

DC SERVO



旭隆科技（东莞）有限公司
Xulong Technology(Dongguan)Co.,
[Http://www.xulongk.cn](http://www.xulongk.cn)
[Http://www.xulongk.com](http://www.xulongk.com)
E-mail:xulongk@yeah.net

Room 802, No.32 Yucai Road, Nancheng Street, Dongguan
City, Guangdong Province,China
Tel : 0769-23028839
Mobil: +86-13925507910
WeChat:13925507910



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DC Servo Drive

The low-voltage DC servo driver is developed with high-performance processor to provide users with a cost-effective solution. On the premise of ensuring stability and reliability, it pursues the function and performance closest to the application. Compared with stepping products, it has low noise, low heating, high speed, constant torque output and no step loss; Compared with closed-loop stepping products, it completely abandons the inherent disadvantages of stepping products, and has better function, performance and reliability; Compared with foreign well-known servo, it has close performance, affordable price, easy to use and high security. The low-voltage DC servo driver has the advantages of small volume, simple installation and convenient debugging. It can adapt to various motors only by modifying the parameters such as motor angle, pole number and encoder line number. It is called universal servo driver by many customers.

Application characteristics

- ※ Working Voltage: 24~80VDC
- ※ Output Current: Peak value 10~50A
- ※ Adaptive motor: 5~1500W Various low voltage DC servo motors
- ※ Control mode: External Pulse (Single ended / Differential), Analog quantity, CAN bus, RS485 bus, RS232 communication control, IO control, etc., Supporting position, Speed and Torque modes
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and backup and import parameters
- ※ Protection function: It has alarm functions such as undervoltage, overvoltage, overload, overcurrent, excessive position deviation, encoder abnormality, etc
- ※ Built in acceleration and deceleration, smooth operation when starting and stopping
- ※ It supports torque reset without origin, and can customize the packaging control function
- ※ Accept OEM / ODM customization



Low voltage DC servo driver IDS306

IDS306 Low-Voltage DC servo driver is developed with high-performance processor to provide users with a cost-effective servo control solution. On the premise of ensuring stability and reliability, it pursues the function and performance closest to the application. Compared with stepping products, it has low noise, low heating, high speed, constant torque output and no step loss; Compared with stepping servo products, it completely abandons the inherent disadvantages of stepping products, and has better function, performance and reliability; Compared with foreign well-known servo, it has close performance, low price and easy to use. Ids306 is compact and powerful. It is especially suitable for applications with high-performance sports requirements and narrow installation space. It can be customized according to needs. It is a cost-effective servo drive scheme.

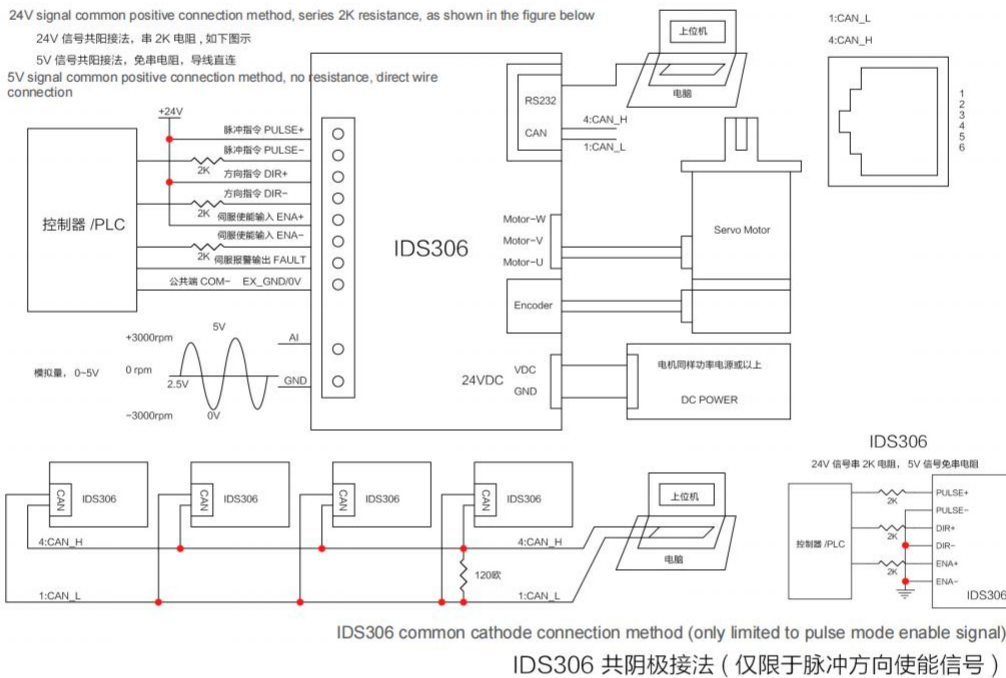
Application Characteristics

- ※ Working Voltage: 24VDC
- ※ Output Current: Peak Value 10A
- ※ Adaptive motor: 5~100W Low voltage DC servo motor, Brushless DC motor with encoder or Hollow cup motor
- ※ Control mode: external pulse (Single ended / Differential), Analog quantity, CAN bus, RS232 communication control, IO control, etc., supporting position, speed and torque modes \
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and backup and import parameters
- ※ Protection function: It has alarm functions such as undervoltage, overvoltage, overload, overcurrent, excessive position deviation, encoder abnormality, etc
- ※ Tracking Error: ± 1 pulse
- ※ Speed control accuracy: ± 1 PRM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed:1RPM
- ※ Maximum no-load acceleration: 200PRM/ms

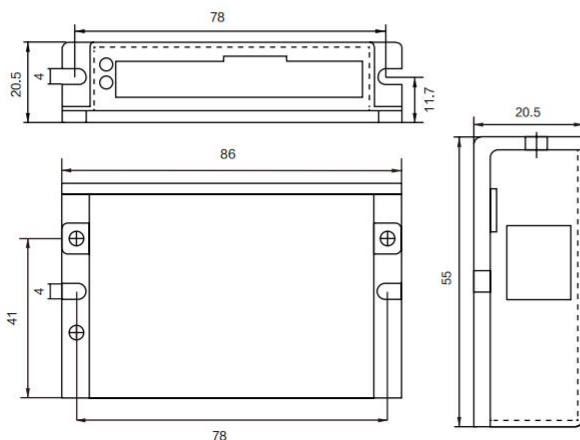
Selection List

Model	Peak current (A)	Voltage (VDC)	Adaptive motor	Dimension (mm)	Control Mode
IDS306	10	24	Low voltage DC servo motor Brushless DC motor with encoder Hollow cup servo motor (100W and below)	86*55*20.5	Pulse (single ended / differential), Analog quantity, CAN bus RS232、IO

Wiring Diagram



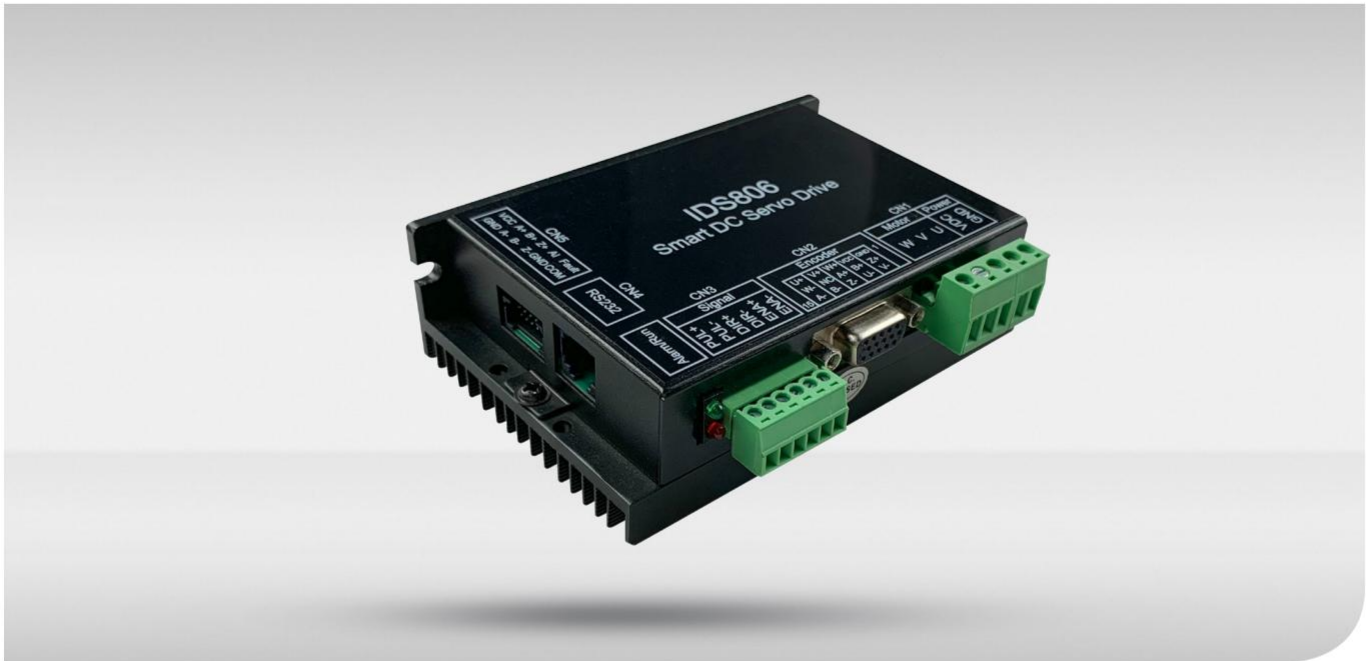
Appearance Dimension



Note: when the shell is not installed, the volume can be smaller

Interface diagram





Low voltage DC servo driver IDS806

IDS806 Low-Voltage DC servo driver is developed with high-performance processor to provide users with a cost-effective servo control solution. On the premise of ensuring stability and reliability, it pursues the function and performance closest to the application. Compared with stepping products, it has the advantages of low noise, low heating, high speed, constant torque output and no step loss; Compared with stepping servo products, it completely abandons the inherent disadvantages of stepping products, and has better function, performance and reliability; Compared with the well-known foreign servo, it has similar performance, affordable and easy to use. Ids806 is a classic Low-Voltage DC servo drive scheme. It has high cost performance and high reliability. It can be customized according to requirements. It is suitable for applications requiring high cost.

Application characteristics

- ※ Working Voltage: 24-60VDC
- ※ Output Current: Peak Value 20A
- ※ Applicable motor: 5-600w low-voltage DC servo motor, brushless DC motor with encoder or hollow cup motor.
- ※ Control mode: external pulse (single ended / differential), analog quantity, RS232 communication control, IO control, etc., supporting position, speed and torque modes
- ※ Parameter debugging: RS232 communication, PC debugging software or handheld debugger debugging, backup or import parameters.
- ※ Abnormal protection: it has the alarm functions of undervoltage, overvoltage, overload, overcurrent, excessive position deviation, encoder abnormality, etc
- ※ Tracking error: ± 1 pulse
- ※ Speed control accuracy: ± 1 PRM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed: 1RPM
- ※ Maximum no load speed: 200PRM/ms

Model selection list

Model	Peak current (A)	Voltage (VDC)	Adapter motor	Size (mm)	Control mode
IDS806	20	24-60	Low voltage DC servo motor Brushless DC motor with encoder Hollow cup servo motor (600W with below)	118*75.5*34	Pulse (Single ended / Differential) Analog quantity, RS232、IO

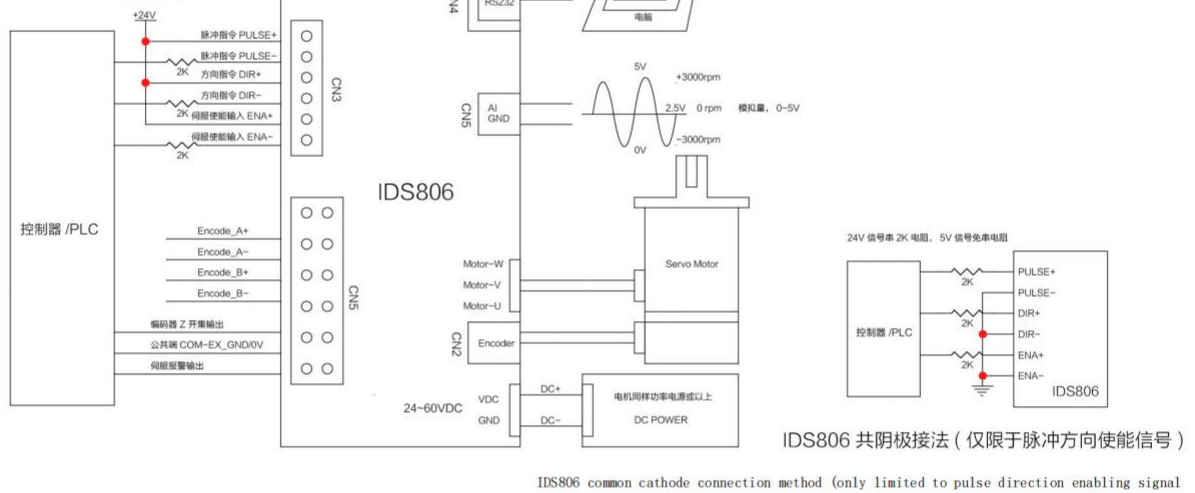
Wiring diagram

24V signal common positive connection method, series 2K resistance, as shown in the figure below

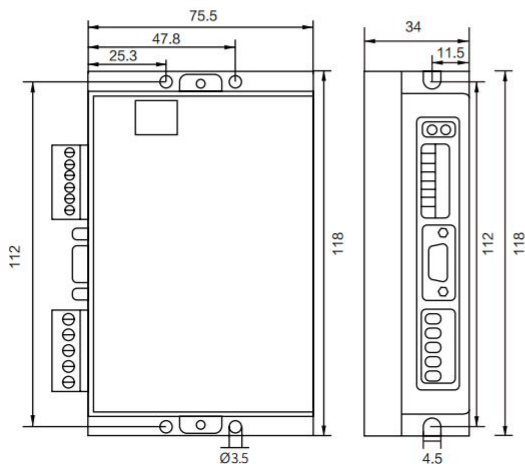
5V signal common positive connection method, no series resistance, direct connection of wires

24V 信号共阳接法, 串 2K 电阻, 如下图示

5V 信号共阳接法, 免串电阻, 导线直连



Dimension



Wiring terminal diagram





Low voltage DC servo driver IDS830

IDS830 Low-Voltage DC servo driver is developed with high-performance processor to provide users with a cost-effective servo control solution. On the premise of ensuring stability and reliability, it pursues the function and performance closest to the application. Compared with stepping products, it has the advantages of low noise, low heating, high speed, constant torque output and no step loss; Compared with stepping servo products, it completely abandons the inherent disadvantages of stepping products, and has better function, performance and reliability; Compared with foreign well-known servo, it has similar performance, low price and easy to use. IDS830 is the function and power enhanced version of IDS806, with high cost performance and reliability. It is suitable for applications with various control modes.

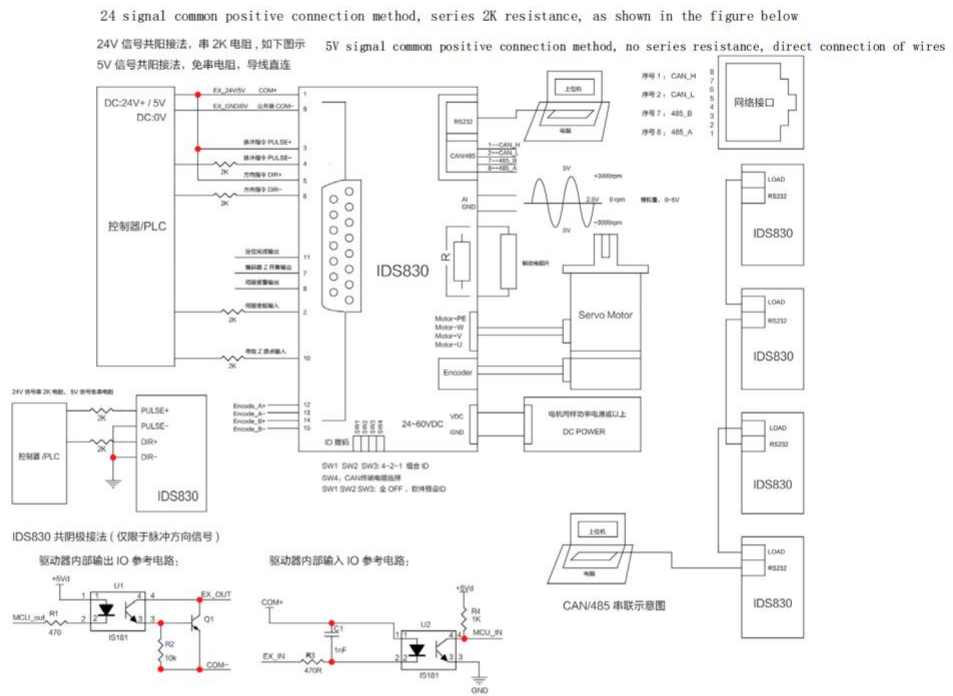
Application characteristics

- ※ Working Voltage: 24~60VDC
- ※ Output current: Peak value:30A
- ※ Adaptive motor: 5~750W Low Voltage DC servo motor
- ※ Control mode: External Pulse (Single ended / Differential), CAN bus, RS485 bus, RS232 communication control, I/O control, etc., Supporting Position, Speed and Torque modes
- ※ Safety protection: It has alarm functions such as Undervoltage, Overvoltage, Overload, Overcurrent, Excessive position deviation, Encoder abnormality, etc.
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and Backup and Import parameters.
- ※ Support energy consumption relief function.
- ※ Tracking Error: ± 1 pulse
- ※ Speed control accuracy: ± 1 PRM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed:1RPM
- ※ Maximum no-load acceleration: 200PRM/ms

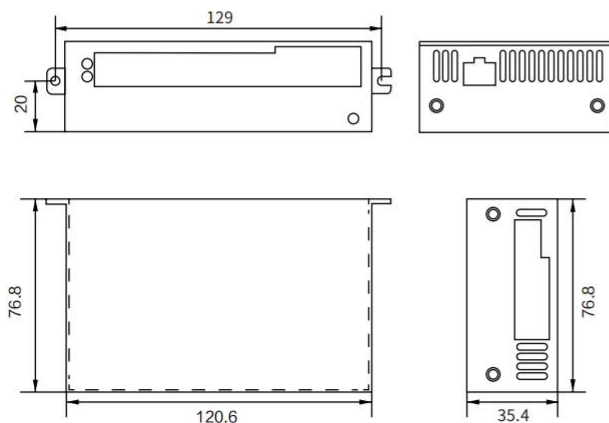
Model selection list

Model	Peak current (A)	Voltage (VDC)	Adapter motor	Dimension (mm)	Control mode
IDS830	30	24~60	Low voltage DC servo motor (750W and below)	120.6*76.8*35.4	Pulse (Single ended / Differential), Analog Control, CAN bus, RS485 bus, RS232, IO

Wiring diagram



Dimension



Wiring terminal diagram





Low Voltage DC servo driver **IDS850**

IDS850 Low-Voltage DC servo driver is developed with high-performance processor to provide users with a cost-effective servo control solution. On the premise of ensuring stability and reliability, it pursues the function and performance closest to the application. Compared with stepping products, it has the advantages of low noise, low heating, high speed, constant torque output and no step loss; Compared with stepping servo products, it completely abandons the inherent disadvantages of stepping products, and has better function, performance and reliability; Compared with foreign well-known servo, it has similar performance, low price and easy to use. IDS850 is the power amplification version of IDS830, with stronger load capacity and reliability. It is suitable for heavy load applications.

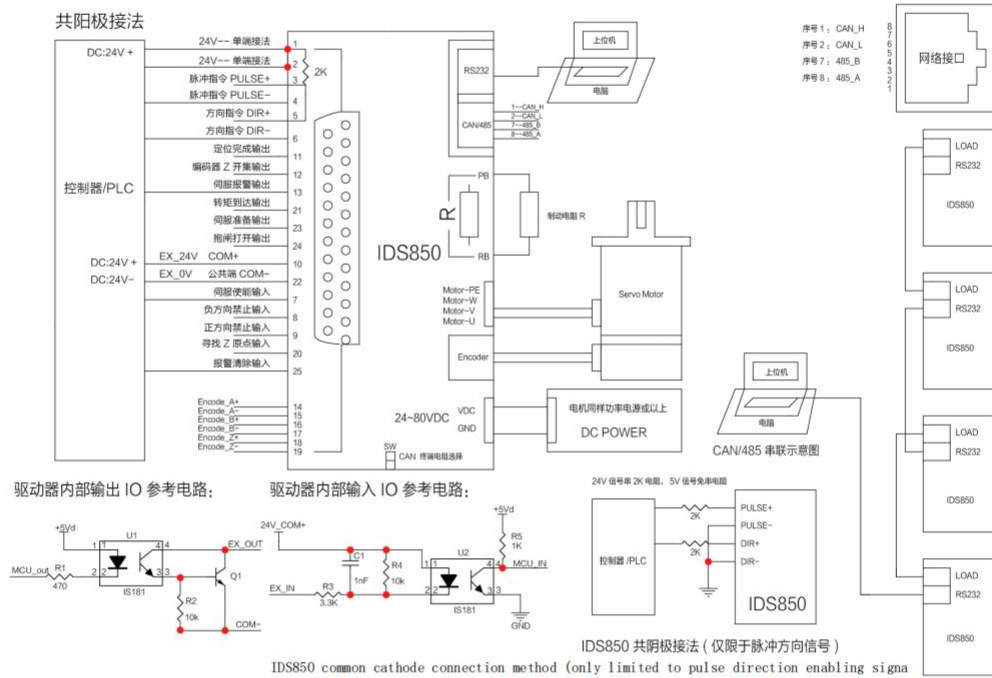
Application characteristics

- ※ Working Voltage: 24~80VDC
- ※ Output current: Peak value 50A
- ※ Adaptive motor: 5~1500W Low Voltage DC servo motor
- ※ Control mode: External Pulse (Single ended / Differential), CAN bus, RS485 bus, RS232 communication control, I/O control, etc., Supporting Position, Speed and Torque modes.
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and Backup and Import parameters
- ※ Safety protection: It has alarm functions such as Undervoltage, Overvoltage, Overload, Overcurrent, Excessive position deviation, Encoder abnormality, etc
- ※ Support energy consumption relief function
- ※ Tracking Error: ± 1 pulse
- ※ Speed control accuracy: ± 1 PRM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed: 1RPM
- ※ Maximum no-load acceleration: 200PRM/ms

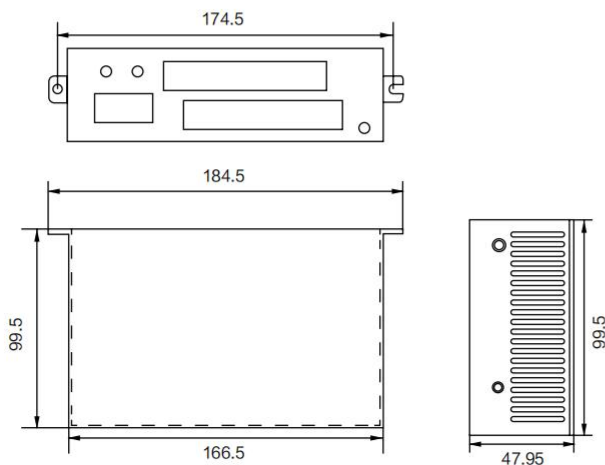
Model selection list

Model	Peak current (A)	Voltage (VDC)	Adapter motor	Dimension (mm)	Control mode
IDS850	50	24~80	Low voltage DC servo motor (1500W and below)	166.5*99.5*47.95	Pulse (Single ended / Differential), Analog Control, CAN bus, RS485 bus, RS232, IO

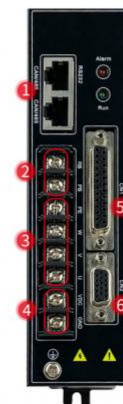
Wiring diagram



Dimension



Wiring terminal diagram



- 1 通讯接口
Communication interface
- 2 制动电阻接口
Braking resistance
- 3 动力线接口
Power line interface
- 4 电源接口
Power interface
- 5 控制信号 I/O 接口
Control signal I/O interface
- 6 编码器输入接口
Encoder input interface



Low Voltage DC servo driver IDS630

IDS630 low-voltage DC servo driver is developed with high-performance processor to provide users with a cost-effective servo control solution. On the premise of ensuring stability and reliability, it pursues the function and performance closest to the application. Compared with stepping products, it has the advantages of low noise, low heating, high speed, constant torque output and no step loss; Compared with stepping servo products, it completely abandons the inherent disadvantages of stepping products, and has better function, performance and reliability; Compared with foreign well-known servo, it has similar performance, low price and easy to use. IDS630 is a cost-effective DC servo driver specially designed for the logistics sorting industry.

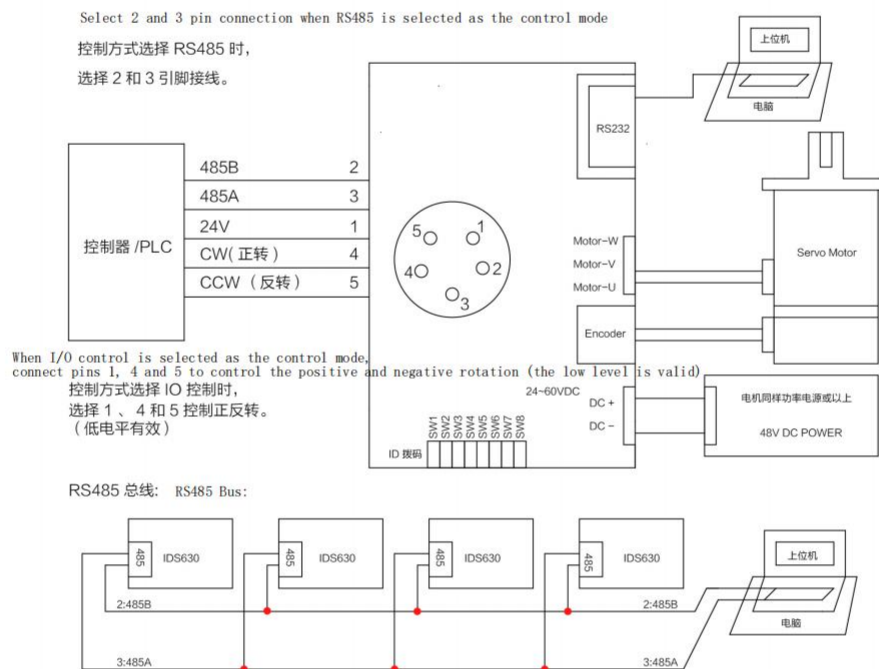
Application characteristics

- ※ Working Voltage: 24-60VDC
- ※ Output current: Peak value 30A
- ※ Adaptive motor: 5-750W Servo drum motor
- ※ Control mode: CAN Bus、RS485 总Bus、RS232 communication control, I/O control, etc.
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and Backup and Import parameters
- ※ Safety protection: It has alarm functions such as Undervoltage, Overvoltage, Overload, Overcurrent, Excessive position deviation, Encoder abnormality, etc
- ※ Support energy consumption relief function
- ※ Tracking Error: ± 1 pulse
- ※ Speed control accuracy: ± 1 PRM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed: 1RPM
- ※ Maximum no-load acceleration: 200PRM/ms

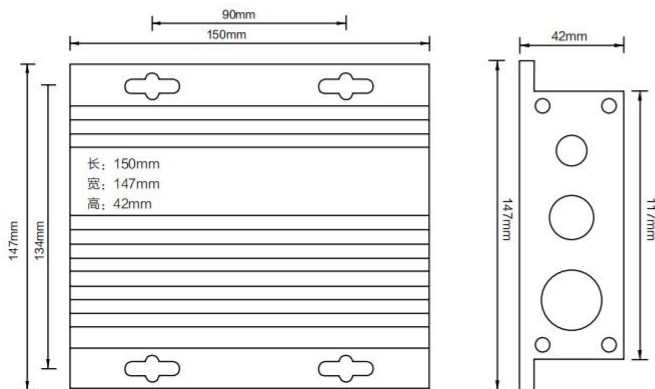
Model selection list

Model	Peak current (A)	Voltage (VDC)	Adapter motor	Dimension (mm)	Control mode
IDS630	30	24~60	DC servo drum motor (750W and below)	166.5*99.5*47.95	CAN Bus、RS485 Bus RS232、IO

Wiring diagram



Dimension



Wiring terminal diagram



- ① RS232通讯接口
Communication interface RS232
- ② RS485/CAN接口
Communication interface RS485/CAN
- ③ 电源接口
Power interface
- ④ 电机动力线接口
Power line interface
- ⑤ 编码器输入接口
Encoder input interface
- ⑥ ID拨码设置
ID dialing settings

IDS306/IDS806 Communication interface

RS232 Adapte RJ11 Interface

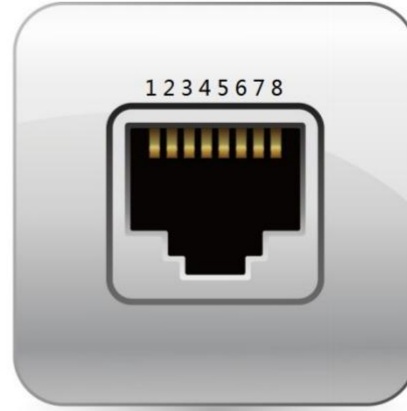


RS232 Interface definition

RJ11	DB9	Remarks
5-RXD	DB-2	External computer serial port
2-TXD	DB-3	External computer serial port
3-GND	DB-5	GND
6-5V	DB-9	Drive external supply +5v output, Max 100mA

IDS830/IDS850 Communication interface

RS232 Adapte RJ45 Interface



RS232 Interface definition

Port No.	DB9 No.	Remark
3-RXD	DB-2	External computer serial port
4-TXD	DB-3	External computer serial port
6-GND	DB-5	GND
5-5V	DB-9	Drive external supply +5v output, Max 100mA

CAN Bus Interface definition

RJ11	Name	Remark
1	CAN_H	CAN Bus H
2	CAN_L	CAN Bus L

CAN/RS485 Bus Interface definition

Number	Name	Remark
1	CAN_H	CAN Bus H
2	CAN_L	CAN Bus L
7	RS485B	485 Bus B
8	RS485A	485 Bus A

Note: The resistance dial selection switch of CAN communication terminal is at the driver side, and the resistance is enabled when on.

Servo driver interface definition

Power / Motor interface

Marking	Name	Remark
GND	Input power-	DC24-80V (See the voltage requirements of specific models for details)
VDC	Input power+	
U	Power line U phase (Black)	It must be connected to the motor one by one according to the mark
V	Power line V phase (Red)	
W	Power line W phase (Blue)	
PE	GND	
R (PB/RB)	Braking resistance	External braking resistance Conventional 200-300w, 5Ω

IDS806 IDS830 IDS850 IDS630 Encoder interface

No.	Marking	No.	Marking
1	GND	7	B+
2	VCC	8	A+
3	W+	13	Z-
4	V+	14	B-
5	U+	15	A-
6	Z+		

IDS306 Encoder interface

No.	Marking	No.	Marking
1	A+	7	A-
2	B+	8	B-
3	Z+	9	Z-
4	W+	10	VCC
5	V+	11	GND
6	U+	12	GND

IDS306 Control signal I/O interface

No.	Marking	Remark	
1	PUL+	Pulse signal: the rising edge of the pulse is effective. It is 4-5v at high level and 0-0.5v at low level. The pulse width should be greater than 1.6us. If 12V or 24V is used, a 1.5-2.2k resistor must be connected in series	
2	PUL-		
3	DIR+	方Direction signal: reverse when high level is input between DIR+ and DIR-, and reverse when high level is input. The direction signal shall be established at least 5us before the pulse signal, 4-5V at high level and 0-0.5V at low level. If 12V or 24V is used, 1.5-2.2k resistor must be connected in series	
4	DIR-		
5	ENA+	Enable signal: this signal is used to enable or disable the servo motor. High level between ENA+ and ENA- will cut off the power supply of the motor, so that the motor will not respond to the pulse in a free state. Low level enabling motor between ENA+ and ENA- must be connected with 1.5-2.2K resistance if 12V or 24V is used	
6	ENA-		
7	Fault	Alarm input terminal of external controller	
8	COM	Controller common	
9	Ai	Input voltage 0-5V	
10	GND	GND	

IDS806 Control signal I/O interface

No.	Marking	Remark	备注
1	PUL+	Pulse signal: the rising edge of the pulse is effective. It is 4-5v at high level and 0-0.5v at low level. The pulse width should be greater than 1.6us. If 12V or 24V is used, a 1.5-2.2k resistor must be connected in series	
2	PUL-		
3	DIR+	方Direction signal: reverse when high level is input between DIR+ and DIR-, and reverse when high level is input. The direction signal shall be established at least 5us before the pulse signal, 4-5V at high level and 0-0.5V at low level. If 12V or 24V is used, 1.5-2.2k resistor must be connected in series	
4	DIR-		
5	ENA+	Enable signal: this signal is used to enable or disable the servo motor. High level between ENA+ and ENA- will cut off the power supply of the motor, so that the motor will not respond to the pulse in a free state. Low level enabling motor between ENA+ and ENA- must be connected with 1.5-2.2K resistance if 12V or 24V is used	
6	ENA-		

IDS830 Control signal I/O interface

No.	Wiring definitions	Remarks
1	EX_24V	When the PLC is connected externally, the power supply is provided for the input and output common terminal
2	Servo enable input	Used to enable or disable the servo motor. At 0V, the driver will cut off the power supply of the motor, so that the motor is in a free state and does not respond to the pulse
3	PULSE+	Pulse signal: the rising edge of the pulse is effective. It is 4–5v at high level and 0–0.5v at low level. The pulse width should be greater than 1.6us.
4	PULSE-	
5	DIR+	Direction signal: reverse when high level is input between DIR+ and DIR-, and reverse when high level is input. The direction signal shall be established at least 5us before the pulse signal, 4–5V at high level and 0–0.5V at low level.
6	DIR-	
7	Encoder Z open set output	Z signal output
8	Servo alarm output	Alarm output
9	EX_GND/0V	0V/GND
10	Find Z origin input	Find Z origin input
11	Positioning completion output	
12	Encoder Z open set output	Encoder Z signal output
13	A+	A+
14	A-	A-
15	B+	B+
16	B-	B-

IDS850 Control signal I/O interface

No.	Wiring definitions	Remarks
1	Single termination 24V input	Series free 2K resistor
2	Single termination 24V input	Series free 2K resistor
3	PULSE+	Pulse signal: the rising edge of the pulse is effective. It is 4–5v at high level and 0–0.5v at low level. The pulse width should be greater than 1.6us.
4	PULSE-	
5	DIR+	
6	DIR-	
7	Servo enable input	
8	It is forbidden to enter when the direction is "-" Stop in the current direction and run in the opposite direction	
9	It is forbidden to enter when the direction is "+" Stop in the current direction and run in the opposite direction	
10	EX_24V	When the PLC is connected externally, the power supply is provided for the input and output common terminal
11	Positioning completion output	
12	Encoder Z open set output	Z signal output
13	Servo alarm output	Alarm output
14	A+	
15	A-	
16	B+	
17	B-	
18	Z+	
19	Z-	
20	Find Z origin input	
21	Torque reaching output	
22	EX_GND/0V	External power 0V/GND
23	Servo ready output	Drive power on completion output
24	Band brake open output	Output after servo enable
25	Alarm clear input	



Standard DC servo motor

Standard DC servo motor, power range 50–1500w, compatible with the installation size of AC servo motor, and the number of encoder lines 1250 and 2500 can be selected. The servo runs smoothly with outstanding low-speed performance. 1rpm can still run smoothly, and the maximum speed can reach 3800rpm under rated voltage. The servo adopts low-voltage DC 24–72vdc power supply to avoid the impact of large voltage fluctuation or drop on the servo drive circuit, which is conducive to improving the service life of the equipment, closer to the international low-voltage service standard, and higher safety. The servo technology is mature, easy to install and adjust, stable and reliable, and cost-effective.

Application characteristics

- ※ Working voltage: 24–72VDC
- ※ Power: 50~1500W Low voltage DC servo motor
- ※ Rated speed: 3000RPM
- ※ Positioning accuracy: 1/5000 (1250PPR) , 1/10000 (2500PPR)
- ※ Up to triple overload
- ※ Multiple series to choosed

Motor naming rules

ACL	60	400	M	4	-2500	M	-48	-14	-BK
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

No.	Name	Explain
①	Series name	ACL: Standard type BCL: Economical type ICL: Integrated servo GCL: Servo drum CCL: Hollow cup servo RCL: Servo hub DCL: Direct drive motor
②	Flange	40: 40 法兰 42: 42 法兰 57: 57 法兰 60: 60 法兰 80: 80 法兰 130: 130 法兰
③	Motor power	100: 100W 200: 200W 400: 400W 750: 750W 1000: 1000W 1300: 1300W 1500: 1500W
④	Series specifications	T: T Serie M: M Serie W: W Serie P: P Serie K: K Serie C: Hollow cup servo Y: Servo hub J: Servo drum X: Direct drive motor
⑤	Polar logarithm	4: 4 opposite pole 5: 5 opposite pole
⑥	Encoder accuracy	1000: 1000PPR 1250: 1250PPR 2500: 2500PPR
⑦	Encoder category	E: Photoelectric encoder M: Magnetic Encoder
⑧	Voltage specification	24: 24V 36: 36V 48: 48V 60: 60V 72: 72V
⑨	Shaft diameter	5: 5mm 6: 6mm 8: 8mm 11: 11mm 14: 14mm 19: 19mm 22: 22mm
⑩	Additional Information	GR: With reducer, as: GR5 is a 5:1 reducer BK: With brake



Standard DC servo motor - T series

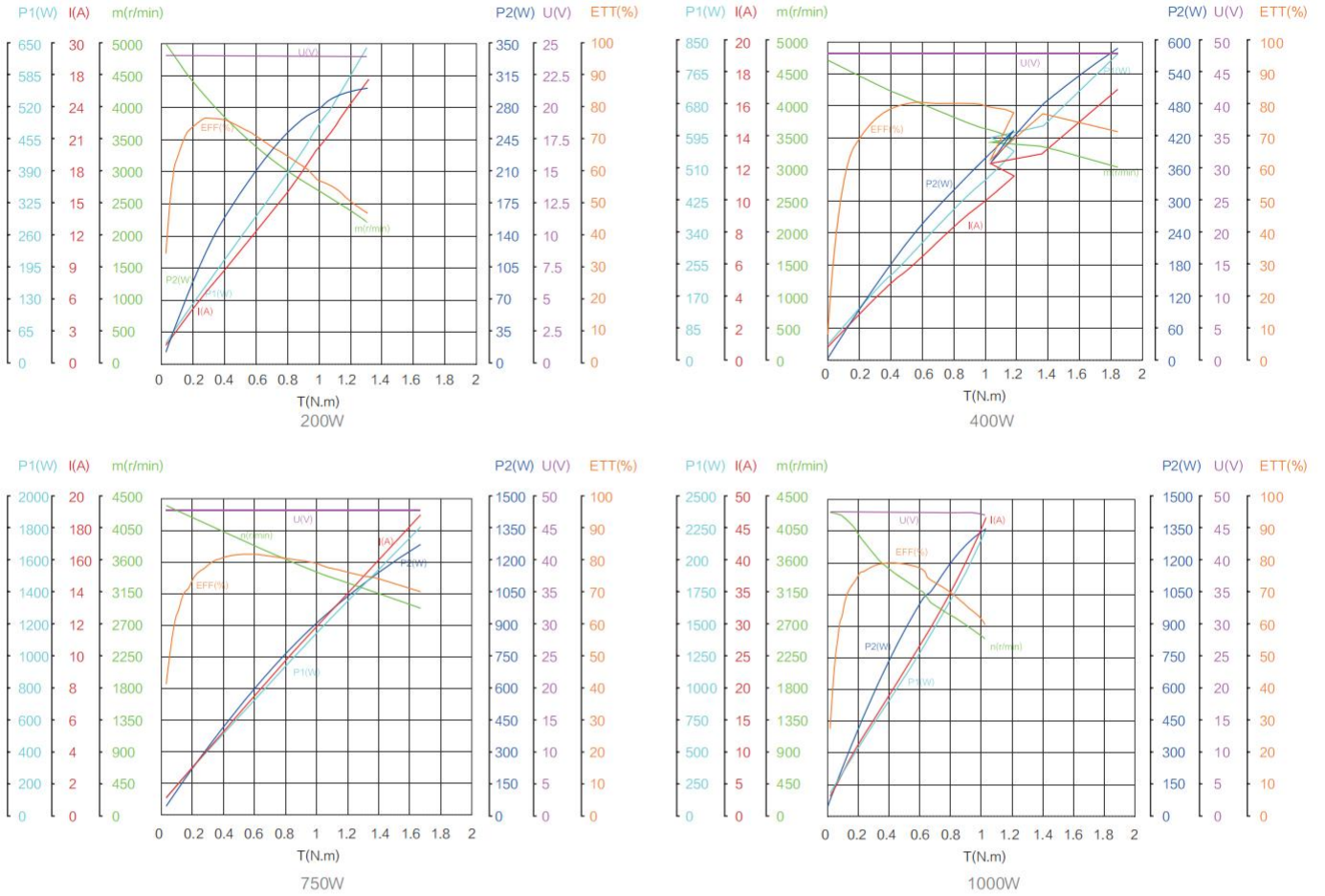
Standard DC servo motor T series power range is 200-1000w, compatible with the installation size of AC servo motor, and the number of encoder lines is 1250 and 2500. The servo motor has high reliability and low cost, and is suitable for applications requiring low price.

Model selection list

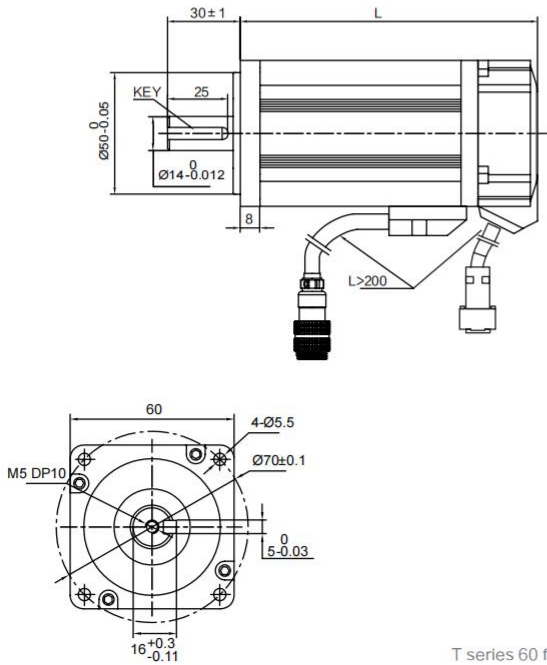
Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Length (mm)	With brake length (mm)	Adapter drive
ACL60200T4-1250E-24-14	200	24	12	60	14	3000	0.64	1250	91	148	IDS806
ACL60400T4-1250E-48-14	400	48	12	60	14	3000	1.27	1250	111	168	IDS806
ACL80750T4-2500M-48-19	750	48	25	80	19	3000	2.4	2500	125	163	IDS850
ACL801000T5-2500M-48-19	1000	48	32	80	19	3000	3.2	2500	140	178	IDS850

Note: 200W supports shaft customization, and the installation of 200w/400w brakes requires the installation of 2500 line optical braids

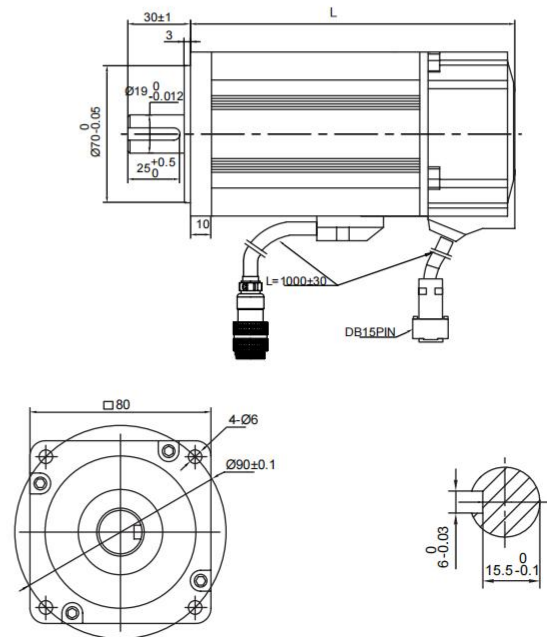
Characteristic curve



Motor size



T series 60 flange motor



T series 80 flange motor



Standard DC servo motor-M Series

Standard DC servo motor M series power range is 100-750w, compatible with the installation size of AC servo motor, and the number of encoder lines is 2500. The servo motor has high power density, ultra short body and beautiful appearance. It is suitable for applications requiring extremely high body length.

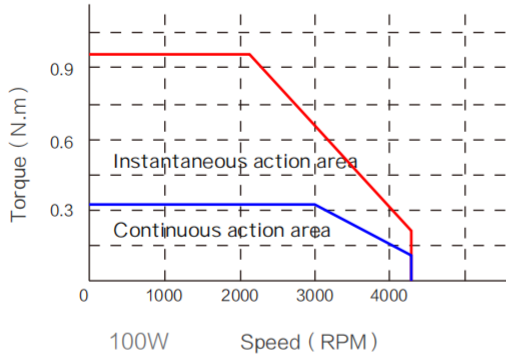
Model selection list

Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Length (mm)	Length with brake (mm)	Adapter drive
ACL40100M5-2500E-24-8	100	24	5.2	40	8	3000	0.32	2500	82.5	117.5	IDS306
ACL60200M4-2500M-24-14	200	24	9.8	60	14	3000	0.64	2500	75.5	127.5	IDS830
ACL60400M4-2500M-48-14	400	48	10.6	60	14	3000	1.27	2500	97.5	149	IDS830
ACL80750M4-2500M-48-19	750	48	20.1	80	19	3000	2.4	2500	122	162	IDS850

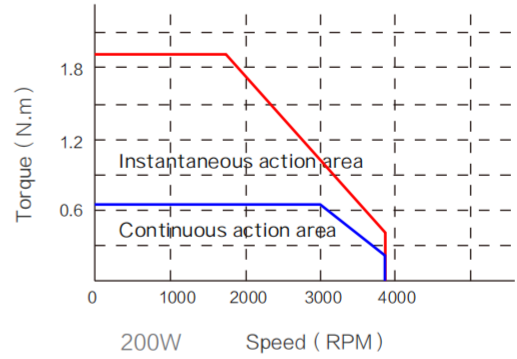
Support voltage and output shaft customization

Characteristic curve

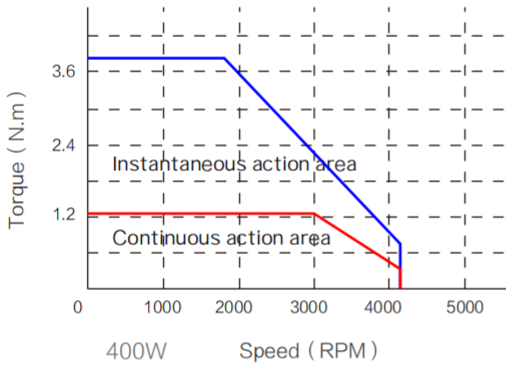
Torque-Speed characteristic



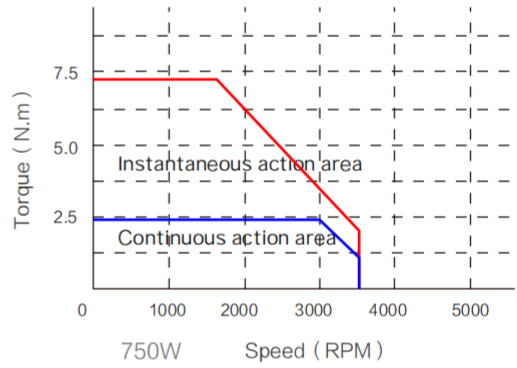
Torque-Speed characteristic



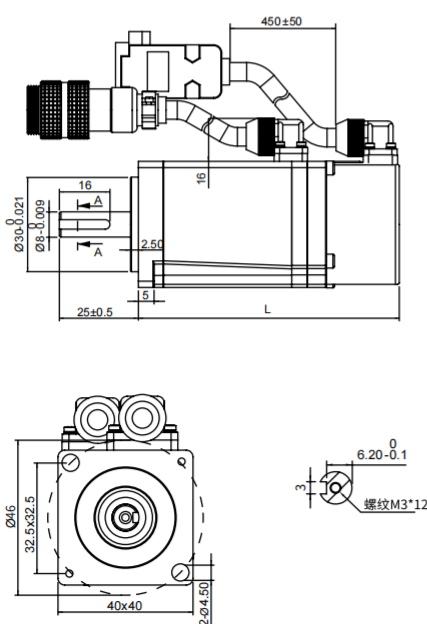
Torque-Speed characteristic



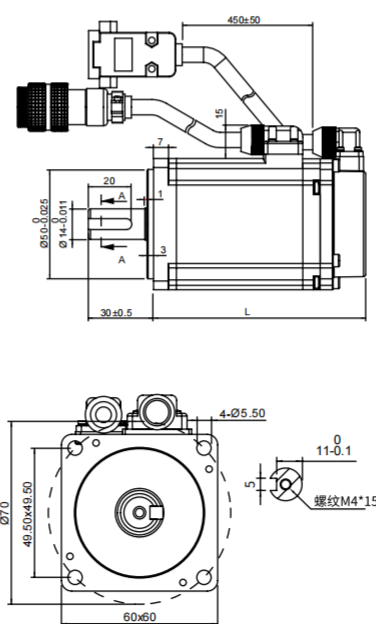
Torque-Speed characteristic



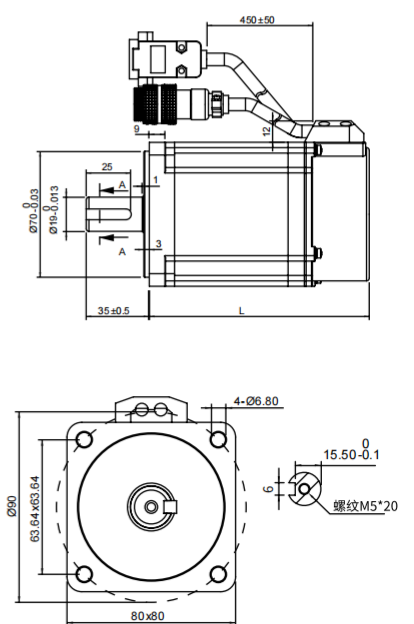
Motor size



M Series 40 flange motor



M Series 60 flange motor



M Series 80 flange motor



Standard DC servo motor - W series

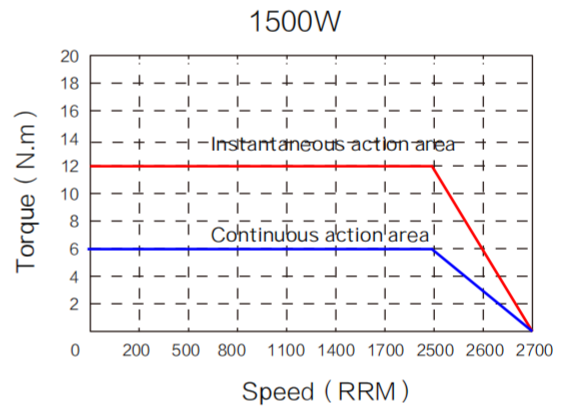
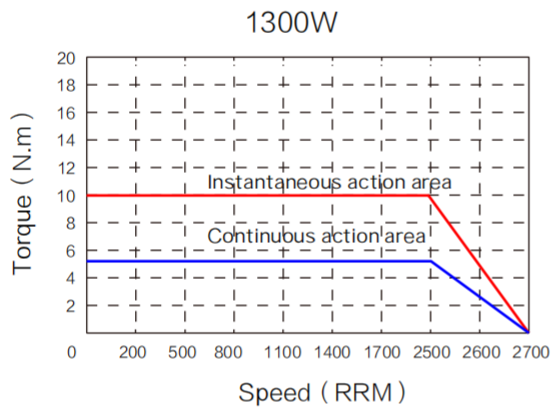
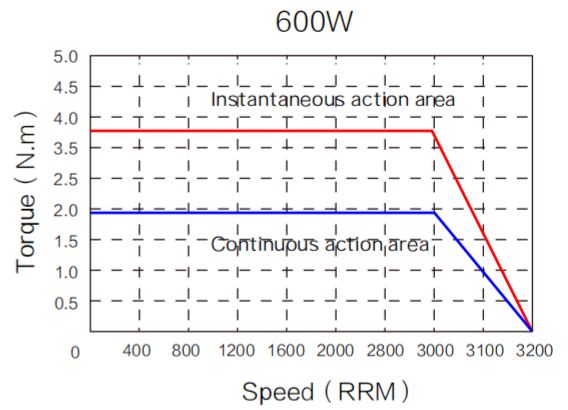
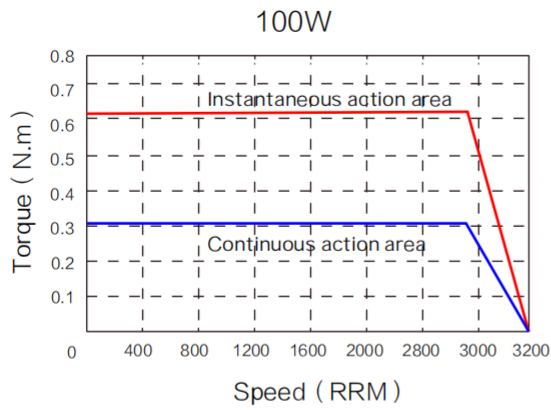
Standard DC servo motor W series power range is 100~1500w, compatible with the installation size of AC servo motor, and the number of encoder lines is 2500. The servo motor has strong overload capacity and customization, and is suitable for the application occasions of multi variety, small quantity and project customization.

Model selection list

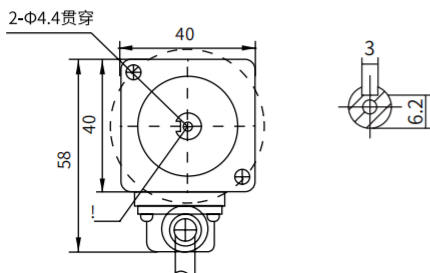
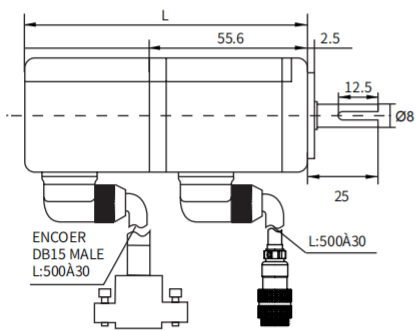
Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Length (mm)	Length with brake (mm)	Adapter drive
ACL40100W4-2500E-24-8	100	24	7.5	40	8	3000	0.32	2500	99	136.3	IDS306
ACL60600W4-2500M-48-14	600	48	22	60	14	3000	1.91	2500	159	199.8	IDS850
ACL1301300W4-2500M-48-22	1300	48	40	130	22	2500	5	2500	160	204	IDS8100
ACL1301500W4-2500M-48-22	1500	48	47	130	22	2500	6	2500	160	204	IDS8100

Note: Accept non-standard customization

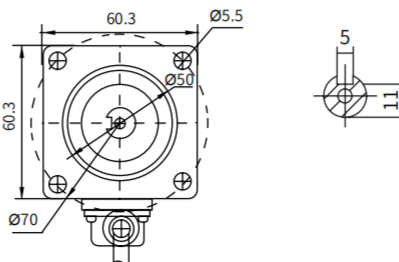
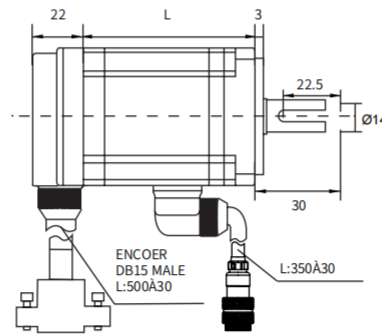
Characteristic curve



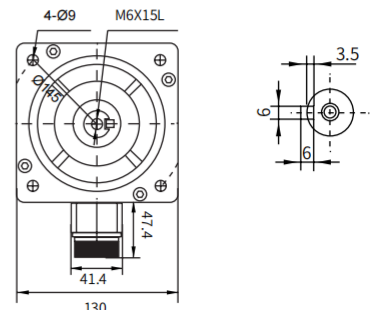
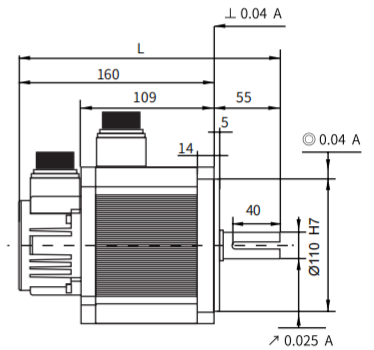
Motor size



W Series 40 flange motor



W Series 60 flange motor



W Series 130 flange motor



Economical DC servo motor

Economical DC servo motor, power range 30w~180w, encoder line number 1000. The servo is economical. It can run smoothly at a low speed of 1rpm. The default speed is 3000rpm, and the maximum speed can be customized above 10000rpm. The servo can better overcome the situation of DC brushless low-speed powerless, and output constant torque at any speed. Compared with the standard DC servo motor, the performance is close, but the price is more affordable. With mature servo technology, simple installation and adjustment, stability and reliability, and high cost performance, it can fully meet many occasions where servo is used but the requirements are relatively low

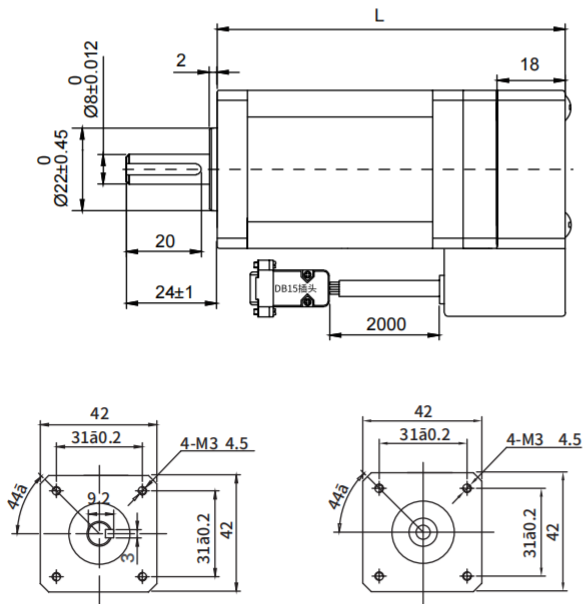
Application characteristics

- ※ Working voltage: 24~36VDC
- ※ Power: 30~180W
- ※ Rated speed: 3000RPM, Customizable maximum speed to10000RPM
- ※ Positioning accuracy: 1/4000
- ※ Up to double overload
- ※ Economical, Reliable and Durable

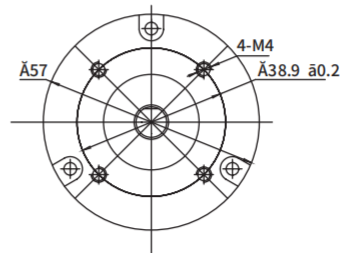
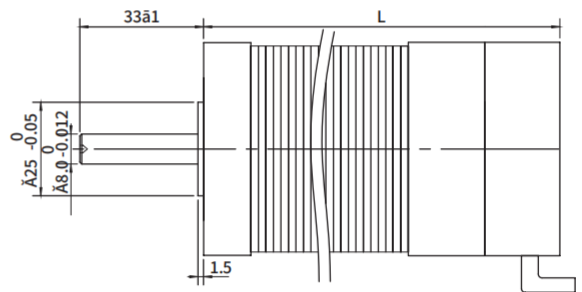
Model selection list

Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Length (mm)	Weight (Kg)
BCL57180P4-1000E-36-8	180	36	6.7	57	8	3000	0.57	1000	132	0.95
BCL57130P4-1000E-36-8	130	36	5.3	57	8	3000	0.41	1000	112	0.8
BCL57090P4-1000E-24-8	90	24	3.5	57	8	3000	0.29	1000	92	0.65
BCL57050P4-1000E-24-8	50	24	3.0	57	8	3000	0.16	1000	72	0.5
BCL42030P4-1000E-24-5	30	24	1.8	42	5	3000	0.1	1000	70	0.35
BCL42060P4-1000E-24-6	60	24	3.4	42	6	3000	0.2	1000	88	0.6
BCL42090P4-1000E-24-8	90	24	5.2	42	8	3000	0.3	1000	108	0.7

Motor size



BCL42 Series (Shaft diameter 5mm without key)



BCL57 Series



Standard integrated servo

The standard integrated servo has the servo driver built into the low-voltage DC servo motor, and solves the problems of electromagnetic interference and heating. It can save installation space, eliminate wiring, and work only by supplying power and connecting control signals, making installation and maintenance easier. The servo power range is 100~400w, which is compatible with the installation dimensions of Panasonic and other motors in Japan. The number of encoder lines is 1250 and 2500. 1rpm can still run smoothly, and the rated speed is 3000rpm. The servo technology is mature, simple to install and adjust, stable and reliable, and cost-effective. It is especially suitable for occasions with small installation space and distributed motor control.

Application characteristics

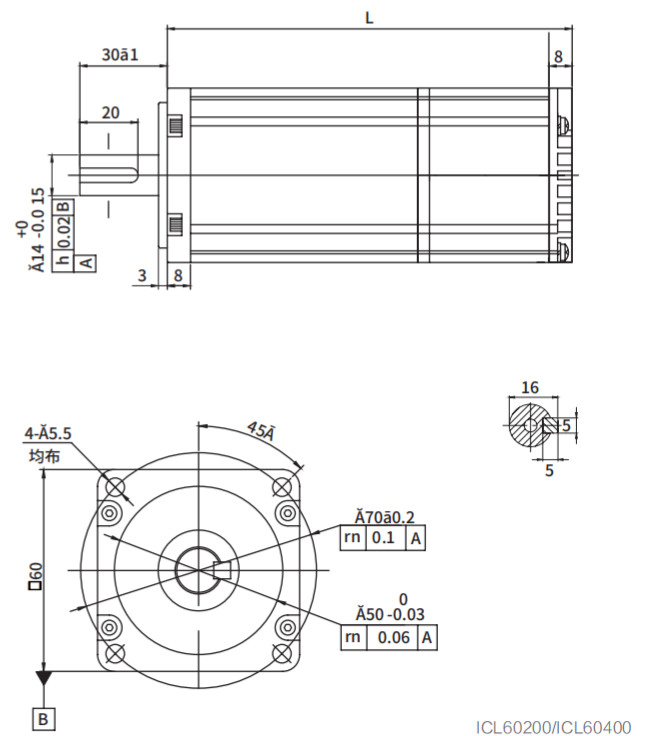
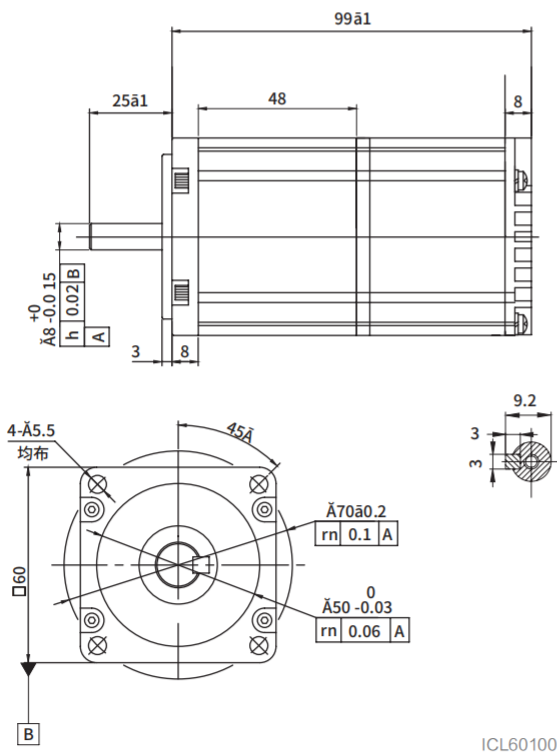
- ※ Working voltage: 24~48VDC
- ※ Power: 100~400W
- ※ Rated speed: 3000RPM
- ※ Control mode: External pulse (Single ended / Differential), Analog control, Can bus, RS232 communication control, I/O control, etc., supporting position, speed and torque modes
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and Backup and Import parameters
- ※ Safety protection: It has alarm functions such as Undervoltage, Overvoltage, Overload, Overcurrent, Excessive position deviation, Encoder abnormality, etc
- ※ Support zero point torque reset, and can customize the packaging control function.

- ※ Tracking Error: ± 1 Pulse
- ※ Speed control accuracy: ± 1 RPM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed: 1RPM
- ※ Maximum no-load acceleration: 200RPM/ms
- ※ Positioning accuracy: 1/5000 (1250) , 1/10000 (2500)

Model selection list

Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Length (mm)	Weight (Kg)
ICL60400K4-1250E-48-14	400	48	10.5	60	14	3000	1.27	1250	129	1.6
ICL60200K4-1250E-36-14	200	36	7.2	60	14	3000	0.64	1250	104	1.3
ICL60100K4-1250E-24-8	100	24	6.3	60	8	3000	0.32	1250	99	1.2

Dimension





Economical integrated servo

The economical integrated servo integrates the servo driver and the DC brushless servo motor, solves the problems of electromagnetic interference and heating, saves installation space, eliminates wiring, and works only by supplying power and connecting control signals. It is especially suitable for occasions with small installation space and motor distributed control.

Application characteristics

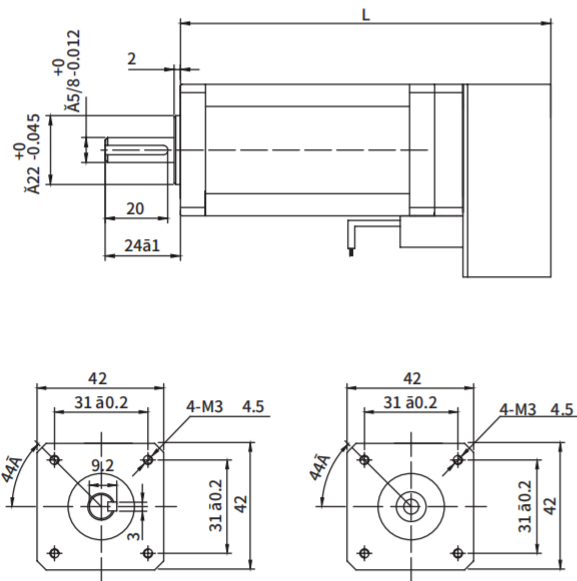
- ※ Working Voltage: 24~36VDC
- ※ Power: 30~130W
- ※ Rated speed: 3000RPM
- ※ Control mode: External pulse (Single ended / Differential), Analog control ,RS232 communication control, I/O control, etc., supporting position, speed and torque modes
- ※ Parameter debugging: Adopt RS232 communication, PC debugging software or Handheld debugger for debugging, and Backup and Import parameters
- ※ Safety protection: It has alarm functions such as Undervoltage, Overvoltage, Overload, Overcurrent, Excessive position deviation, Encoder abnormality, etc
- ※ Built in acceleration and deceleration, smooth start and stop
- ※ Support zero point torque reset, and can customize the packaging control function

- ※ Tracking Error: ± 1 Pulse
- ※ Speed control accuracy: ± 1 RPM
- ※ Upper limit of received pulse: 1MHZ
- ※ Minimum speed: 1RPM
- ※ Maximum no-load acceleration: 200RPM/ms
- ※ Positioning accuracy: 1/4000 (1000) , 1/10000 (2500)

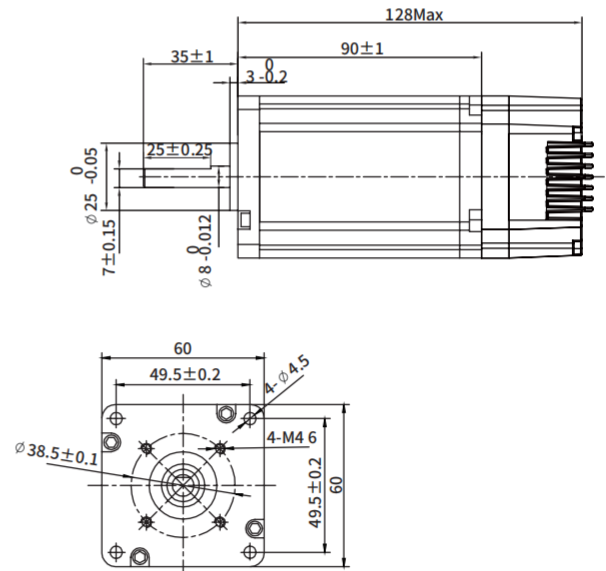
Model selection list

Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Length (mm)	Weight (Kg)
ICL60130T4-1000E-36-8	130	36	5.3	60	8	3000	0.41	1000	128	0.8
ICL42030P4-2500M-24-5	30	24	1.8	42	5	3000	0.1	2500	80	0.65
ICL42060P4-2500M-24-6	60	24	3.4	42	6	3000	0.2	2500	99	0.85
ICL42090P4-2500M-24-8	90	24	5.2	42	8	3000	0.3	2500	118	0.95

Dimension



ICL42 Series (Shaft diameter 5mm without key)



ICL60 Series

Definition of integrated servo interface

Power interface

Wiring color	Marking	Name	Remarks
Red	VDC	Input power+	DC 24-48v (Refer to the voltage requirements of specific models)
Black	GND	Input power-	

Note: The definition of junction box is specified separately

Control interface

Wiring color	DB15 No.	Marking		Remarks
Brown	1	PUL+		Pulse signal: The rising edge of the pulse is effective, 4-5v at high level and 0-0.5v at low level, and the pulse width shall be greater than 1.6us. If 12V or 24V is used, 1.5-2.k resistor must be connected in series
Brown Black	6	PUL-		
Blue	2	DIR+		Direction signal: Reverse when high level is input between DIR+ and DIR-, and reverse when high level is input. The direction signal shall be established at least 5us before the pulse signal, 4-5v at high level and 0-0.5v at low level. If 12V or 24V is used, 1.5-2.2k resistor must be connected in series
Blue Black	7	DIR-		
Yellow	3	ENA+		Enable signal: this signal is used to enable or disable the servo motor. Between ENA+ and ENA-, the driver will cut off the power supply of the motor to make the motor in a free state without responding to the pulse. Between ena+ and ena-, it is a low level enabling motor. If 12V or 24V is used, 1.5-2.2k resistor must be connected in series
Yellow Black	8	ENA-		
Write	4	FAULT		
Write Black	5	COM		Controller common
Green	10	Z-OUT		
Green Black	11	AI	Analog input	0-5V, 0-2.5V Reverse, 2.5-5V Forward

Note: The definition of junction box is specified separately

Communication interface

Wiring color	DB15 No.	Name	Remarks
Grey Black	15	RXD	Connected to DB9 pin3
Gray	14	TXD	Connected to DB9 pin 2
Black	13	GND	GND Connected to DB9 pin 5)
Red	12	+5V	The driver is externally supplied with +5v output, max of 100mA.

Note: The definition of junction box is specified separately

The interface definition of ICL60130T4-1000E-36-8 shall be subject to the label.



Function customized servo

In order to adapt to the all-round application of servo industry, our company has developed various industry-specific servo versions, including torque locking, single axis automatic control, torque clamping, gate automatic control, electric claw, etc., which can be controlled by simple IO or 232/485/CAN protocol. The servo itself can independently complete accurate positioning, high-precision torque locking or clamping.

Single axis automatic control

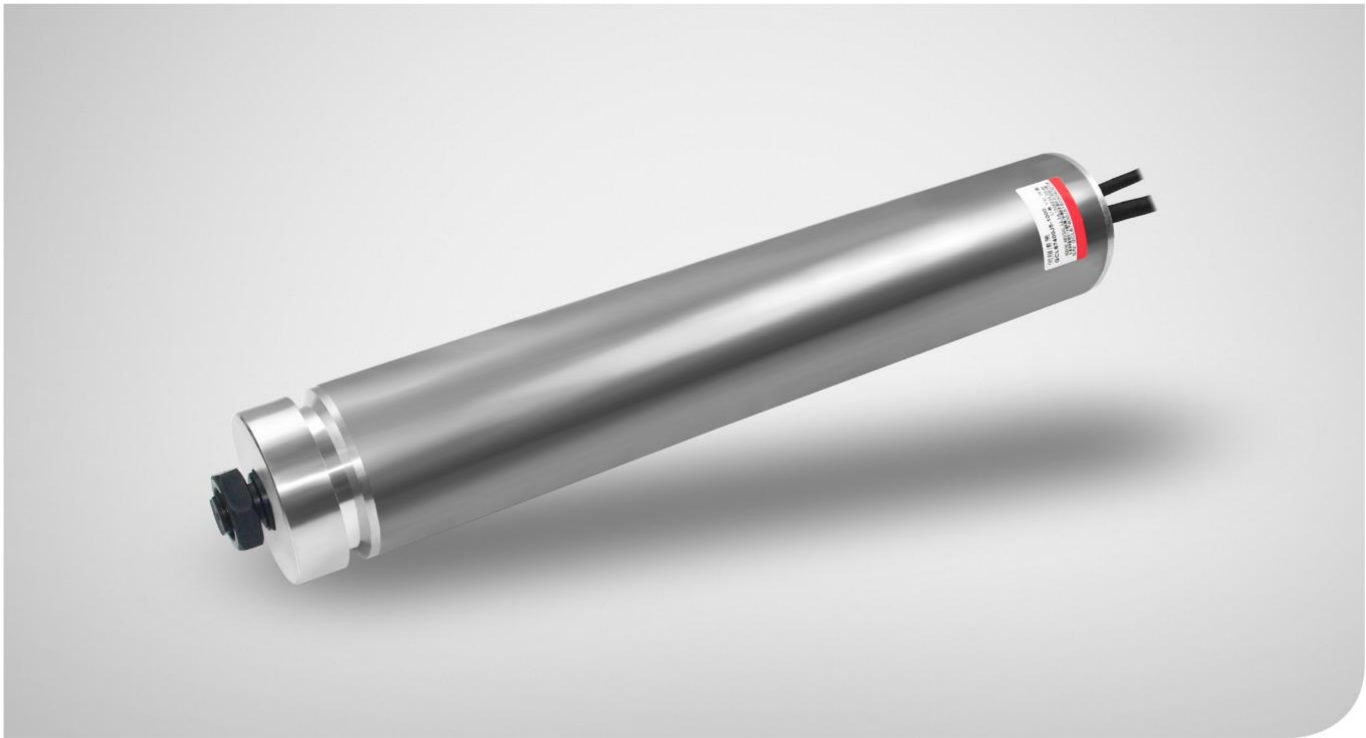
- ※ Eliminating zero point reset and zero point offset
- ※ Reset direction, speed and zero offset can be set
- ※ Support I/O, 232/485/CAN protocol control
- ※ Position, Speed, Acceleration and Deceleration can be set
- ※ I/o combination control can control up to 32 positions, and protocol control is unlimited
- ※ Built in acceleration and deceleration, support positioning feedback output

Gate application

- ※ Eliminating zero point reset and zero point offset
- ※ Reset direction, speed and zero offset can be set
- ※ Support I/O, 232/485/CAN protocol control
- ※ Built in acceleration and deceleration, stable opening and closing gate, supporting abnormal alarm handling of stuck pedestrians and stuck luggage
- ※ Precise positioning can save the absolute value encoder of DC brushless scheme
- ※ Optional servo motor + reducer scheme or servo roller scheme

Screw locking, torque clamping, electric claw

- ※ Eliminating zero point reset and zero point offset
- ※ Reset direction, speed and zero offset can be set
- ※ Support I/O, 232/485/CAN protocol control
- ※ Locking / clamping force, locking / clamping speed and acceleration can be set
- ※ Built in acceleration and deceleration, supporting torque reaching feedback output
- ※ With the upper computer, the torque accuracy of direct drive motor can be controlled within 5%



DC servo drum

DC servo drum is mainly used for logistics sorting and production line automation. Compared with DC brushless drum, it has the following characteristics:

1. Fast response. The minimum start and stop time of the DC brushless drum is 800 milliseconds, and the start and stop time of the DC servo drum is only 100 milliseconds, or even shorter, which significantly improves the sorting efficiency.

2. Precise movement. The DC brushless drum can only run in the speed mode. The conventional minimum speed is more than 100 revolutions. It can also roughly move through the software, but different loads may cause inaccurate movement. The DC servo drum can not only rotate at a speed of 1 R / min, but also run in a position mode through a high-precision encoder to achieve accurate positioning.

3. Smooth operation. The characteristics of the running speed mode of the DC brushless drum determine that it is difficult to start and stop smoothly, so it is difficult to meet some sorting application requirements. However, the DC servo drum can be switched to the position mode, and the S-shaped acceleration and deceleration are used to start and stop smoothly, so as to avoid damage or falling of the express.

4. Durable. The DC brushless drum has a built-in reducer. Generally speaking, the mechanism will be worn during use, while the DC servo drum adopts the direct drive mode, which saves the use of reducer and reduces the cost.

5. Strong overload capacity. DC servo drum constant torque output, standard model 5N.m. It can be overloaded by triple overload to 15 N.m, which is better than the DC brushless drum in load adaptability.

Application characteristics

- ※ Working voltage: 24~48VDC
- ※ Power: 400W
- ※ Rated torque: 5N · m, MA x : 15N · m
- ※ Speed: No load:1120RPM, Rated:750PRM



Hollow cup servo

The hollow cup servo has the characteristics of small volume and high speed. The hollow cup winding is adopted, which has no cogging effect, and the torque fluctuation is very small. The high-performance rare earth neodymium iron boron magnetic steel is adopted, with very high power density. The imported brand ball bearing is adopted, and the high service life can reach 10000 hours. It has a very high cost performance ratio to replace similar products.

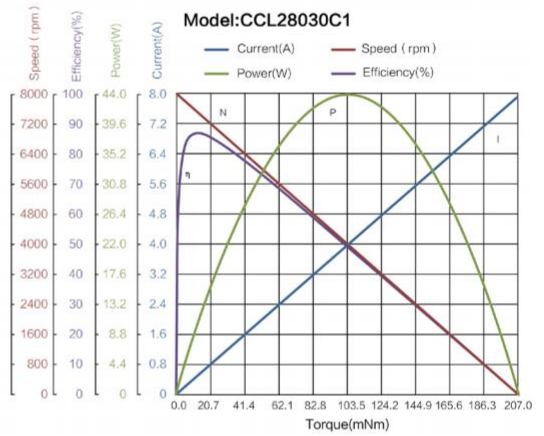
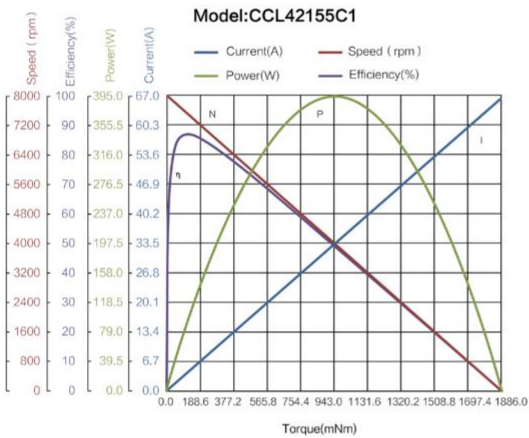
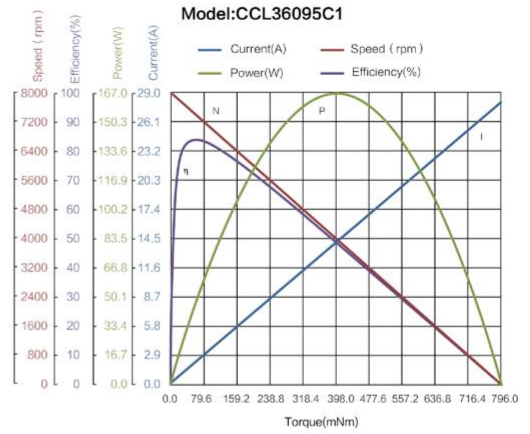
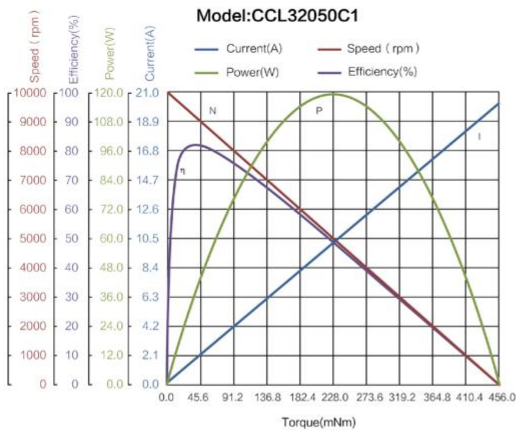
Application characteristics

- ※ Working Voltage: 24VDC
- ※ Optional planetary reducer with low noise and long service life
- ※ Provide voltage, speed, torque, flange, shaft diameter and other parameters, and accept customization

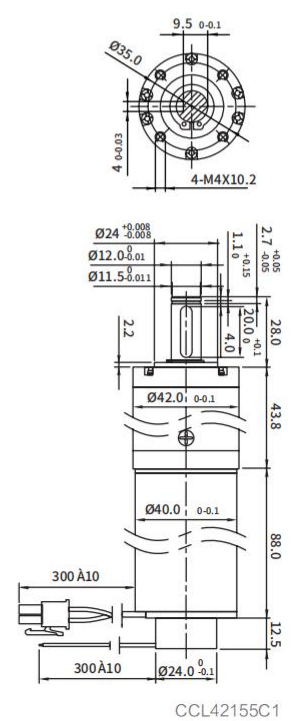
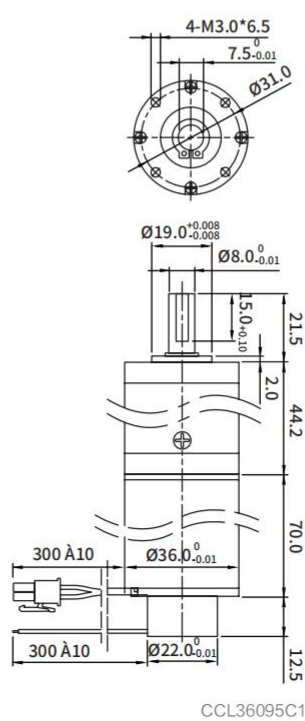
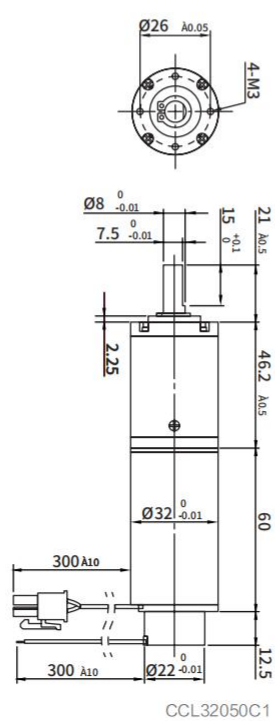
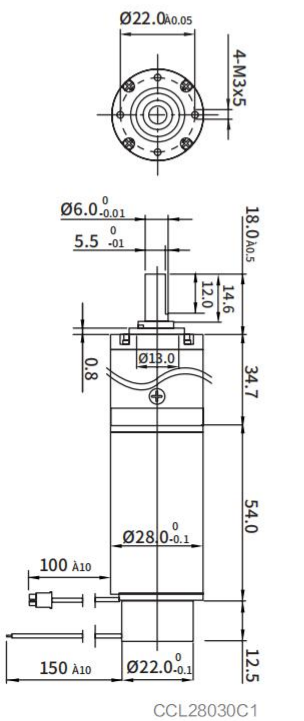
Model selection list

Model	Power (W)	Voltage (VDC)	Current (A)	Flange (mm)	Shaft Diameter (mm)	Speed (RPM)	Torque (N·m)	Encoder (PPR)	Speed ratio	Length (mm)	Weight (Kg)	Adapter drive
CCL28030C1-1000M-24-6	30	24	3	28	6	210	1	1024	1/29.3	101.2	0.25	IDS306
CCL32050C1-1000M-24-8	50	24	5	32	8	87	4.5	1024	1/100.6	118.7	0.4	IDS306
CCL36095C1-1000M-24-8	95	24	8	36	8	370	2	1024	1/18.6	126.7	0.6	IDS806
CCL42155C1-1000M-24-12	155	24	10	42	12	1650	0.8	1024	1/4.3	144.3	0.8	IDS806

Characteristic curve



Dimension





DC servo hub

DC servo hub is widely used in logistics, service robots, inspection vehicles and other fields. It has high reliability and accepts non-standard customization.

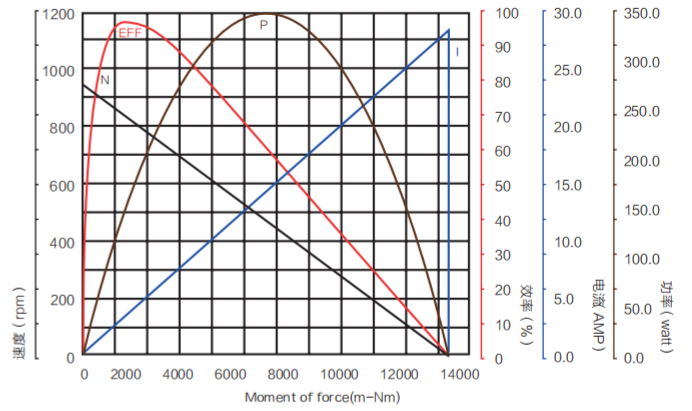
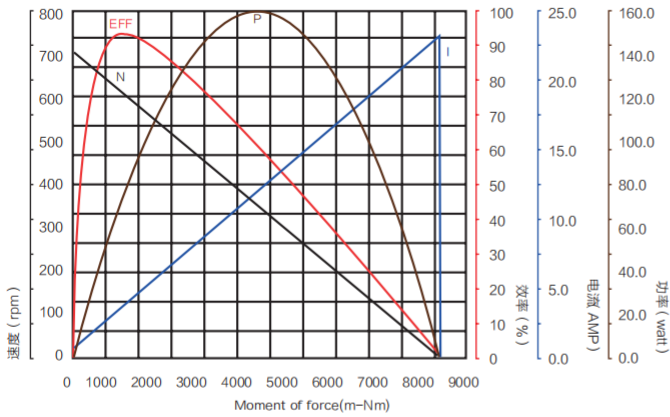
Application characteristics

- ※ Built in encoder
- ※ High reliability and strict environmental testing
- ※ High torque, high efficiency and long service life
- ※ Finish machined shell, beautiful appearance
- ※ Customizable design

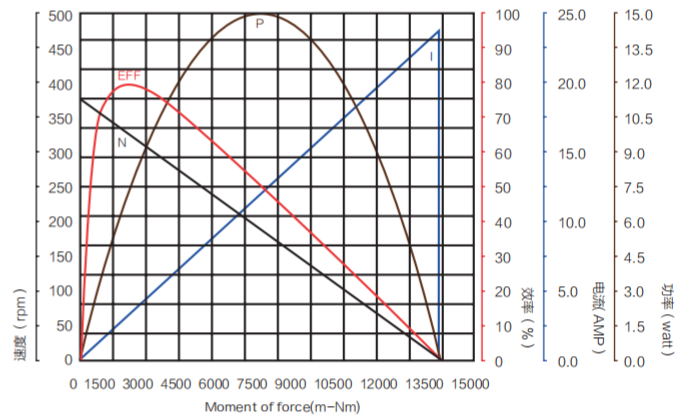
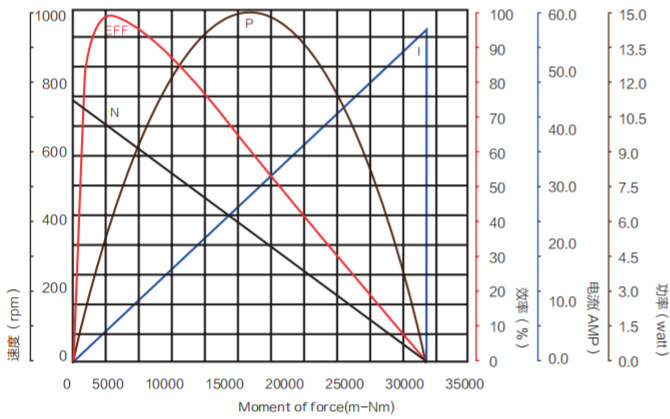
Model selection list

Model	Power (W)	Voltage (VDC)	No load current (A)	No load speed (RPM)	Rated Torque (N·m)	Encoder (PPR)	Rated Torque (RPM)	Rated Current (A)
5.5"hub motor								
RCL55130Y13-8192M-24	130	24	≤ 0.75	710	2.5	8192	490	≤ 7.0
RCL55130Y13-8192M-36	210	36	≤ 0.75	1000	3.0	8192	700	≤ 7.8
6.5"hub motor								
RCL6590Y15-8192M-24	90	24	≤ 0.6	380	3	8192	300	≤ 10
RCL6590Y15-8192M-36	360	36	≤ 0.8	800	5	8192	650	≤ 13
8"hub motor								
RCL8065Y13-8192M-24	65	24	≤ 0.5	310	2.6	8192	240	4
RCL8065Y13-8192M-36	120	36	≤ 0.5	460	3.0	8192	380	4

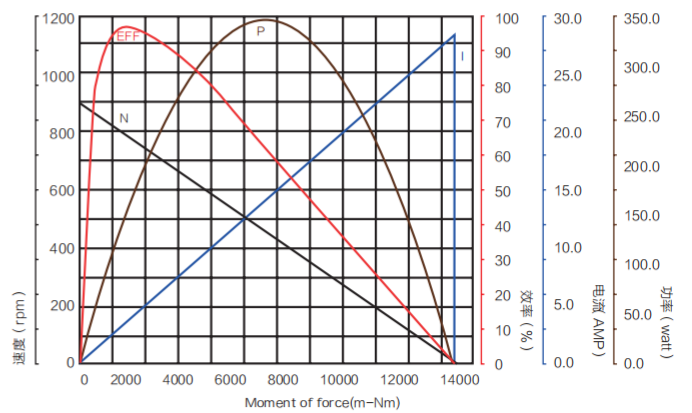
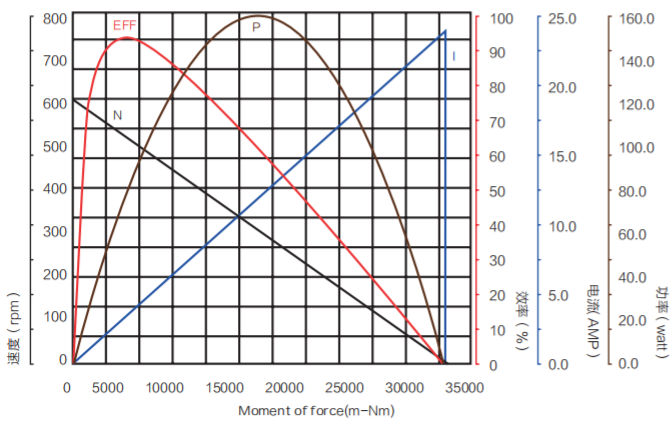
Characteristic curve



5.5-inch torque curve

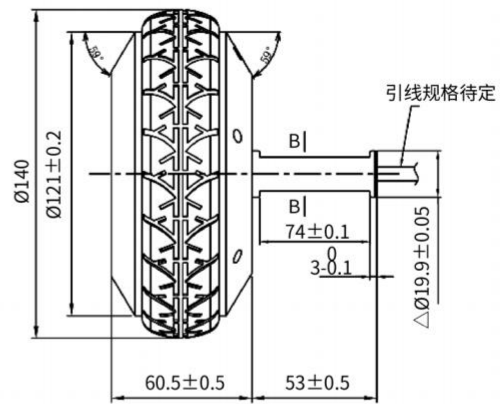
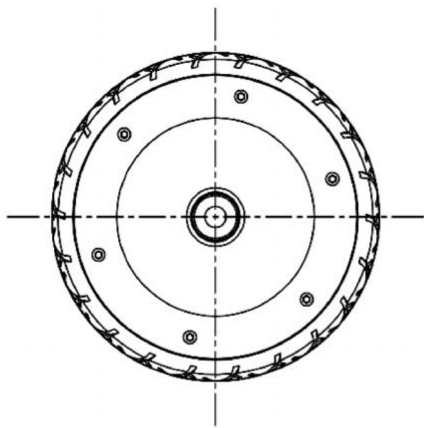


6.5-inch torque curve

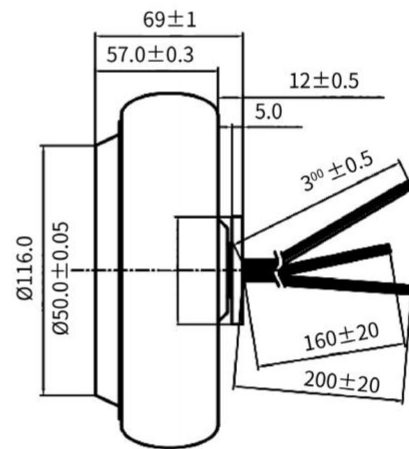
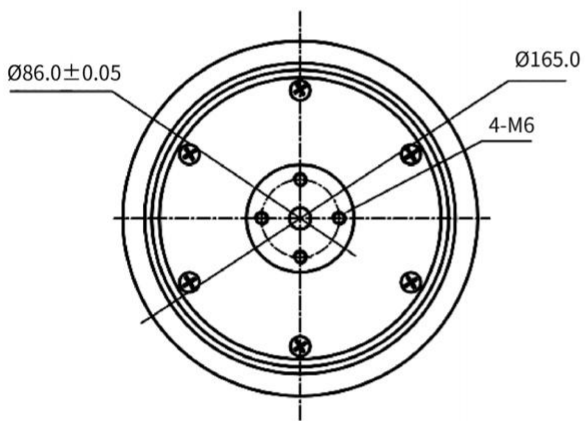


8-inch torque curve

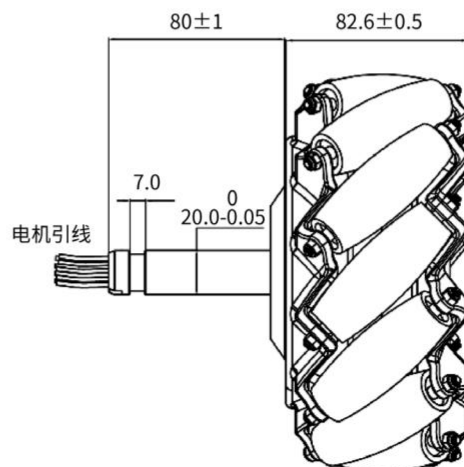
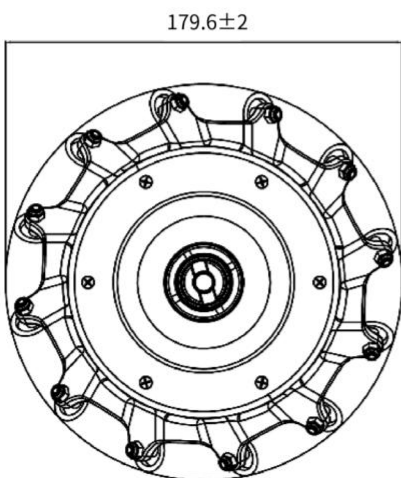
Dimension



5.5寸



6.5寸



8寸



Operating instructions of handheld debugger

Operation steps:

- ※ After power on, if the communication is normal, the NOR green light is on. Communication failure, COM red light is on. Drive failure, fault light on.
- ※ In case of communication failure, please check whether the cable is loose and whether the cable in DB9 falls off. When the driver fails, please check the wiring between the motor and the driver, whether the power supply voltage is normal, whether the load is too large, and whether the motor is stuck.
- ※ MODE changing-over F000、F001、F002 , among F000 corresponding PR000-PR018, F001 corresponding PR100-PR115, F002 corresponding PR200-PR210.
- ※ After entering the submenu, press ENT to enter the corresponding content. The left triangle shifts, and the upper and lower triangles add and subtract values. Under the menu of digital input, long press the left triangle for three seconds to reverse the current input value.
- ※ Under the menus F000, F001 and F002, the system will automatically switch to the speed monitoring mode after 5 seconds, and the current instantaneous speed will be displayed on the panel at this time.

Panel operation:



1. Reset
Reset and clear the current fault of the drive and the ~~subject line~~ reversed when press for a long time
2. Upward: Switch submenus and increase values
3. Speed adjustment
Potentiometer
4. Mode switch / Exit
Switch the first level menu / Exit the current menu
5. Downward
Switch submenus and reduce values
6. Left
The input bit shifts to the left and flashes at the same time,
7. Shutdown
8. Startup
9. Confirm
Enter the submenu and confirm the input
10. Communication input interface
Connecting drives

Alarm parameter list and control mode RP018 parameter list

Name	Display	Cause of failure
Overload	AL_01	Excessive load / Wrong motor wiring / Encoder error
Undervoltage	AL_02	
Position deviation is too large	AL_03	
Encoder failed	AL_04	
Overvoltage	AL_05	
Overcurrent	AL_06	

Pr018	Name
Value	Control mode selection
1	Torque mode –PC digital input
2	Torque mode – External analog input
3	Speed mode–PC digital input
4	Speed mode – External analog input
5	Position mode –PC digital input
6	Position mode – External analog input
7	Position mode – External pulse input

Parameter list

Display	Name	Function
SERVO	Boot interface	
F000	First level submenu	Basic parameters (mode key switching)
F001	First level submenu	Factory settings (mode key switching)
F002	First level submenu	Monitoring parameters (mode key switching)

Display	Name	Remark (Factory settings)
Pr000	Position proportional gain Kp	1000
Pr001	Position differential gain Kd	0
Pr002	Position feedforward gain Kf	0
Pr003	Speed proportional gain Kp	8000
Pr004	Velocity integral gain Ki	100
Pr005	Velocity differential gain Kd	0
Pr006	Current proportional gain Kp	1000
Pr007	Current integral gain Ki	1000
Pr008	Retain	
Pr009	Speed loop PC digital setting	188
Pr010	Retain	
Pr011	Position mode speed limit	3500
Pr012	Retain	
Pr013	Retain	
Pr014	Retain	
Pr015	Retain	

Display	Name	Remark (Factory settings)
Pr016	Speed mode – acceleration	1
Pr017	Speed mode – deceleration	1
Pr018	Control mode setting	Details:Pr018 Parameter list 7
Pr100	Retain	
Pr101	Retain	
Pr102	Retain	
Pr103	Rated current of motor	Unit: mA 8000
Pr104	Electronic gear molecule	1
Pr105	Denominator of electronic gear	1
Pr106	Overload multiple	200%
Pr107	Overload time	Unit: ms 3000
Pr108	Power on enable selection	1–ON, 0–OFF
Pr109	Motor forward rotation and reverse rotation selection	1– (CCW), 0– (CW)
Pr110	PC/PLC control switching	0–PC, 1–PLC
Pr111	Position deviation pulse range	Unit: Number of pulses 5000
Pr112	Position deviation time	Unit: ms 3000
Pr113	Analog deadband	50
Pr114	Retain	
Pr115	Retain	
Pr200	Software version	
Pr201	Bus voltage	Unit: V
Pr202	Output current	Unit: A
Pr203	Motor speed	Unit: RPM
Pr204	Alarm parameters	
Pr205	Potentiometer input selection	0– Keyboard numeric input, 1–Potentiometer
Pr206	Retain	
Pr207	Retain	
Pr208	Retain	
Pr209	Retain	
Pr210	Restore factory set parameters	Enter password instruction(8888)



Instructions for debugging software

※ 1. To establish communication, first establish the hardware connection, connect the debugging line to the RS232 interface of the driver, and connect the other end to the computer. If the computer has no serial port, it needs USB to RS232.

※ 2. Check the serial port number of the computer. In the device manager, check the port and see which COM port the USB to serial port is. The following figure shows the port details under normal conditions. If the serial port has no driver, a yellow exclamation mark will be displayed, prompting to install the USB to RS232 driver.



※ 3. After confirming that there is no problem with the hardware connection, power on the driver, open the debugging software, pull down the file, set the serial port, select the corresponding serial port number and set it. Then open the serial port.



※ 4. After opening the serial port, the software will automatically read the internal setting parameters of the driver for the first time. If communication fails, communication failure or parameter reading failure will be displayed in the lower left corner. Whether the communication is successful depends on whether the driver version is read. If the driver version is unknown, the communication fails. Please check the hardware connection.



※ 5. After successful communication, the parameters will be read in normally. Enter the password. The above is the manufacturer's parameter. When modifying, you must enter the password instruction. It is recommended to modify carefully. The motor parameters are wrong, which is easy to alarm or operate abnormally, or damage the driver and equipment. The operation can be carried out only after consulting the manufacturer. The password is 8888 by default. If the modification is wrong, please restore the default parameters.

※ 6. Control source selection. If the control system is pulse positioning type, please select position mode – external pulse input, and the control status is PLC. In case of communication position control, can or RS485, Select position mode –pc digital input. During communication control, please switch the control state to PC. For the current control status, refer to the lower right corner.

- ※ 7. The difference between PC control and PLC control is whether the startup and shutdown operations are controlled by external enabling signals or by communication instructions. If it is controlled by PC, the external enabling signal fails, and the shutdown is initiated by the command. If it is controlled by PLC, the communication command starts and stops, and it is controlled by external enabling signal. If it is speed control, please select speed mode –pc digital input, and the control status is PC.
- ※ 8. For parameter settings of different modes, please browse the software parameter interface directly for details
- ※ 9. The acceleration time and deceleration time are calibrated as the time from 0 speed to 3000rpm.
- ※ 10. 调Adjust the operating parameters according to the load. The position proportion is related to the speed of reaching the target position response. If it is too large, it will overshoot. If it is too small, the position response will be too slow or not in place. The speed proportion can adjust the speed response speed, and has the function of matching inertia at the same time. If the load is large inertia, the speed proportion will increase to about 10000. If the load is stuck during operation, the speed integral will be adjusted below 100. If there is overshoot and shaking back and forth when reaching the target position, the position proportion is reduced, and it is recommended to be 500-1000. Current loop parameters are not recommended to be adjusted.
- ※ 11. Monitor parameters. The normal reading of the driver version is a reference for the success of communication. The bus voltage can refer to whether the power supply voltage is abnormal. The output current can be used to observe the actual running current, judge the load size, and see whether the selected motor power meets the requirements. The motor speed is the current running speed of the motor. The target location is the received target location. Position feedback is the actual running position of the motor.

Debugging software interface



- ① 端口选择
- ② 电机参数, 详情咨询厂家
- ③ 过载电流和时间设置
- ④ 控制模式选择
- ⑤ 总线参数
- ⑥ PID参数
- ⑦ 控制选择, PC控制或PLC控制
- ⑧ 写入参数
- ⑨ 报警信息
- ⑩ 当前控制状态

1. Port selection
2. Motor parameters
3. Overload current and time setting
4. Control mode selection
5. Bus parameters
6. PID parameters
7. Control selection, PC or PLC control
8. Write parameters
9. Alarm information
10. Current control status

Common troubleshooting methods

※ Communication failure

- ① There may be a problem with the DB9 connection cable, or the USB to serial port cable is damaged. 57600bps (baud rate) requires high communication rate of USB to serial port and strong anti-interference ability.
- ② Whether the communication port com setting is wrong, check the current port number in the "my computer" device manager.
- ③ If the debugging software cannot run because the windows system lacks a running environment, please install framework3.5 or above.
- ④ Whether the RS232 interface of the driver is damaged.
- ⑤ Prompt that the driver software version is too low, which is an abnormal communication. You can check whether the version number is read normally.
- ⑥ In case of interference, abnormal parameters or failure to connect, close the software, reset the driver and reconnect.

※ Overload alarm

- ① Motor parameter error: please check whether the number of encoder lines, z-angle offset, number of motor poles, rated current, overload coefficient, energy consumption discharge voltage threshold are normal.
- ② Whether the UVW line sequence of motor power line is wrong: the standard is correct line sequence: u-black, v-red, w-blue. In case of non-standard motor, the parameters provided by the manufacturer shall prevail.
- ③ Please confirm whether the encoder line and motor line are in poor contact.
- ④ Please confirm whether the power supply voltage is too low or whether the power supply power is too small.
- ⑤ Please confirm whether the load is too large. If it is overloaded, please choose a motor with higher power.

※ Encoder failed

- ① Please check whether the encoder line and connector are abnormal.
- ② To eliminate the above reasons, check the encoder itself, and it is recommended to return it to the manufacturer for treatment.

※ The motor does not rotate when sending pulse signal, please confirm:

- ① Whether the coupling or synchronous wheel is fastened.
- ② Whether the pulse and direction signal lines are normal.
- ③ Whether the drive control mode is set correctly. Control source: position mode – external pulse, control status: PLC.
- ④ Whether the pulse level is 5V and whether it meets the opening voltage of the optocoupler.
- ⑤ When the system is PLC, the 24V signal port must be connected with 2K resistor in series, otherwise the optocoupler will be damaged.
- ⑥ If the pulse frequency is too high, it will be filtered out. The recommended frequency is below 500K.
- ⑦ The resistance value of the driver signal port is too large, or the port is damaged.

※ The position deviation is too large: the driving parameters are set improperly or the deviation range and time are set too small.

※ Undervoltage: the voltage is too low or the load is too large to pull down the power supply. Overvoltage: the voltage is too high. Overcurrent: excessive current, load or locked rotor.

※ Protocol communication exception: check the serial number of the connection line, check the data protocol and the time interval of multi frame transmission.

※ Faults occasionally occur without: electrical interference or contact problems.

※ The speed cannot be reached: the power supply voltage is insufficient or the power supply power is too small.

※ Insufficient motor torque: the power supply is insufficient, or the motor selection is too small

※ On site troubleshooting: it is recommended to use the above methods for troubleshooting, or to compare and lock the problem through cross replacement.



PID Parameter adjustment guidelines

※ Rigid and non rigid mechanisms

1. Rigid mechanism: screw rod, rack, reducer, cam and other connecting mechanisms.
2. Non rigid mechanism: belt, steel wire and other connecting mechanisms.

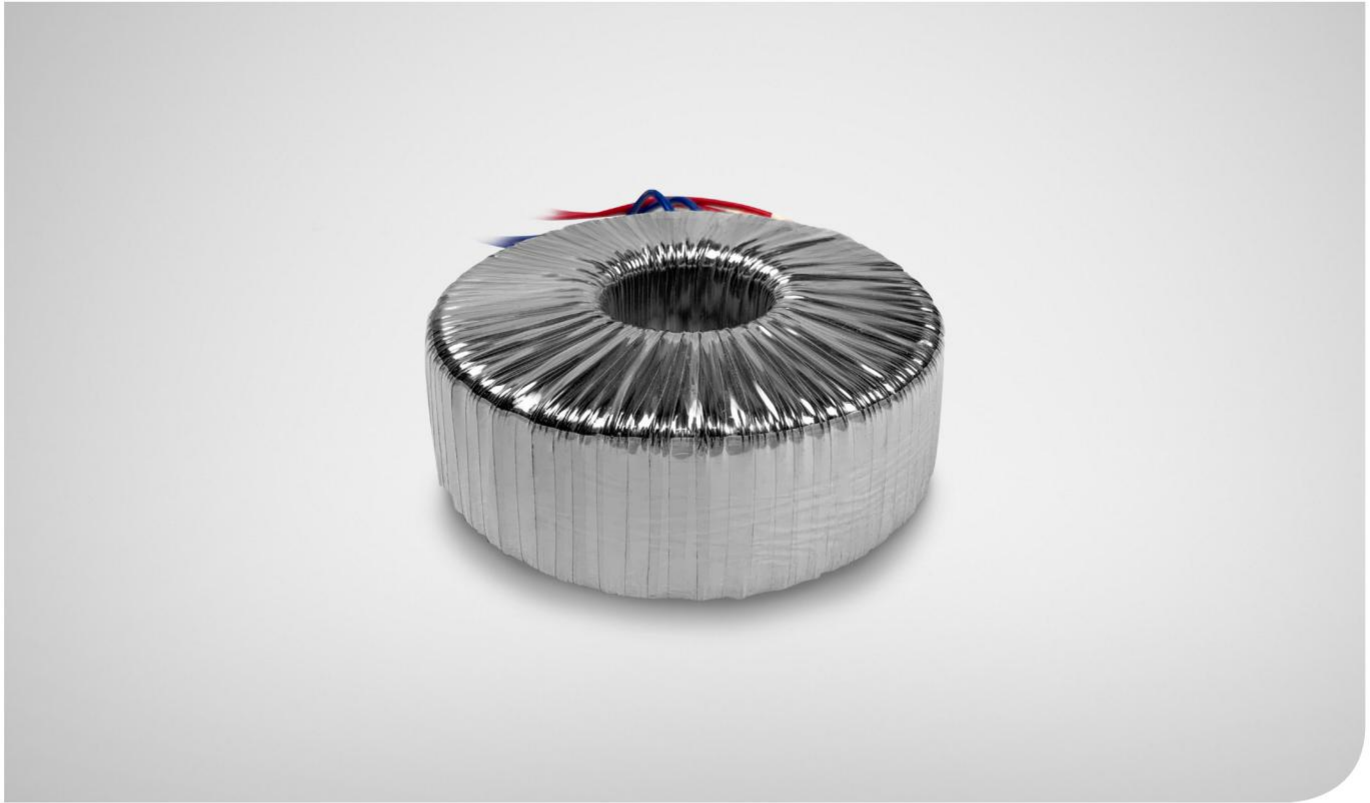
※ Principle of parameter adjustment of rigid mechanism: rigid enough, fast response, motor mechanism running without shaking or abnormal sound

1. Position loop proportional gain: no overshoot and shaking when reaching the position. If the shaking in place is large, adjust the parameters to a small value, about 1000 is recommended. If the response time is too long, it is recommended to gradually adjust upward to about 3000.
2. Speed loop proportional gain: on the premise of no abnormal noise of the motor, the larger the parameter adjustment, the faster the speed response. The initial value is recommended to be between 5000–10000.
3. Speed loop integral gain: determines the steady-state time after the motor runs to the target speed. The greater the speed, the better the motor shaft locking effect. Rigid connections are recommended between 1000 and 3000. If there is a stuck phenomenon during operation, the speed proportional gain will continue to increase, and the speed integral gain is recommended to be adjusted to about 300 or less.
4. Current loop proportional gain: current refresh response, factory default 1000. Excessive adjustment is prone to mechanical noise.

※ Suggestions on parameter adjustment of non rigid mechanism

1. Position loop proportional gain: the position proportional gain is directly related to the speed of the motor running to the target position. If the shaking in place is large, the parameters should be adjusted to a small value, about 1000 is recommended, or adjust to a small value again, and other parameters of the position ring should be 0.
2. Speed loop proportional gain: the greater the speed loop proportional gain, the faster the response to overcome the load inertia, and the more stable the speed. The greater the inertia, the greater the parameter adjustment. It is recommended to adjust between 5000 and 30000.
3. Speed loop integral gain: the speed integral determines the adjustment time of stable speed. Excessive speed will cause speed divergence and the motor swings back and forth. It is recommended to adjust it by about 100.
4. Current loop proportional gain: it is recommended to adjust between 100 and 1000.
5. Integral gain of current loop: the recommended value is 1000, and the integral gain of current loop is recommended to be the same or less than 5 times as the proportional gain of current loop.

※ If the inertia of the motor is relatively large, the range of parameters will be wider during parameter adjustment, and it is easier to find suitable parameters for adjustment, which can be flexibly adjusted according to the on-site mechanism and process requirements.



Power products - Transformers

High reliability transformer, small magnetic leakage, high conversion efficiency, wide frequency response, long service life and low temperature.

Selection list

Model	Power (W)	Output voltage (VAC)	Current (A)	Dimension (mm)
VT500-36	500	36	64	130
VT1000-36	1000	36	70	156
VT1500-36	1500	36	75	175
VT2000-36	2000	36	90	172



Power products - Switching power supply

Application characteristics

- ※ Wide input voltage range
- ※ Overload, short circuit and over temperature protection
- ※ High efficiency, high cost performance, low operating temperature
- ※ Full load aging test, high reliability
- ※ Standard industrial size

Selection list

Product model	Power	Input voltage	Output voltage	Output current	Ripple (Vp-p)	Efficiency
DP120V24	120W	110/220VAC	24V	5A	≤ 1%	>80%
DP200V24	200W	110/220VAC	24V	8.3A	≤ 1%	>80%
DP200V36	200W	110/220VAC	36V	5.6A	≤ 1%	>80%
DP400V24	400W	110/220VAC	24V	17A	≤ 1%	>80%
DP400V36	400W	110/220VAC	36V	11A	≤ 1%	>80%
DP400V48	400W	110/220VAC	48V	8.3A	≤ 1%	>80%

旭隆科技（东莞）有限公司
Xulong Technology(Dongguan)Co.,
[Http://www.xulongk.cn](http://www.xulongk.cn)
[Http://www.xulongk.com](http://www.xulongk.com)
E-mail:xulongk@yeah.net

Room 802, No.32 Yucai Road, Nancheng Street, Dongguan
City, Guangdong Province,China
Tel : 0769-23028839
Mobil: +86-13925507910
WeChat:13925507910



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