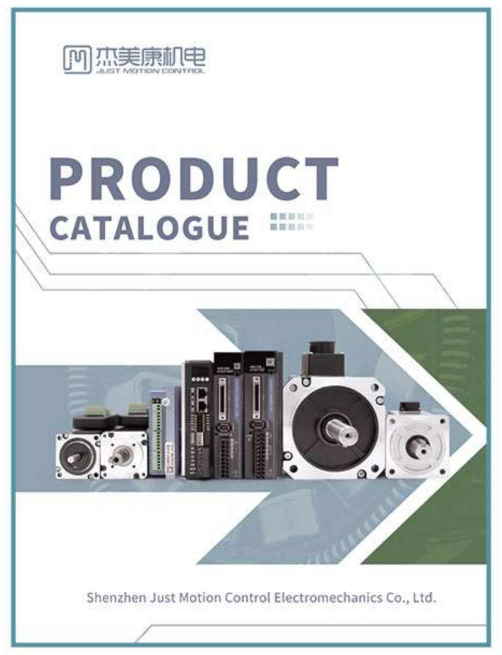
pulse

EtherCAT/CANopen/RS485

Overview product catalogues



Overview products

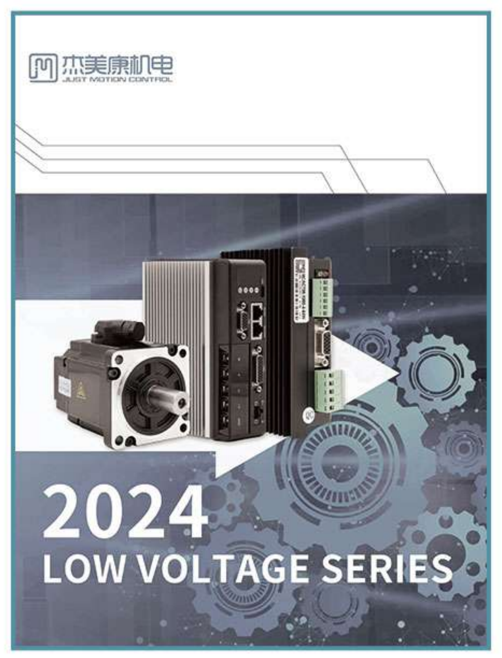
Controller

Open loop stpper

Closed loop stepper

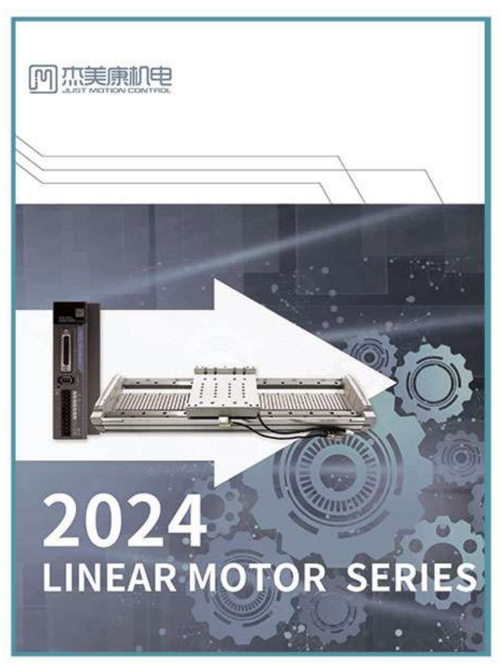
Integrated stepper

AC voltage servo



DC voltage servo

Integrated servo



Linear motor

Direct-Drive motor

Screwlead motor

Gear box

杰美康机电
JUST MOTION CONTROL

CONTENTS

2024 INTEGRATED SERVO SERIES

INTEGRATED SIDE WIRING SERVO

Servo Description

iHSV 57 - 30 - 14 - 36 - SC - XXX
① ② ③ ④ ⑤ ⑥ ⑦

No.	Name	Description
①	Product	iHSV: Integrated side wiring AC servo drive motor
②	Available Frame Size	#42mm; #57mm; #60mm; #86mm
③	Speed	30: 3000rpm; 40: 4000rpm
④	Available Rated Power	Rated power140W, Multiply by 10 is the motor rated power
⑤	Rated power supply voltage	24: 24VDC; 36: 36VDC; 48: 48VDC; 72: 72VDC
⑥	Brake	SC: Motor with brake; Default without brake
⑦	XXX	Product design serial number

EtherCAT/CANopen/RS485

iHSV 57 - 30 - 14 - 36 - RC
① ② ③ ④ ⑤ ⑥

⑥: RC : RS485 + CANopen; EC: EtherCAT

Summarize

iHSV42/57/60/86-XX integrated AC servo drive motor integrates AC servo driver into servo motor, and the two are perfectly integrated. It has the characteristics of low cost, full closed loop, full digital, low heat generation, small vibration and fast response. Includes adjustable three feedback loop controls (position loop, speed loop, and current loop).

Main Feature

- Multiple pulse input modes
  pulse + direction
- Optocoupler isolation servo reset input interface ERC
- RS232 interface and PC connection can be used to modify parameters
- Subdivisions can be selected by the user via an external dial switch or customized by software
- Overcurrent, overload, undervoltage, overspeed, over-differential protection
- Green light indicates operation, red light indicates protection or offline

Model Specifications

Substrate		#42 Base		#57 Base			#60 Base		#86 Base	
Power		52W	78W	100W	140W	180W	200W	400W	440W	660W
Rated speed (rpm)		4000	4000	3000	3000	3000	3000	3000	3000	3000
Maximum speed (rpm)		5200	5200	4200	4200	4200	4000	4000	4000	4000
Nominal torque(N.m)		0.13	0.19	0.32	0.45	0.6	0.64	1.27	1.4	2.1
Input Voltage		24VDC		36VDC			48VDC		72VDC	
Maximum pulse frequency		200K								
Default communication rate		57600 (additional adapter required)								
Protect		Overload, overcurrent, excessive position deviation, etc.								
Use environment	Occasion	Try to avoid dust, oil mist and corrosive gases								
	Operating temperature	0~+70°C								
	Storage temperature	-20°C~+80°C								
	Humidity	40~90%RH								
	Cooling method	Natural cooling or forced air cooling								

Installation and use environment

The installation and use environment has a direct impact on the normal operation and service life of the product, so the following conditions must be met:

- Working environment temperature: 0~55°C; working environment humidity:10%~9 0% (no condensation).
- Storage environment: -20°C~+85°C; storage environment humidity:90%below (no condensation).

Picture display

Port Schematic

System interface

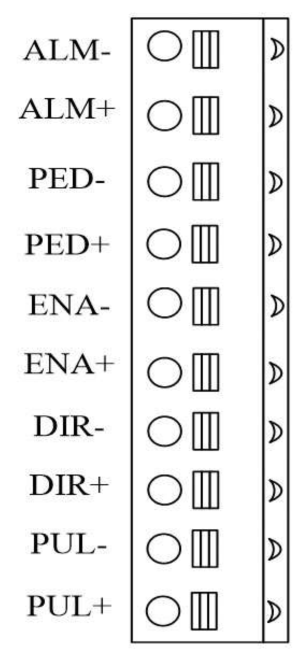
Communication Interface:

Model	Interface definition
iHSV42	NC RX GND TX VCC
iHSV57	
iHSV60	
iHSV86	

Input and output interface:

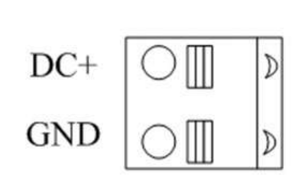
Model	Signal voltage	Interface definition
iHSV42	5V	ALM- ALM+ PEND- PEND+ ENA- ENA+ DIR- DIR+ PUL- PUL+
iHSV57		
iHSV60		
iHSV86		

Model Port Description



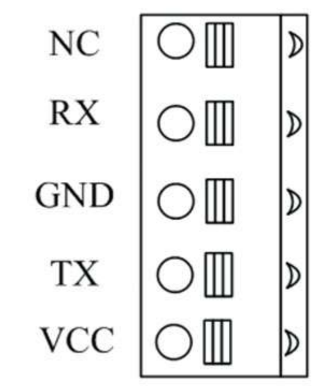
Symbol	Function	Explain
ALM-	Alarm output negative	
ALM+	Alarm output positive	
PED-	Position output negative	
PED+	Position output positive	
ENA-	Enable signal: This input signal is used to enable or disable; alternatively, it can be used to clear driver alarms. When ENA+ is connected to +5V and ENA-is connected to low level, the driver will cut off the current of each phase of the motor to make the motor in a free state. At this time, the pulse will not be responded and the alarm can be cleared. When this function is not needed, the enable signal terminal can be suspended	Low level 0~0.5V active
ENA+		High level 4~5V active
DIR-	Direction signal: high/low level signal, in order to ensure reliable commutation of the motor, the direction signal should be established at least 6us before the pulse signal	Low level 0~0.5V active
DIR+		High level 4~5V active
PUL-	Pulse control signal: pulse rising edge effective, in order to reliably respond to pulse signal, pulse width should be greater than 2.5us	Low level 0~0.5V active
PUL+		High level 4~5V active

Power port



Identification	Fhe symbol	Names	Note
power supply input end	DC+	power supply positive	20VDC-80VDC(according to the corresponding model of motor technical indicators to select voltage power supply)
	GND	power supply negative	

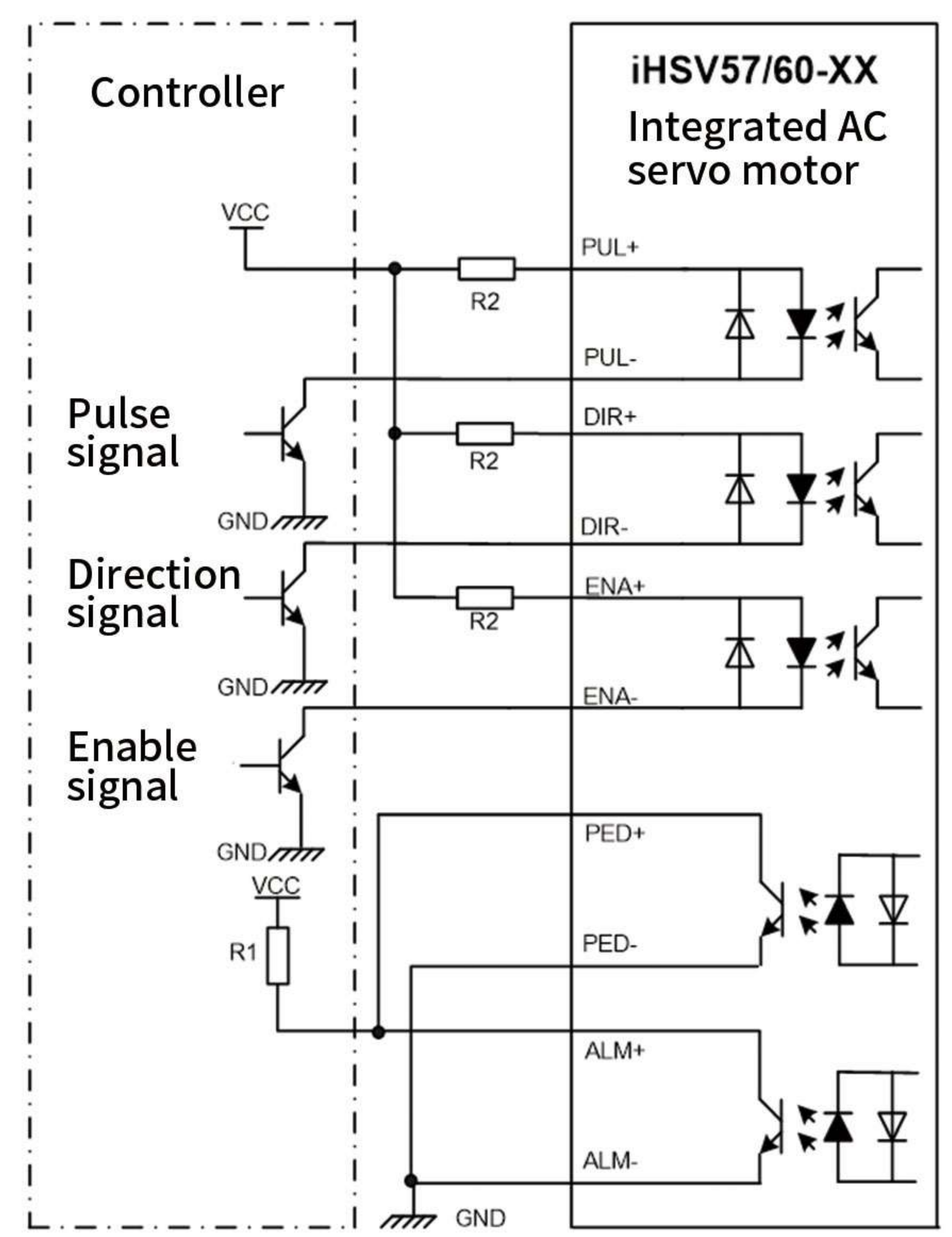
232 Serial Communication Wiring Diagram



Definition	Note	Company wiring color
NC	hang in the air	/
RX	receiving end	brown and white
GND	source negative	blue
TX	sending end	blue and white
VCC	power supply positive	/

Control signal wiring

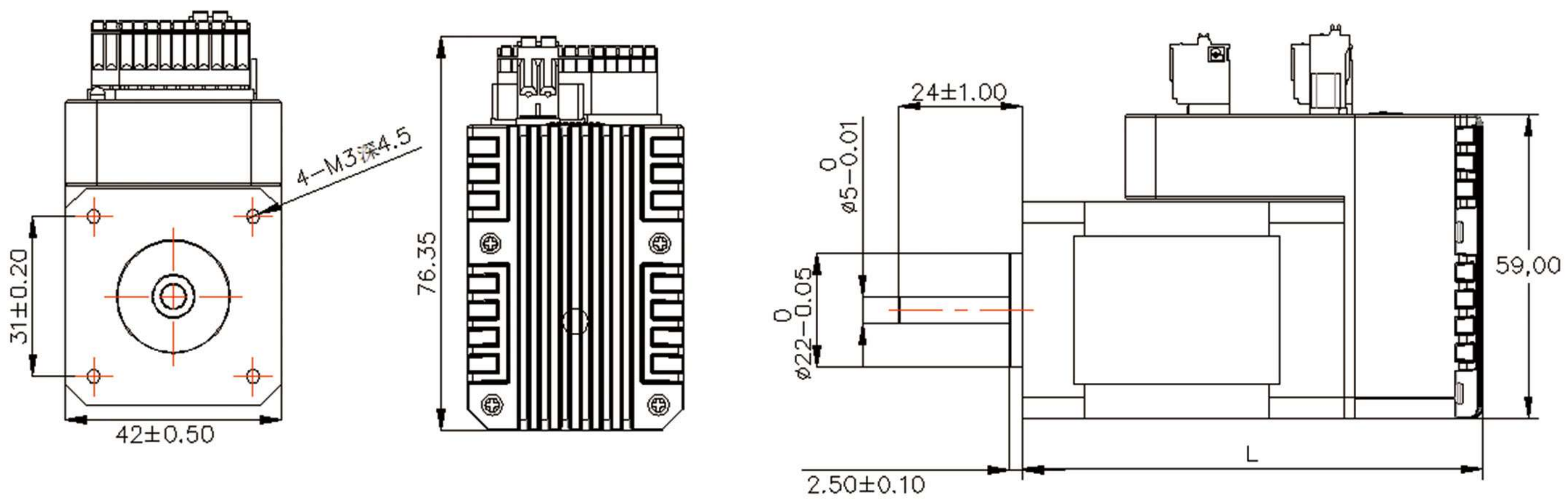
Control signal single-ended common anode connection



Attention:

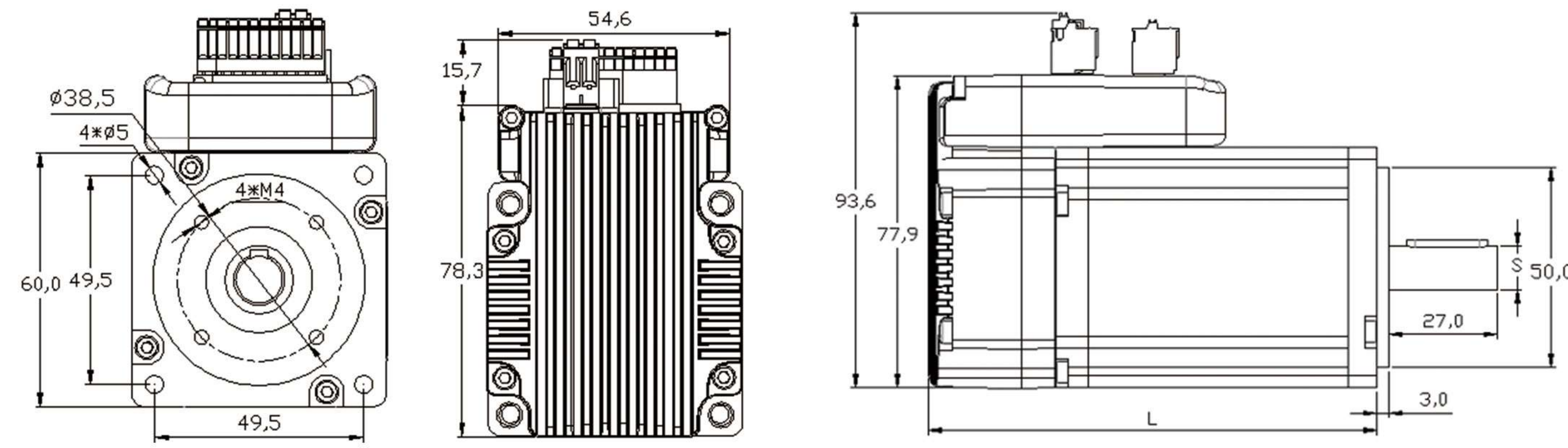
◆ VCC is compatible with 5V~24V.
◆ Resistor R1 is connected to the control signal terminal, and the recommended resistance is 3~5K (power 0.5W and above).
◆ When VCC is 24V, the recommended resistance R2 is 1~1.5k(power 0.5W and above); when VCC is 5V, the resistance is not connected.

Installation size (unit: mm)



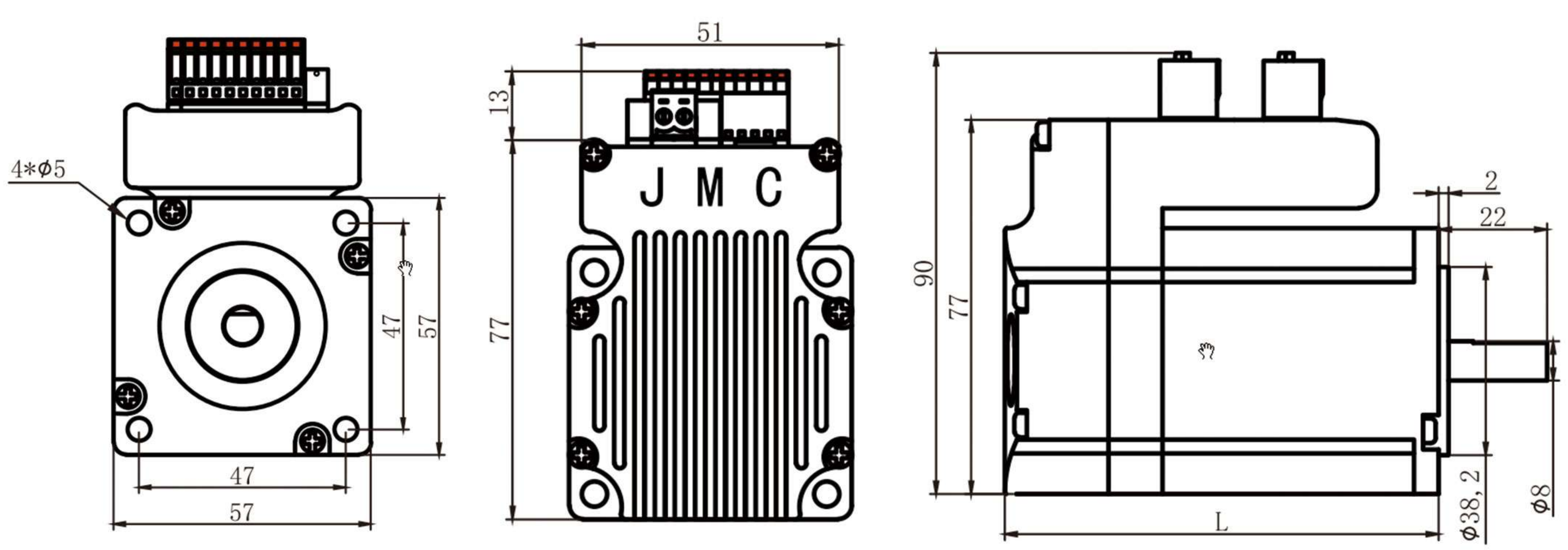
iHSV42-XX mounting size

Model	Length L (mm)	Shaft length (mm)
iHSV42-40-05-24-XXX	84	24
iHSV42-40-07-24-XXX	110	



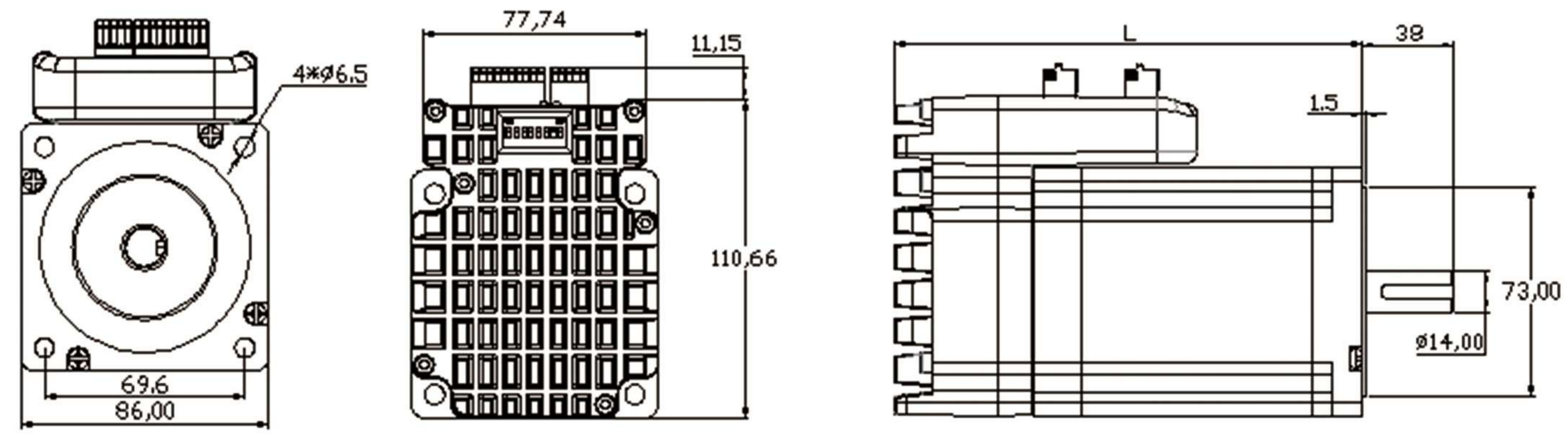
iHSV60-XX mounting size

Model	Length L (mm)	Shaft diameter S(mm)	Shaft length (mm)
iHSV60-30-20-36-XXX	112	11	30
iHSV60-30-20-36-03-XXX	112	14	
iHSV60-30-40-48-XXX	142	14	



iHSV57-XX mounting size

Model	Length L (mm)	Shaft length (mm)
iHSV57-30-10-36-01-T-33-XXX	110	33
iHSV57-30-14-36-01-T-33-XXX	130	
iHSV57-30-18-36-01-T-33-XXX	150	



iHSV86-XX mounting size

Model	Length L (mm)	Shaft length (mm)
iHSV86-30-44-48-XXX	162	38
iHSV86-30-66-72-XXX	189	

Integrated AC Servo Drive Motor

Servo Description

iESV 57 - 30 - 14 - 36 - SC - XXX
① ② ③ ④ ⑤ ⑥ ⑦

No.	Name	Description
①	Product	iESV: Integrated bottom wiring AC servo drive motor
②	Available Frame Size	#42mm; #57mm; #60mm; #86mm
③	Speed	30: 3000rpm; 40: 4000rpm
④	Available Rated Power	Rated power140W, Multiply by 10 is the motor rated power
⑤	Rated power supply voltage	24: 24VDC; 36: 36VDC; 48: 48VDC; 72: 72VDC
⑥	Brake	SC: Motor with brake; Default without brake
⑦	XXX	Product design serial number

EtherCAT/CANopen/RS485

iESV 57 - 30 - 14 - 36 - RC
① ② ③ ④ ⑤ ⑥

⑥: RC : RS485 + CANopen; EC: EtherCAT

EtherCAT CANopen Modbus

summarize

- ◆ Multiple pulse input modes
  Pulse + direction
- ◆ Type-C interface can be connected to PC for parameter modification, etc.
- ◆ User can select subdivision through external dial switch or customize subdivision through software
- ◆ Overcurrent, overload, undervoltage, overspeed, over-differential protection
- ◆ indicator light green indicates operation, red indicates protection or offline

Model Specifications

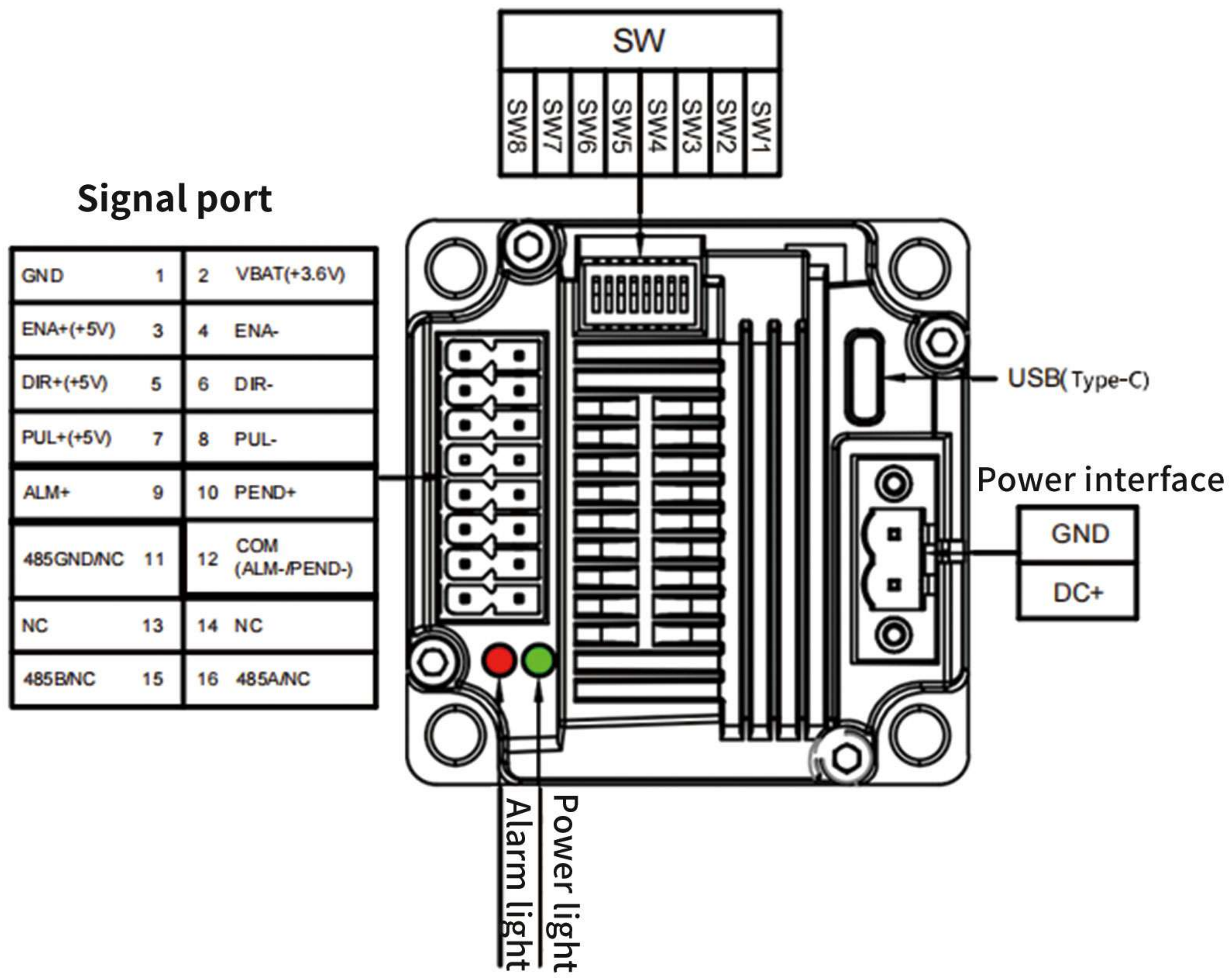
Model: IESV	IESV-57			IESV-60	
Power	100W	140W	180W	200W	400W
Continuous Output Current	3.5Arms	5.4Arms	7.5Arms	8.5Arms	11.2Arms
Input power	36VDC	36VDC	36VDC	36VDC	48VDC

Control mode		Single-phase full-wave rectification IGBT PWM control sine wave current drive mode
Feedback		Absolute encoder
Service conditions	Temperature	Working temperature: 0 ~ 55°C Storage: -25~85°C
	Humidity	Work: 10%~ 90%
	Altitude	<1000m, higher than 1000 m, should be used in accordance with GB/T 3859.2-93 derating
	Protection level	Protection class: IP10 Cleanliness: 2 No corrosive gas, flammable gas, oil, water splash, dust, salt and metal powder less environment
Performance	Speed adjustment range	1:6000
	The steady fast precision	±0.01%: external load variation 0~100% ±0.01%: ±10% power input variation (220V) ±0.1%: Ambient ±25°C (25°C)
	Velocity response frequency	2000Hz
	Torque control accuracy	±5%
Input and output signals	Input signal	Points: 3 Function:pulse signal input,direction signal input, enable signal input
	Output signal	Points: 2 Function: alarm output,position arrival output signal
Communication function	RS485	Support MODBUS protocol Axis address: set by parameters
	Type-C USB	Connect PC for debugging, USB communication
Defensive function		Overvoltage, undervoltage, overcurrent, overload, etc

Installation and use environment

- ◆ Working environment temperature: 0~55°C; working environment humidity:10%~9 0% (no condensation).
- ◆ Storage environment: -20°C~+85°C; storage environment humidity:below 90% (no condensation).

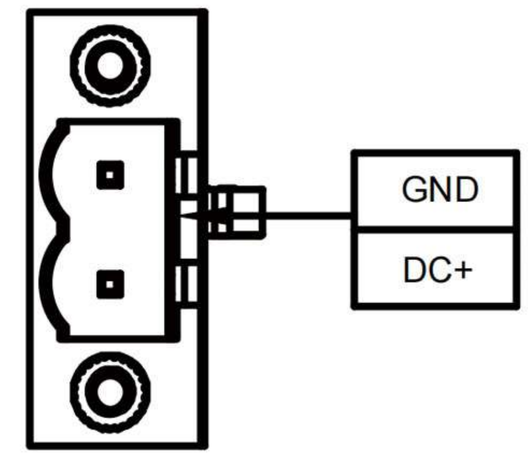
System interface



Model Port Description

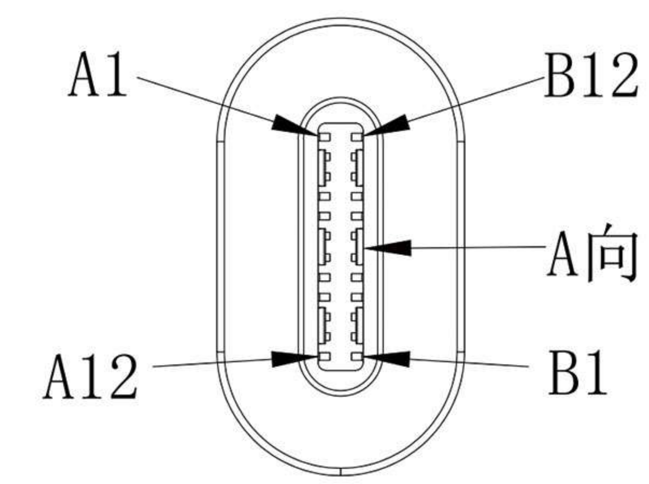
Symbol	Definition	Explain	Symbol	Definition	Explain
GND	Land	Battery ground	VBAT	Battery positive	Encoder positive with battery
ENA+	Enable signal positive	This input signal is used to enable or disableIt can also be used to clear alarm signals	ENA-	Enable signal negative	--
DIR+	Bearing signal positive	Direction signal: ensure reliable commutation of motor, direction signal should be at least 6us with pulse signal	DIR-	Direction signal negative	--
PUL+	Pulse signal positive	Pulse signal: pulse rising edge effective, pulse width should be greater than 2.5us	PUL-	Pulse signal negative	--
ALM+	Alarm output positive	Output signal when driver alarm occurs	PEND+	Position output positive	Position arrival output signal
485GND/ NC	485 Signal GND or Reserved	485 signal ground	COM (ALM-/ PEND-)	Common end/ Alarm output negative/bit output negative	Alarm, in place output common terminal negative
NC	Retain	--	NC	Retain	--
485B/NC	485B signal or reservation	485 signal negative	485A/NC	485A signal or reservation	485 signal positive

Drive Power Port Description



Grade	Explain
DC+	20-50VDC
GND	Input power ground

USB debug interface wiring diagram

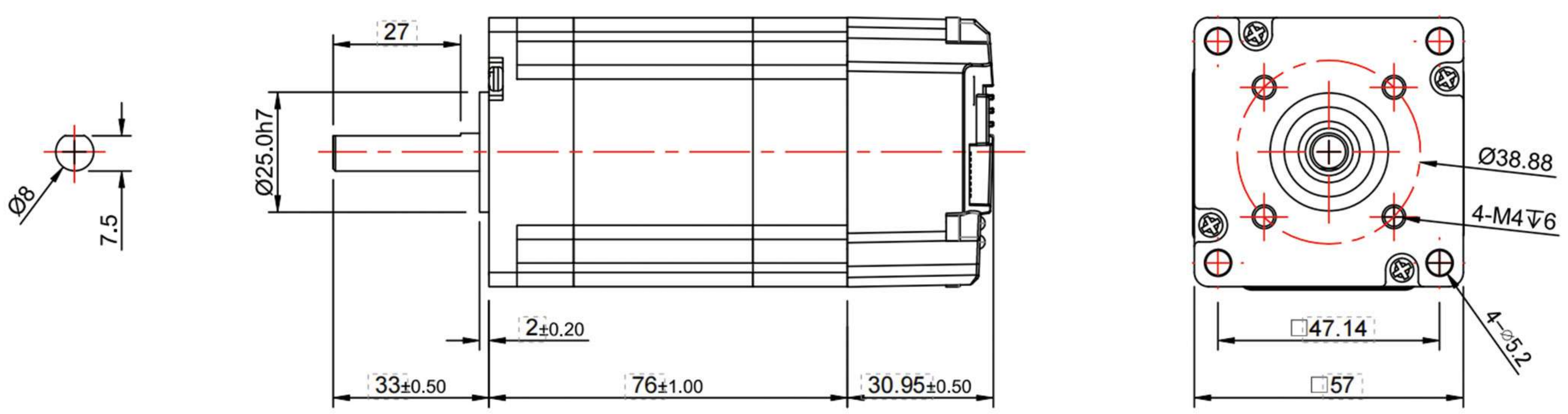


Note: CN5 is a standard Type-C USB interface, and the port uses a standard Type-C USB cable to connect with the host computer.

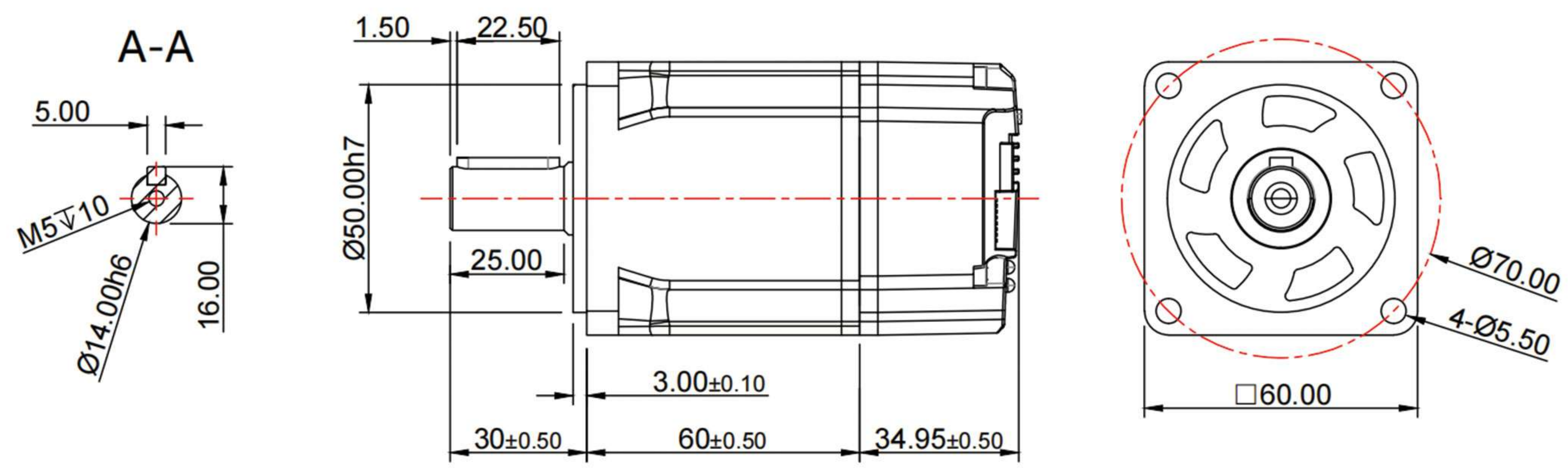
Pin number	Grade	Explain	Grade	Definition Description	Explain
A1	GND	Land	B12	GND	Land
A2	TX1+	Not have	B11	RX1+	Not have
A3	TX1-	Not have	B10	RX1-	Not have
A4	VBUS	+5V power supply	B9	VBUS	+5V power supply
A5	CC1	Not have	B8	SBU2	Not have
A6	D+	Data transmission positive	B7	D-	Data transmission positive
A7	D-	Data transmission negative	B6	D+	Data transmission negative
A8	SBU1	Not have	B5	CC2	Not have
A9	VBUS	+5V power supply	B4	VBUS	+5V power supply
A10	RX2-	Not have	B3	TX2-	Not have
A11	RX2+	Not have	B2	TX2+	Not have
A12	GND	Land	B1	GND	Land

Installation size

Installation size



IESV57 -30-10-36-17BC mounting size



IESV60 -30-20-36-17BCZ mounting size

Products display

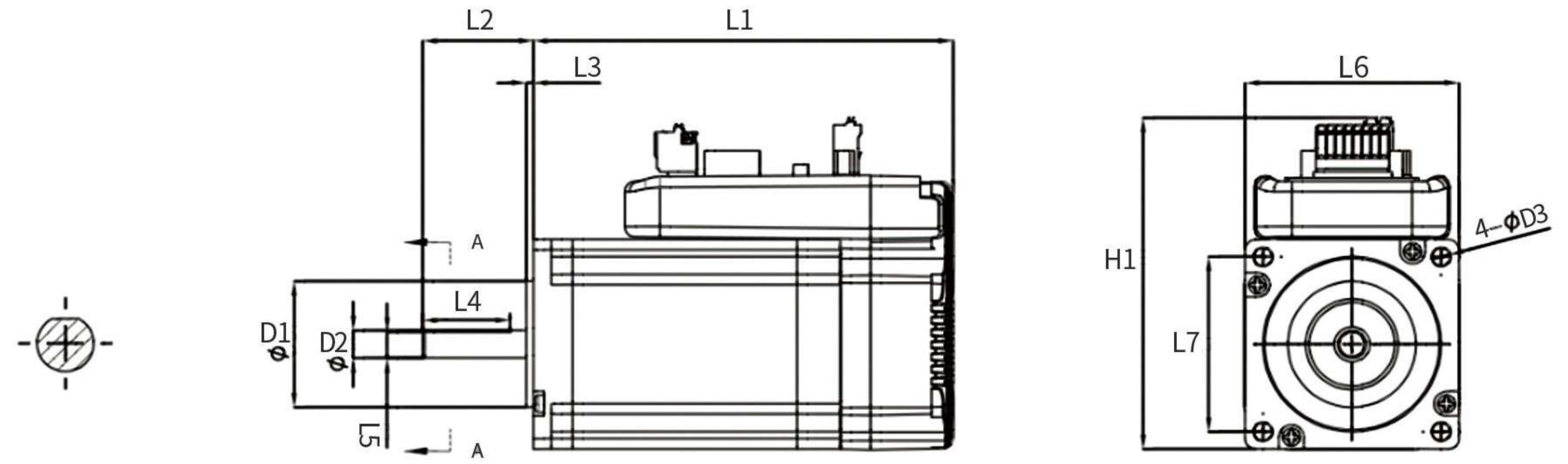



EtherCAT/CANopen/RS485

Quick selection table

	Model	Communication mode	Power supply voltage	Rated torque	Output current	Motor base
	iHSV57-30-14-36-R	RS485	24~48VDC Typical：36VDC	0.44N·M	Digital input：Current：6~16mA Voltage：5~24VDC Digital output：Current：0~50mA Voltage：0~30VDC	57mm
	iHSV57-30-14-36-RC	RS485+CAN				
	iHSV57-30-14-36-EC	EtherCAT				
	iHSV57-30-18-36-R	RS485		0.6N·M		
	iHSV57-30-18-36-RC	RS485+CAN				
	iHSV57-30-18-36-EC	EtherCAT				
	iHSV60-30-20-48-R	RS485	36~80VDC Typical：48VDC	0.64N·M		60mm
	iHSV60-30-20-48-RC	RS485+CAN				
	iHSV60-30-20-48-EC	EtherCAT				
	iHSV60-30-40-48-R	RS485		1.27N·M		
	iHSV60-30-40-48-RC	RS485+CAN				
	iHSV60-30-40-48-EC	EtherCAT				
	iHSV86-30-44-72-R	RS485	48~100VDC Typical：72VDC	1.4N·M		886mm
	iHSV86-30-44-72-RC	RS485+CAN				
	iHSV86-30-44-72-EC	EtherCAT				
	iHSV86-30-66-72-R	RS485		2.1N·M		
	iHSV86-30-66-72-RC	RS485+CAN				
	iHSV86-30-66-72-EC	EtherCAT				

Driver Dimensions

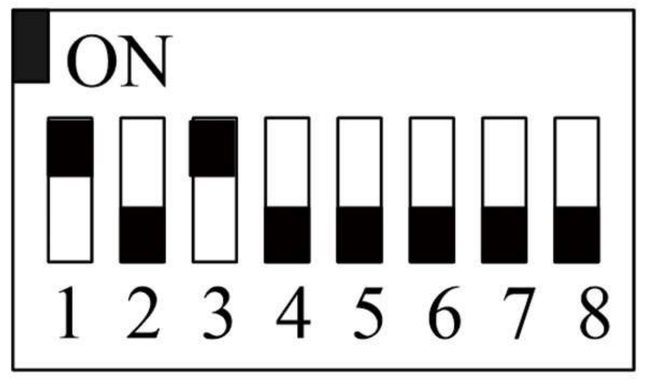


Model	L1(mm)	L2(mm)	L6(mm)	L7(mm)	D1(mm)	D2(mm)	H1(mm)
iHSV57-30-14-36-R/RC/EC	127.8	33.0	57.0	47.1	25.0	8	90.0
iHSV57-30-18-36-R/RC/EC	148.0	33.0	57.0	47.1	25.0	8	90.0
iHSV60-30-20-48-R/RC/EC	110.0	30.0	60.0	49.5	50.0	11	92.2
iHSV60-30-40-48-R/RC/EC	141.5	30.0	60.0	49.5	50.0	14	92.2
iHSV86-30-44-72-R/RC/EC	158.0	38.0	86.0	69.6	73.0	14	121.8
iHSV86-30-66-72-R/RC/EC	186.0	38.0	86.0	69.6	73.0	14	121.8

Note: Standard 57/60 frame motor shaft is flat, without key. There are two types of shafts for 86-frame motors: flat and with key. Please contact us for detailed shaft dimensions.

Dial switch setting instructions

Dialing subdivision settings



The subdivision settings are shown in the table below. When SW1, SW2, SW3 and SW4 are all set to on, the user-defined subdivision is valid. This value can be set by our servo software.

Dial switch / Subdivide	SW1	SW2	SW3	SW4
Default	on	on	on	on
800	off	on	on	on
1600	on	off	on	on
3200	off	off	on	on
6400	on	on	off	on
12800	off	on	off	on
25600	on	off	off	on
51200	off	off	off	on
1000	on	on	on	off
2000	off	on	on	off
4000	on	off	on	off
5000	off	off	on	off
8000	on	on	off	off
10000	off	on	off	off
20000	on	off	off	off
40000	off	off	off	off

Input edge setting

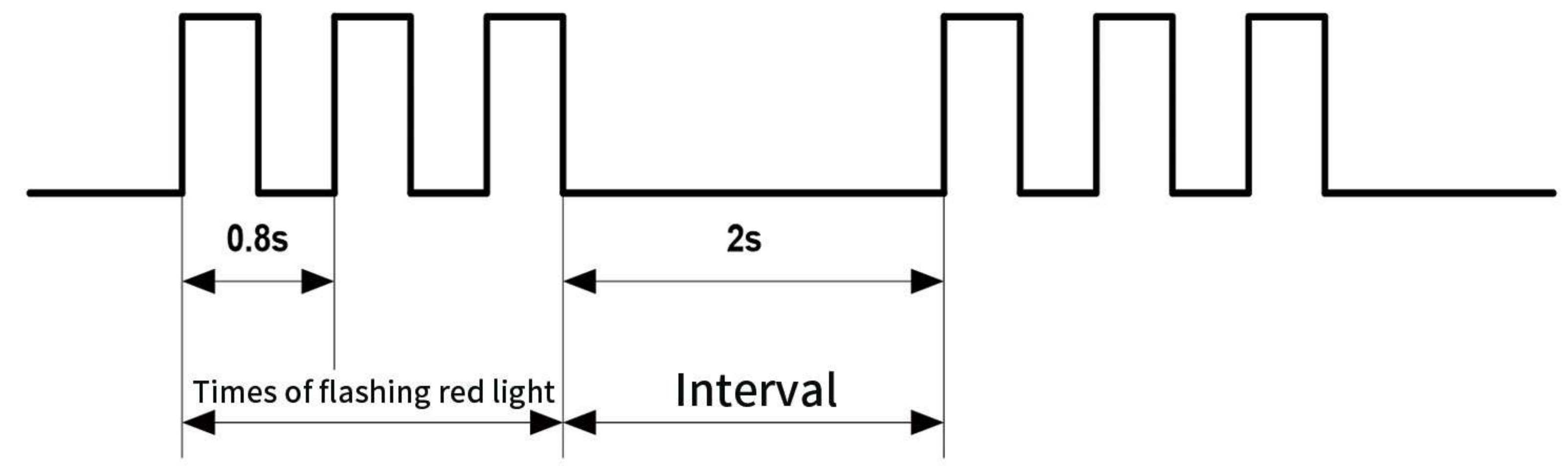
SW5 Dial switch sets input edge, off means rising edge is valid, on means falling edge is valid.

logical direction setting

SW6 When the dial switch is switched off or on, the current motor movement direction can be changed, off=CCW (forward rotation), on=CW (reverse rotation).

Common problems and fault analysis

Alarm lights flashing times corresponding to alarm and processing methods



Red Flashing Times	Alarm instructions	Treatment measure
2	Driver overcurrent	Is there a short circuit in the UVW wire of the motor
3	Drive position deviation exceeds set point	Check whether the driver "position deviation" parameter is set correctly
4	Driver Encoder Alarm	Check whether the encoder wire is connected properly
7	Driver overload	Check whether the UVW wire of the motor is connected to each other
10	Other alarm	Connect computer to read specific alarm code, check and handle according to alarm description

1.The power lamp does not light up

◆ Check whether the power supply has input and whether the wiring is connected correctly.
◆ Input voltage is too low.
◆ Input voltage is too high, servo drive motor will burn out.

2.The power lamp does not light up

◆ Servo drive motor input power voltage is too high or too low.
◆ Whether there is pulse input all the time before the servo drive motor is powered on, resulting in an over-tolerance alarm.

3.Red light alarm after running for a small angle

◆ In the servo drive motor configuration parameters, whether the number of pole pairs of the motor and the number of lines of the encoder match (the number of pole pairs is 4, and the number of lines of the encoder is 1000).
◆ Whether the pulse input speed is greater than the rated speed of the motor, the position is out of tolerance.

4.No rotation after pulse input

◆ Servo drive motor pulse input terminal wiring is reliable.
◆ Whether the servo drive motor is enabled to release, and whether the enable signal is input.
◆ Electronic gear ratio is set too high.