolute encoder has been disconnected from the power supply and the number of recorded revolutions has been lost, and that it is necessary to reset the encoder to H0D_20=2, and to reconfirm the position of the coordinates if absolute positioning is used.
ER.731 (Multiturn absolute encoder battery failure) occurs in the following cases
1: When connecting the motor, the drive and the extension cable, power up the drive, the drive will alarm ER.731.
2: If the battery is forcibly replaced when the drive is de-energized, or if the extension cable from the battery to the motor encoder is disconnected, the drive will alarm ER.731.
3: The battery connected to the encoder is damaged and cannot continue to supply power to the motor encoder, the drive will alarm ER.731.
Ensure that the battery can normally supply power to the multi-turn absolute encoder and then perform the H0D_20=2 reset operation.

H0D_20	Functional Description	Absolute encoder reset enable		Modify the way in which	Enable Disconnect	factory value	0	Unit	-
	parameter range	0	2	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
set to 0; no effect. Set 1: Reset absolute encoder internal fault message. Set 2: Reset absolute encoder internal fault message + clear multiturn data.									

ER.730 (Multi-turn Absolute Encoder Battery Warning) reminds the user to replace the battery when the detected battery voltage is less than 3.0V, otherwise the encoder data may be lost; refer to the next subsection for the battery replacement procedure. When the battery replacement is completed correctly, it will not affect the recorded lap data, this warning will be automatically disarmed, no need to reset the encoder; incorrect replacement of the battery will result in the multi-turn absolute encoder being powered off, the loss of the recorded lap data will be alarmed in the driver ER.731.

ER.735 (multi-turn absolute encoder circle overflow), when the encoder multi-turn data forward rotation is greater than 32767 or reverse rotation is less than -32768 will be alarmed; if the multi-turn absolute motor is applied in the linear continuous rotation, after a period of time, the number of rotations will always be more than the upper limit of the multi-turn absolute encoder can be counted or the lower limit can be shielded from the number of overflow through the H0A_36 = 1 Failure alarm.

H0A_36	Functional Description	absolute encoder fault shielding options		Modify the way in which	Enable Disconnect	factory value	0	Unit	-
	parameter range	0	3	mode of entry into force	with immediate effect	applying the model	P/S/T	data type	UInt16
Set 0: Multi-turn absolute encoder for normal application. Set 1: Shield overflow detection. Set 2: Masked battery status detection Set 3: Shield overflow detection + battery status detection.									

Note: When matching the multi-turn absolute value of the motor, but do not use its absolute value function, only as an incremental motor to use, can not be equipped with batteries need H0A_36 = 2 shielded battery status detection. Can also not need the number of turns overflow detection H0A_36 = 3 shielded turns overflow detection + battery status detection.

6.3-Remarks on Replacing Absolute Encoder Batteries

- When do I need to replace the encoder battery?

1: servo normal use, and no disassembly of the encoder cable, if the alarm ER.730, said battery warning, remind the user to replace the encoder in a timely manner. Otherwise, the position data recorded by the encoder may be lost.

2: servo normal use, and no disassembly of the encoder cable, if the alarm ER.731, that the battery failure, to remind the user must replace the encoder battery, the encoder position data has been lost.

3: The encoder battery should be replaced immediately if there is any leakage, damage or bulging of the encoder battery, so as to prevent the loss of battery power, which will lead to the loss of the encoder position data.

- Steps for the correct replacement of encoder batteries

1: Ensure that the drive is energized and the encoder cable is properly connected to the drive.

2:The drive is disconnected from the enable, open the cover of the battery compartment under non-operating condition, take out the old batteries and install the new batteries.

3: Replacement is completed and ER.730 is automatically deactivated indicating that the encoder position data has not been lost.

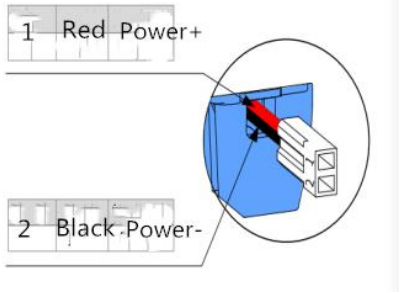
- Caution:

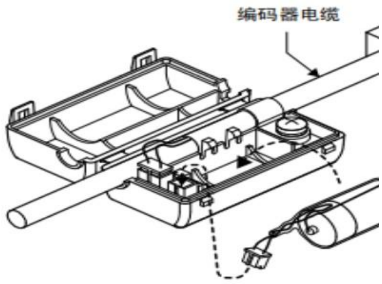
1:Battery specification is recommended: 3.6V 2500mAh.

2: Installation of new batteries, pay attention to distinguish between positive and negative battery, generally red positive, black negative. Reverse positive and negative poles may cause damage to the motor encoder.

3:Non-correct replacement of the battery caused by the encoder abnormal power loss, resulting in the loss of position data alarm ER.731 battery failure, to restore the connection needs to be re

Reset encoder H0D_20=2, if absolute positioning is used the coordinate position needs to be reconfirmed.





Chapter VII. Fault Alarms and Handling

7.1-Status Lights and Alarm Messages

AIMtor series products have a variety of alarm protection functions, in the absence of display panel models, through the body of the status indicators to indicate specific fault information, can also be connected to the host computer debugging software to view more detailed alarm information, according to the alarm information obtained to investigate the corresponding causes of alarms and solve the problem.

1. Status indicator

AIMtor series of products in the models without display panel status indicator is divided into green running indicator, and red fault indicator, blinking frequency of 0.5HZ.

Status Indicator Meter

Green indicator light	Information	-	Reason
Flashing	Motor enable ON	-	The drive is powered up and the motor is enabled
Often bright	Motor enable OFF	-	The drive is powered up, but the motor is not enabled.
permanent extinction	Drive not powered up or drive failure, see table below	-	The drive is not powered up or the drive is powered up but there is a fault alarm and the red light is flashing.

2:Fault alarm and processing

- In order to distinguish between the observational discriminatory nature of the red fault indicator blinking once and continuous blinking, the red fault indicator is alarmed from blinking twice.
- In the model without display panel, through the red indicator to indicate the common fault alarm status, other alarms can not be individually indicated need to be connected to the host computer software to monitor the more detailed and comprehensive alarm information.
- Warning reminder type, no fault signal output, warning conditions do not hold, automatically lift the warning, no need for fault reset.
- Alarm fault type, will output fault signal, need fault reset to release the fault.

Failure warning table

Red indicator light	alarm warning messages	alarm warning code	Type	Alarm warning Principle	possible causes	Solutions
Flashing 2 times	The location is super bad	ER.B00	Fault Alarm	Position deviation greater than H0A-10 threshold in position control mode	Motor blocking due to mechanical factors	Checking mechanical factors to ensure the smooth functioning of machinery
					The motor does not respond to higher input pulse frequencies	Reduce the input pulse frequency.
					Motor start and stop or change direction when acceleration and deceleration is too fast motor response	Increase in acceleration and deceleration time.
					The motor size is too small, and the torque is not enough, resulting in large position following error	Motor selection increased
					Low servo drive gain, slow motor response	Increase the value of the gain parameter.
					Drive UVW output out-of-phase disconnection or encoder disconnection	checking the cable connections
					Large load inertia, untimely motor response	Increase the H0A-10 threshold as appropriate; and

Flashing 3 times	driver overvoltage	ER.400	Fault Alarm	the input voltage exceeds the permissible value	unstable input power supply	Stabilizing the quality of the input power supply
					Large load inertia and regenerative energy generated by the motor when starting and stopping, resulting in high bus voltage	Increase the acceleration and deceleration time for smooth starting and stopping Adding regenerative braking resistors to absorb regenerative energy
	drive undervoltage	ER.410	Fault Alarm	the input voltage is lower than the permissible value	unstable input power supply	Stabilizing the quality of the input power supply
					The power of input power supply is small, which leads to the voltage being pulled down when the load is running with insufficient power	Increasing the power of the input power supply
Red indicator light	alarm warning messages	alarm warning code	Type	Alarm warning Principle	possible causes	Solutions
Flashing 4 times	Motor overload drive overload	ER.620	Fault Alarm	overload energy exceeding the permissible value of the system	The load is too heavy, the motor running torque exceeds the rated torque for a long time	Motor selection increased
					start-stop commutation is too frequent or the load inertia is high	Increase the acceleration and deceleration time for smooth starting and stopping
					Excessive load during operation due to motor blocking caused by mechanical factors	Checking mechanical factors to ensure the smooth functioning of machinery
					Inappropriate gain adjustment or too much rigidity, resulting in uncontrolled torque output	Rationalizing the gain
					Drive UVW output out-of-phase disconnection or encoder disconnection	checking the cable connections
	The motor is blocked	ER.630	Fault Alarm	with motion commands without motion feedback	Motor blocking due to mechanical factors	Checking mechanical factors to ensure the smooth functioning of machinery
					Drive UVW output out-of-phase disconnection or encoder disconnection	checking the cable connections
	drive hardware overcurrent	ER.201	Fault Alarm	output current exceeds the hardware or software range	Inappropriate gain adjustment or too much rigidity, resulting in uncontrolled current output	Rationalizing the gain
					Drive UVW output out-of-phase disconnection or encoder disconnection	checking the cable connections
	driver software overcurrent	ER.207	Fault Alarm		instantaneous and sudden changes in load	Checking mechanical factors to ensure the smooth functioning of machinery
					Shorted drive output, shorted UVW cable	Check drive outputs, measure motor cables
					damaged drive or shorted motor coils	Check the motor coil to make sure it is not short-circuited
Flashing 5 times	Motor overspeed	ER.500	Fault Alarm	motor running speed oversize values	the actual motor speed exceeds the maximum permissible value	Reducing the speed of movement
Flashing 6 times	high motor and drive temperatures	ER.650	Fault Alarm	drive temperature detection exceeds the allowable	High ambient temperatures	Increased environmental cooling measures
					After overloading, repeated full load operation by power off reset and restart	Increase the size of the motor to avoid full-load operation

				value	The motor overheats as a result of prolonged full-load operation	
Flashing 7 times	Parameters requiring power failure restart (warning)	ER.941	Warning Alert	reminding the user that the parameter values will not take effect until the power is turned on again	Alerting the user to a change in a parameter that needs to be energized again for it to take effect	After confirming that the modified parameter is the desired value, save it permanently and the parameter will take effect after power failure and reboot, and the warning will be canceled automatically
Flashing 8 times	Return-to-origin mismatch	ER.668	Fault Alarm	Mismatch in the way back to the origin	Home return mode H05-31 selects 14/15/16 single-turn electrical return to zero, while H05-30 selects home return control.	If H05-31 has a single-turn zero return mode, H05-30 should select the electrical zero return trigger.
					Home return mode H05-31 select 6/7/10/11,H05-36 Mechanical home offset positive or negative direction error,(positive value=positive direction, negative value=negative direction)	Modify the direction of the origin offset value of the H05-36 parameter to offset the position of the motion in the correct direction
					Home Reset Mode H05-31 is selected to include an external home switch condition or an overtravel limit switch condition without associating the condition to the corresponding physical DI pin	Assign the corresponding DI function to the physical DI input port according to the origin reset mode selected by H05-31.
					External home switch and over during return to zero The program limit switch signal is turned on or positively or negatively exceeded at the same time The unreasonable phenomenon that the program limit signal is turned on at the same time	Check for simultaneous conduction of external home switch or POT/NOT limit switches

Red indicator light	alarm/warning messages	alarm warning code	Type	Alarm/Warning Principle	possible causes	Solutions
Flashing 8 times	Return-to-origin timeout	ER.601	Fault Alarm	Origin reversion exceeds the H05_35 time limit without finding the origin	When using the home return function, the distance traveled from the home position is far, and the home position is not found within the specified time	Increase the speed of H05_33/ H05_34 origin search to find the origin within the time limit
					No signal from the external home switch or deceleration point, resulting in a constant failure to find the home position	Check for proper signaling of the external home switch or deceleration point switch
					When using Z-phase return to zero, it encounters a limit that causes a logic conflict and can't find the origin.	Check whether the limit switch POT/NOT position is reasonable, and change the limit switch installation position.
Flashing 9 times	encoder failure	ER.A33	Fault Alarm	encoder communication failure	The drive does not recognize the encoder signal because the encoder wire is broken or not in good contact	Check the encoder connection cable Check the encoder connection port
					the encoder is faulty or damaged	Replace the motor encoder
					The encoder wire has been externally interfered with; resulting in the drive not recognizing the encoder signal	The motor drive is correctly grounded and the encoder cable is isolated from high-current, high-power sources
Flashing 10 times	EEPROM parameter error	ER.101	Fault Alarm	EEPROM error	The system detects very frequent parameter changes written to the EEPROM over a short period of time.	Check the communication mode to modify the parameters, to avoid repeating the permanent saving of parameters written to the EEPROM.
					An abnormality in an internal parameter	need to restore all factory settings
					Hardware EEPROM chip damage	replacement hardware
Flashing 11 times	MCU program exception	ER.105	Fault Alarm	The internal program is running abnormally	Internal watchdog trigger	Power failure restart recovery, power failure restart is not resolved need to return to the factory test
Flashing 12 times	other alarms or warnings	ER.730	Warning Alert	encoder battery warning	Motors with multi-turn absolute encoders with external supply battery voltage below 3.0V Note: This warning message, fault signal is not output	Replace the encoder battery in time to ensure that the battery voltage is greater than 3.0V, please refer to Chapter 6 for details.
		ER.731	Fault Alarm	encoder battery failure	Motors using multi-turn absolute encoders, where the encoder has been de-energized, resulting in a loss of position turns	Check the encoder battery supply cable. Check the encoder battery. Referring to section VI for details
		ER.735	Fault Alarm	Multi-turn absolute value circle overflow	Motors with multi-turn absolute encoders, where the number of revolutions counted is greater than 32767 revolutions forward or less than -32768 revolutions reverse	Avoiding lap counts that are out of range This alarm can be blocked in case of continuous rotation. Referring to section VI for details
		ER.950	Warning Alert	Positive overtravel POT on	Alerts the forward overtravel POT limit signal to turn on, which will limit forward motion.	This warning is automatically deactivated when the positive overtravel POT limit signal is disconnected.
		ER.952	War	Negative	Alerts the negative overtravel	This warning is automatically

			ning Alert	overtravel NOT connected	POT limit signal to turn on, which will limit the negative motion.	deactivated when the negative overtravel NOT limit signal is disconnected.
		ER.130	Fault Alarm	DI Terminal Function Repeat Assignment	Multiple DI terminals are assigned to the same DI input function, resulting in duplicate assignments.	Reassigning the DI function to associate an input terminal
		ER.900	Warning Alert	The emergency stop signal is in effect	DI function emergency stop associated with DI turn-on is in effect	This warning is automatically canceled when the DI associated with the emergency stop is disconnected.
					The internal emergency stop of the host computer is switched on	This warning is automatically canceled if the internal emergency stop of the host computer is disconnected
		ER.234	Fault Alarm	Motor Flyer	Rapid movement of the motor shaft is detected during power-on initialization, which is a potential problem.	Ensure that the motor shaft is not interfered with by external forces when powering up, so that it is in a stationary state
		ER.102	Fault Alarm	EEPRM exception for parameter	The manufacturer's parameters are not registered Hardware EEPROM chip damage	Motor drive not registered, return to factory registration Hardware EEPROM chip
		Er.104	Fault Alarm	Parameter area EEPRM exception for note		

Chapter Viii Errata and Revision of the Historical Record

Errata and revisions	**The supported versions of the lower**
Add parameter H05_15 option 4 (pulse direction port as DI6, 7 input port)	>=V563
Description of revised parameters H03-51 and H03-53	-
Revision of the description of parameter H0A-02	-
Revision of the description of parameter H0C-00	-
Add parameter H0C-09 Can sample rate selection	>=V561
Add parameter H0C-11 DO of bus control, DO output state selection after disconnection.	>=V561
Add parameter H0C-30 Modbus communication timeout detection function	>=V557
Add parameter H32-03 Function types supported by the driver	>=V562
Add parameter H30-03 Drive Special Function Setting	>=V560
Refinement of the control flowchart for section 3.1	-
Description of revised parameters H03-00 and H30-31	-
Modify the description of the bus (ethercat-canopen) CIA301 parameter in the H17 parameter group	-
Modify the effective mode of H30-03 special function setting to re-power-on effective.	>=563
Add bus probe function, DI function option InFun option 38 (Probe 1) / InFun option 39 (Probe 2)	>=563

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