

# DA200 AC Servo System



CE

invt



Company profile.....	2
User interference.....	3
Function and performance.....	4
User-friendly.....	5
ServoPlorer V4.0.....	6
Model.....	8
Technical specification.....	9
Wiring.....	12
Motor model.....	14
Motor specification.....	15
Motor installation dimension.....	16
Motor torque-speed.....	18
Cable model.....	19
Order guideline.....	21
Service and sales network.....	22

# / Company profile

INVT INDUSTRIAL TECHNOLOGY (SHANGHAI) CO.,LTD. (formerly Shanghai KINWAY Technologies, Inc) is established in 2005 by several Chinese doctors from the U. S. who are outstanding in the field of automatic control. As the wholly-owned subsidiary of INVT(002334), this sino-foreign joint venture company has promoted the decades of successful technology development and management experience in the famous overseas company to China, focused on servo drive products and system integration, integrated the research and development, production, sales and service, to rank in the national high and new technology enterprises and innovative companies in Shanghai.

Relying on the core leading international technology of permanent magnet synchronous motor, power electronics, digital control, sensors, network and field bus, the company has a series of high-end servo systems and special dedicated computer control system. Its products of INVT and KINWAY are widely used in the field of CNC machine tools, printing and packaging machinery, electronic equipment, industrial robots, plastic machinery, textile printing and dyeing. Its technology is in the leading level and some of them even rival the international first-class level.

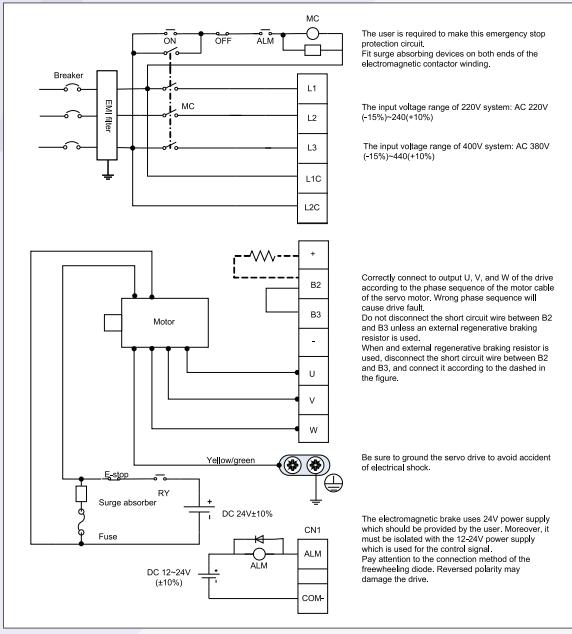
The sharp sense to market and needs ensure the creativity and flexibility of the company's products; advanced integrated product development management, comprehensive product research and development, testing and automation, informationization production ensure the high reliability and performance of the company's products; distributed domestic offices, after-sales service center and technical support team provide solutions, technical training and professional security services support to customers.

The company is striving to enhance the equipment manufacturing industry through leading servo drive and automation technology, to create more value and competitiveness for customers.

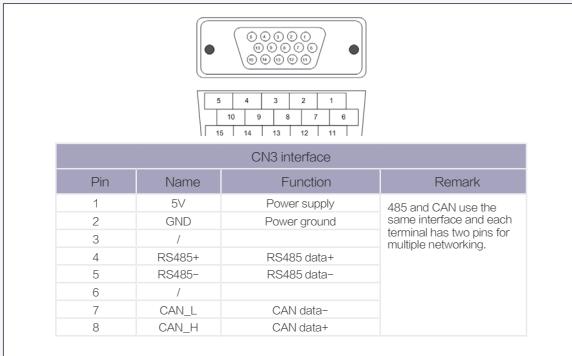


# User interface

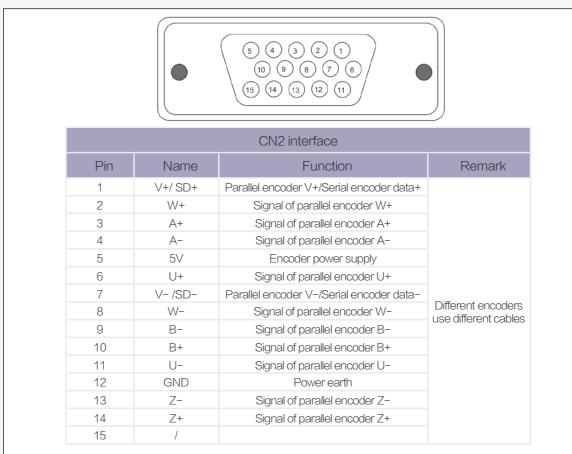
## Terminals of the main circuit



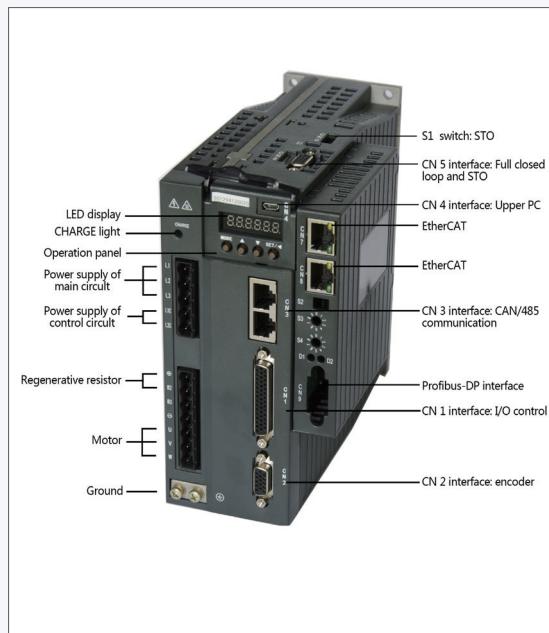
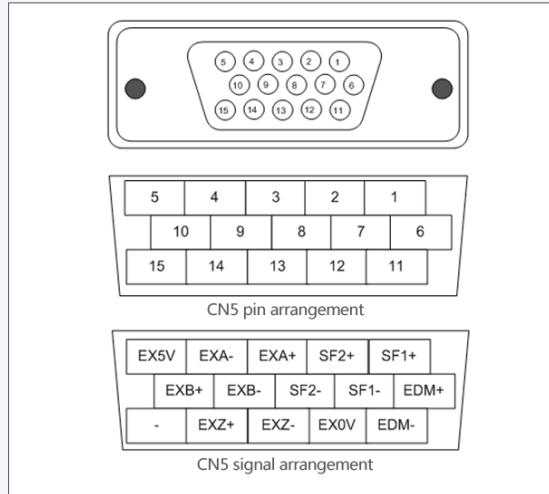
## CN3 terminals



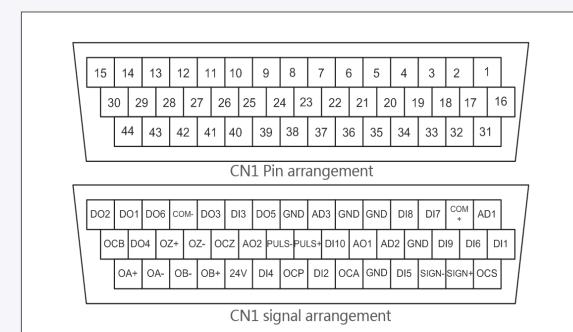
## CN2 terminals



## CN5 terminals



## CN1 terminals



# / Function and performance

## 1 Rapid speed response

Speed response frequency is more than 2.0 kHz, reducing the adjusting time and ranking the top in the circle.

## 2 Excellent positioning accuracy

2500-wire incremental, 17/20-bit absolute and 16-bit rotating transformer encoders are applied to increase the positioning accuracy and enhance the stability.

## 3 Close-loop control

Support the external encoder or grating ruler for full closed loop control and the gap shadow reduction and higher positioning accuracy.

## 4 Internal position control

128-step internal position control and simple programming through terminals combination for less PLC units and cost.

## 5 Various communication interface

Modbus, CANopen, PROFIBUS-DP, EtherCAT, MotionNet and other bus communication, long-distance, high-speed multi-axis synchronous control through networking.

## 6 CAM function

Embedded CAM function for the flying shear, paper printing, textile sending and so on. The user can make or modify the internal cam curve automatically or manually through PC software.

## 7 Input and output signal distribution

channels of digital and 6 channels of analog input and output signal can be distributed by parameters. ServoPlorer software can be modified by special interface.

# Easy operation

## 1 The load inertia identification

Online and offline inertia identification, Automatic identification corresponds to the internal gain settings to achieve the optimal performance and shorten the adjusting time of the system.

## 2 Simple gain adjustment and gain switching

The speed loop, position loop gain and filtering time constant can be set by the setting of rigid in different applications. The rigid can be set to simplify the commissioning, support two groups of gain setting and the setting can be switched by IO input, communication and internal variable for the flexible demand during the processing.

## 3 Automatic/manual notch filter

Support automatic detection resonance frequency and automatic trap setting, to reduce the mechanical resonance noise and vibration caused by mechanical resonance.

There are two groups of automatic and manual notch filters respectively , the setting frequency is 50~5000Hz and can be set to the notch depth.

## 4 Automatic/manual vibration-controlling filter

Overcome the low-frequency mechanical resonance and the vibration of long swing arm mechanism effectively through special low-frequency vibration suppression algorithm.

## 5 Speed observer

Internal speed observer to improve the accuracy and stability of speed control.

## 6 Disturbance control

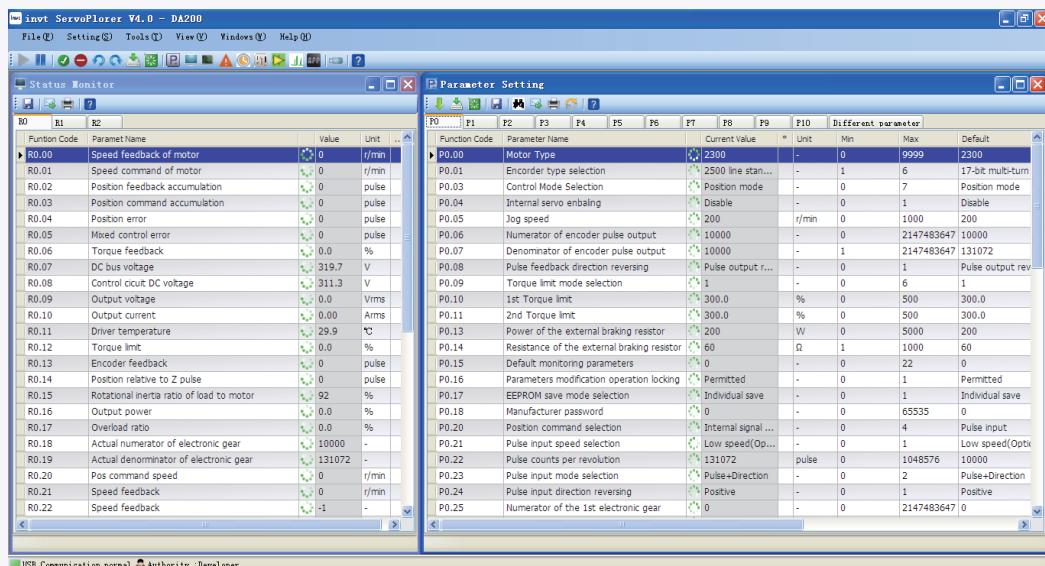
To compensate the impact of performance control when the load disturbance and parameter changes, increase the robustness of the system and improve the command response.

## 7 The friction torque compensation

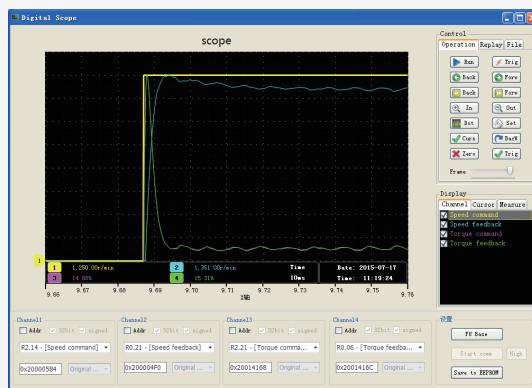
The function of friction torque compensation, to reduce the impact of static friction when direction changing and improve the command response when low speed operation.

# Powerful PC software — ServoPlover V4.0

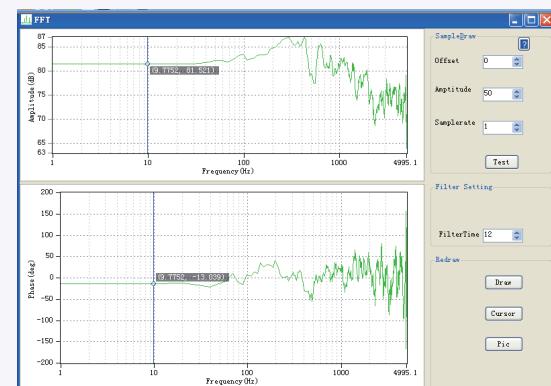
Easy parameters setting and monitoring operation interface



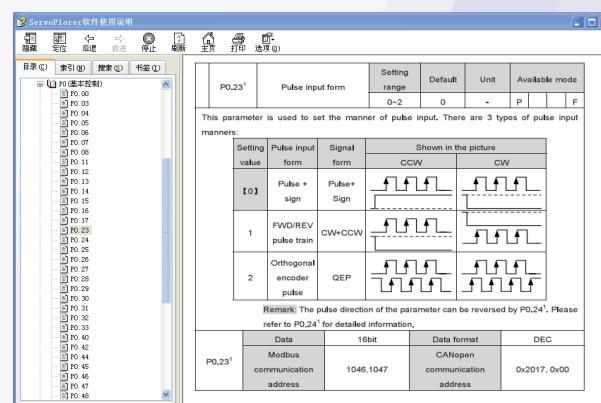
Online oscilloscope monitoring with USB communication for 4-channel waves (125us)



Frequency characteristic test for the system resonance frequency



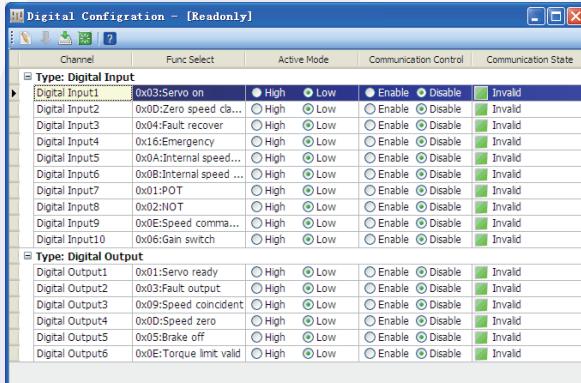
Built-in detailed parameters instructions



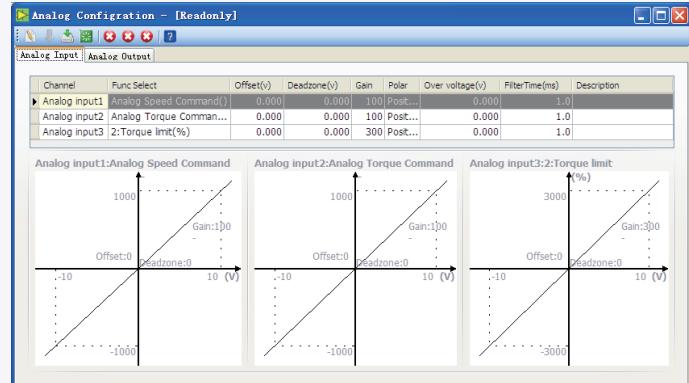
# Powerful PC software — ServoPlorer V4.0

## Easy parameters setting and monitoring operation interface

The valid logic and function configuration can be selected by the digital input and output signal



The parameters of gain, zero deviation and dead zone can be set through the analog input and output signal



Read the real-time fault information and fault record

Error Code	Name	Value	Unit
<b>Error Record: 1</b>			
22-0 : Position error over high fault	Power on time	0/0/1:8:0	s
	Run time	0/0/0/13:13:23	s
	Speed feedback of motor	5002	r/min
	Speed command of motor	5000	r/min
	Position feedback accumulation	946571	pulse
	Position command accumulation	9111000	pulse
	Position error	8164532	pulse
	Torque feedback	17.3	%
	DC bus voltage	315.5	V
	Output voltage	189.1	Vrms
	Output current	0.49	Arms
<b>Error Record: 2</b>			
<b>Error Record: 3</b>			
<b>Error Record: 4</b>			

Save the parameters for later copying through the mass reading function

Group	Func Code	Name	Type	Real...	Actual V...	Resolution	Min	Max	Unit	Description
P0	P0.00	Motor Type	int16	0	0	0	9999	-	-	
P0	P0.01	Encoder type selection	int16	0	0	0	1	8	-	
P0	P0.03	Control Mode Selection	int16	0	0	0	0	9	-	
P0	P0.05	Jog speed	int16	0	0	0	1000	rf...	-	
P0	P0.06	Numerator of encoder pulse output	int32	0	0	0	0	214...	-	
P0	P0.07	Denominator of encoder pulse output	int32	0	0	0	1	214...	-	
P0	P0.08	Pulse feedback direction reversing	int16	0	0	0	0	1	-	
P0	P0.09	Torque limit mode selection	int16	0	0	0	0	6	-	
P0	P0.10	1st Torque lmt	int16	0	0	1	0	500	%	
P0	P0.11	2nd Torque lmt	int16	0	0	1	0	500	%	
P0	P0.13	Power of the external braking resistor	int16	0	0	0	0	5000	W	
P0	P0.14	Resistance of the external braking resistor	int16	0	0	0	1	1000	Ω	
P0	P0.15	Default monitoring parameters	int16	0	0	0	0	22	-	
P0	P0.16	Parameters modification operation locking	int16	0	0	0	0	1	-	
P0	P0.17	EEPROM Save mode selection	int16	0	0	0	0	1	-	
P0	P0.20	Position command selection	int16	0	0	0	0	3	-	
P0	P0.22	Pulse counts per revolution	int32	0	0	0	0	104...	-	
P0	P0.23	Pulse input mode selection	int16	0	0	0	0	2	-	
no	no.24	Output result direction conversion	int16	0	0	0	0	1	-	

Various application controls for commissioning

Program JOG

Notice  
Parameter Modify  
Parameter Writer  
Perform

Mode select  
Motor select: 0 (Range: 0-5)  
Speed setting  
Movement set: 50000 (Range: 103741824-50000000)  
Speed set: 500 (Range: 0-5000)  
Software restrict  
Negative res: 0 (Range: -2147483647 to 2147483647)  
Positive res: 1 (Range: -2147483647 to 2147483647)

Time and cost  
acc/dece: 100 (Range: 0-10000)  
Stop/gait time: 100 (Range: 0-10000)  
Run times: 1 (Range: 0-10000)

Inertia identification  
Program JOG  
PTP Control  
Homing Control  
Trap wave  
Others

# Naming of the drive

**SV-DA200-0R4-2-S 5**

**A      B      C      D      E      F**

A	
Sign	Product
SV	Servo series products

D	
Sign	Input voltage
2	220VAC
4	400VAC

B	
Sign	Product Series
DA200	Product series

E	
Sign	Machine type
E	Pulse
S	Standard
C	CANopen bus
P	PROFIBUS-DP bus
N	EtherCAT bus
M	MotionNet bus
T	ECAM

C	
Sign	Power ratings
R05	50W
0R1	100W
0R2	200W
0R4	400W
0R7	750W
1R0	1.0kW
1R5	1.5kW
2R0	2.0kW
3R0	3.0kW
4R4	4.4kW
5R5	5.5kW
7R5	7.5kW
011	11kW
015	15kW

F	
Sign	Available encoder type
Null	2500-wire standard incremental
	2500-wire multiplexed data line incremental
	17-bit single circle absolute value
	17-bit multiple circle absolute value
5	20-bit single circle absolute value
	20-bit multiple circle absolute value
7	12-bit rotary transformer
8	16-bit rotary transformer

## Difference between machine types

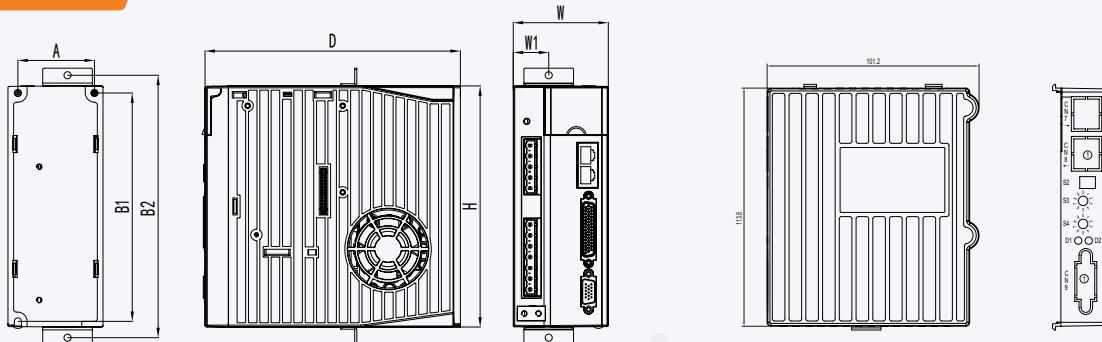
Code	Type	Pulse input	16bit analog	Full closed-loop	STO	RS485	Canopen	Profibus-dp	Ethercat	MotionNet	ECAM
E	Pulse	✓	X	✓	X	✓	X	X	X	X	X
S	Standard	✓	✓	✓	✓	✓	X	X	X	X	X
C	CAN	X	X	X	X	X	✓	X	X	X	X
P	PROFIBUS-DP	X	X	X	X	X	X	✓	X	X	X
N	EtherCAT	X	X	X	X	X	X	X	✓	X	X
M	MotionNet	X	X	✓	X	✓	X	X	X	✓	X
T	ECAM	✓	X	✓	X	✓	X	X	X	X	✓

# Power ratings and volumes

## Power ratings and volumes

Model	Input		Output		Volume
	Voltage (V)	Power (kW)	Rated current (A)		
SV-DA200-0R2-2	Single/Three phase 220	0.2	1.8		A
SV-DA200-0R4-2	Single/Three phase 220	0.4	2.8		A
SV-DA200-0R7-2	Single/Three phase 220	0.75	4.5		B
SV-DA200-1R0-2	Single/Three phase 220	1.0	5		B
SV-DA200-1R5-2	Three phase 220	1.5	7.6		B
SV-DA200-2R0-2	Three phase 220	2.0	10		D
SV-DA200-3R0-2	Three phase 220	3.0	13		D
SV-DA200-4R4-2	Three phase 220	4.4	16.5		D
SV-DA200-1R0-4	Three phase 400	1.0	3.5		B
SV-DA200-1R5-4	Three phase 400	1.5	4.5		B
SV-DA200-2R0-4	Three phase 400	2.0	6.5		C
SV-DA200-3R0-4	Three phase 400	3.0	8.5		C
SV-DA200-4R4-4	Three phase 400	4.4	12		D
SV-DA200-5R5-4	Three phase 400	5.5	16		D

## Drive dimension



## Braking resistors

Model	External dimension			Installation dimension				Installation (mm)
	H (mm)	W (mm)	D (mm)	A (mm)	B1 (mm)	B2 (mm)	W1 (mm)	
SV-DA200-0R2-2								
SV-DA200-0R4-2	170	45	170	31	162	185	22.5	M4(Φ5)
SV-DA200-0R7-2								
SV-DA200-1R0-2	170	67	180	54	162	185	25	M4(Φ5)
SV-DA200-1R5-2								
SV-DA200-2R0-2								
SV-DA200-3R0-2	230	92	190	79	222	245	25	M4(Φ5)
SV-DA200-4R4-2								
SV-DA200-1R0-4								
SV-DA200-1R5-4	170	67	180	54	162	185	25	M4(Φ5)
SV-DA200-2R0-4								
SV-DA200-3R0-4	170	84	180	71	162	18	25	M4(Φ5)
SV-DA200-4R4-4								
SV-DA200-5R5-4	230	92	190	79	222	245	25	M4(Φ5)

Model	Embedded braking resistor	Min. resistance of external braking resistors
SV-DA200-0R2-2	/	60Ω
SV-DA200-0R4-2	/	60Ω
SV-DA200-0R7-2	30Ω 60W	30Ω
SV-DA200-1R0-2	30Ω 60W	30Ω
SV-DA200-1R5-2	30Ω 60W	20Ω
SV-DA200-2R0-2	15Ω 120W	15Ω
SV-DA200-3R0-2	15Ω 120W	15Ω
SV-DA200-4R4-2	15Ω 120W	15Ω
SV-DA200-1R0-4	60Ω 60W	60Ω
SV-DA200-1R5-4	60Ω 60W	60Ω
SV-DA200-2R0-4	60Ω 60W	40Ω
SV-DA200-3R0-4	60Ω 60W	30Ω
SV-DA200-4R4-4	30Ω 120W	30Ω
SV-DA200-5R5-4	30Ω 120W	30Ω

# Technical specifications

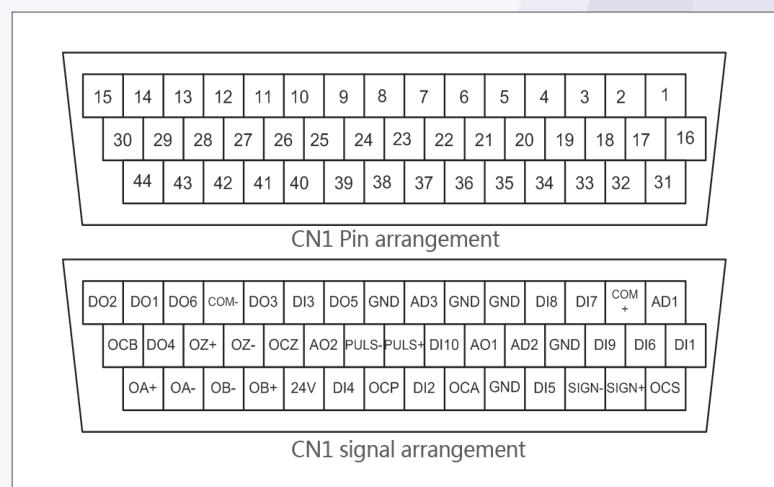
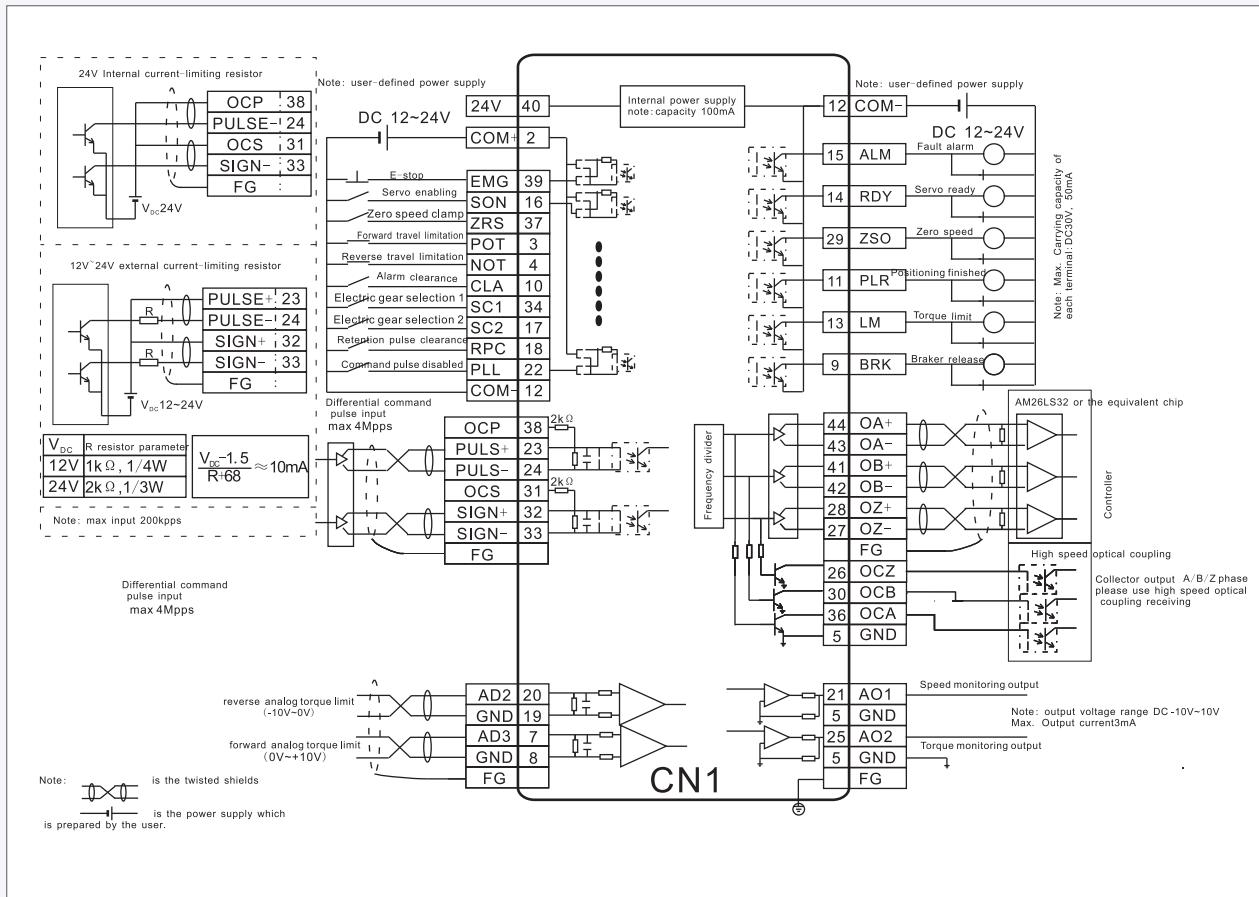
DA200 series servo drives (50W~15kW)		
Specifications		Description
Power supply	220V system input voltage	1P/3P AC 220V( -15%)~240(+10%) 47Hz ~ 63Hz
	400V system input voltage	3P AC 380V( -15%)~440(+10%) 47Hz ~ 63Hz
Interface	Control signal	Input 10 inputs, 30 kinds of function can be configured by some parameters, Invalid, forward direction drive disabled, reverse direction drive disabled, servo enabling, alarm clearing, control mode switching, gain switching, retention pulse clear, command pulse prohibited, torque limit switch, internal speed command 1, internal speed command 2, internal speed command 3, zero speed clamp, speed command sign, torque command sign, internal position command 1, internal position command 2, internal position command 3, internal position command 4, external fault, inertia ratio switching, E-stop, HOME switch input, HOME trigger, molecule 1 of electronic gear ratio, molecule 2 of electronic gear ratio, bit control trigger, the vibration control switch input, fast stop, bit control stop.
		Output 6 outputs (15 kinds of function can be configured by some parameters, invalid, servo ready output, servo operation output, fault output, reserved, external brake signals clear, position command or not, positioning finished, control mode switch state, speed matching, speed arrival, speed limiting, speed command or not, speed zero output, torque limiting, zeroing finished, torque arrival).
Control mode	Analog value	Input 3 inputs (1 16bitA/D input, 2 12bitA/D inputs)..
		Output 2 outputs (analog monitoring output)
	Pulse signal	Input 2 inputs (open collector input/differential input)
		Output 6 outputs (3 differential outputs, 3 open collector outputs)
	Communication	USB 1:1 communication upper PC software (standard)
		RS485 1:n communication (standard)
		CANopen 1:n communication (standard)
		Profibus-DP 1:n communication (standard)
		EtherCAT 1:n communication (standard)
	Safety terminals	STO Safe torque off (to the latest European safety standards) (optional)
	1. Position control; 2. Speed control; 3. Torque control; 4. Position/Speed mode switching; 5. Speed/Torque mode switching; 6. Position/Torque mode switching; 7. Full closed loop control; 8. CANopen mode; 9. EtherCAT mode; 10. MotionNet mode	
Functions	Position control	Control input 1. Retention pulse clear; 2. Command pulse input disabled; 3. Command switch frequency doubling; 4. Vibration control switching
		Control output Output after positioning finished
		Pulse input Max. pulse input frequency 1 optical coupling: differential input 4Mpps, open collector input 200Kpps
		Pulse input mode 1. Positive/Negative direction; 2. A phase/B phase; 3. Command pulse/Command direction
		Electric gear 1/10000~1000 times
		Filter 1 Command smoothing filter; 2 FIR filter
		Analog input Torque command input Can be independently arrange clockwise/ counterclockwise torque limit
		Vibration control Control the forward and whole machine vibration of 5~200Hz
		Pulse output 1. Arbitrary frequency division settings under the encoder resolution 2. B phase reverse

# Technical specifications

DA200 series servo drives ( 50W~15kW )			
Specifications		Description	
Functions	Speed control	Control input	1. Internal command speed 1; 2. Internal command speed 2; 3. Internal command speed 3; 4. Zero speed clamp
		Control output	Speed arrival
		Analog input	Speed command input of the analog voltage DC ± 10V setting
			Torque limit input Can be independently arrange clockwise/ counterclockwise torque limit
		Pulse input	Speed command input after setting to the pulse frequency
		Internal speed commands	8 step speed can be switched according to the external control input
		ACC/DEC adjustment of the speed command	ACC/DEC time setting and S curve setting
		Zero speed clamp	In the speed mode, it can set the operation mode as the speed mode and position mode
		Speed command filter	A delay filter of analog input speed command
		Speed command zero drift control	Zero drift control to the outside interference Precision 0.3mV
Torque control	Torque control	Control input	Zero speed clamp input
		Control output	Speed arrival
		Analog input	Torque command input Analog torque command input, gain and polarity setting to the analog voltage Precision 4.88mV
			Speed limit input Analog speed limit
		Speed limit	Set the speed limit by parameters
		Torque command filte	A delay filter of analog input torque command
		Torque command Zero drift control	Zero drift control to the outside interference Precision 4.88mV
		Plan points	16-bit internal position planning, the positioning can be controlled through the communication
		Internal position plan	1. Position; 2. Speed; 3. ACC time; 4. DEC time; 5. Stop timer; 6. Various state output; 7. Operational mode
		Origin returning	1. LS signal; 2. Z phase signal; 3. LS signal+Z phase signal; 4. Torque limit signal
Protection	Hardware protection	Overvoltage, undervoltage, overcurrent, overspeed, overload, braking resistor overload, overheating, encoder fault and so on	
	Software protection	Memory and initialization fault, the I/O distribution abnormalities and large position deviation	
	Protection and fault record	1. 10 kinds of fault can be recorded 2. Can record the current key parameters when fault occurs	
Environment	Temperature	Temperature	0 ~ 45°C
		Storage temperature	-20 ~ 80°C (no freezing)
	Humidity	Operation/storage: ≤90%RH (no condensation)	
	IP degree	IP20	
	Altitude	Below 1000m	
	Vibration	≤5.88m/s², 10 ~ 60Hz (Not allowed to work at the resonance point)	

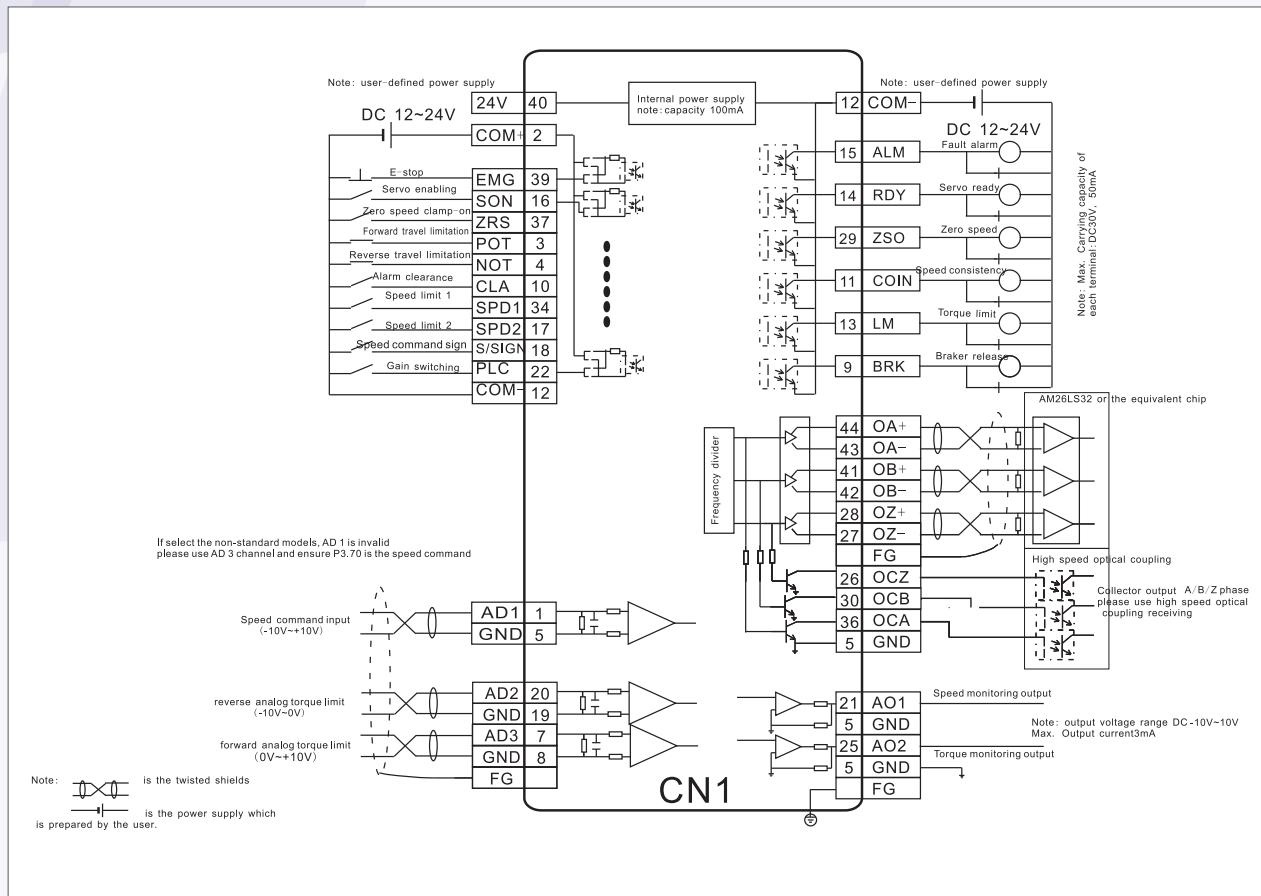
# / Standard wiring

The position /close-loop mode (available to the pulse input control)

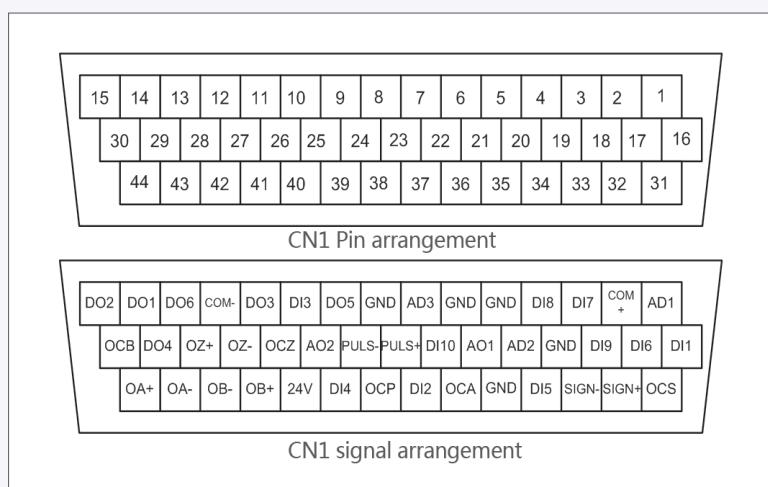


# Standard wiring

The speed/torque mode (available to the analog input control)



## CN1 terminals



# / Servo motor model

## Naming of the motor

**SV-ML 06-0R4 G-2-4 A 0**

①	符号	Product
	SV	Servo system

②	Sign	Inertia degree
	ML	general servo motor of small inertia
	MM	general servo motor of medium inertia
	MH	general servo motor of big inertia

③	Sign	Base
	06	60
	08	80
	11	110
	13	130
	18	180

Sign	Rated speed
A	1000rpm
B	1500rpm
E	2000rpm
F	2500rpm
G	3000rpm

Sign	Rated power
R05	50W
0R1	100W
0R2	200W
0R4	400W
0R7	750W
1R0	1.0kW
1R5	1.5kW
2R0	2kW
3R0	3.0kW
4R4	4.4kW
5R5	5.5kW
7R5	7.5kW
011	11kW
015	15kW

Sign	Rated speed
A	1000rpm
B	1500rpm
E	2000rpm
F	2500rpm
G	3000rpm

Sign	Voltage degree
2	220VAC
4	400VAC

Sign	Encoder type
1	2500-wire standard increments
2	2500-wire multiplexed data line incremental
3	17-bit single circle absolute value
4	17-bit multiple circle absolute value
5	20-bit single circle absolute value
6	20-bit multiple circle absolute value
7	12-bit rotary transformer
8	16-bit rotary transformer

Sign	Axis connection
A	Solid with screw hole and key (standard)
B	Solid axis

Sign	Optional parts
0	With oil seal and no breaker
1	No breaker and oil seal
2	With oil seal and breaker
3	With breaker and no oil seal

Note: currently 20-bit encoder motor only covers 200W, 400W and 750W single-circle absolute motors and 12/16-bit rotating transformer motors are not in the market.

# Servo motor parameters

## Motor specification

Motor model	Rated power (kW)	Rated current(A)	Instantaneous maximum currentA)	Rated torque(Nm)	Instantaneous maximum torque(Nm)	Rated speed(rpm)	Highest speed(rpm)	Rotor inertia (Kg.cm <sup>2</sup> )	Voltage		
<b>ML series small inertia</b>											
SV-ML06-0R2G-2-□□□	0.2	1.5	4.5	0.64	1.92			0.21	220		
SV-ML06-0R4G-2-□□□	0.4	2.8	8.4	1.27	3.8	3000	6000	0.32	220		
SV-ML08-0R7G-2-□□□	0.75	4.5	13.5	2.4	7.2			1.26	220		
SV-ML08-1R0F-2-□□□	1.0	4.4	13.2	4.0	12.0	2500	3000	2.97	220		
<b>MM series medium inertia</b>											
SV-MM13-1R0E-2-□□□	1.0	4.8	14.4	4.77	14.3	2000	3000	6.3	220		
SV-MM13-1R5E-2-□□□	1.5	7.6	22.8	7.16	21.5			9.36	220		
SV-MM13-2R0E-2-□□□	2.0	9.5	28.5	9.55	28.6			12.16	220		
SV-MM13-3R0E-2-□□□	3.0	13.6	40.8	14.3	42			18.0	220		
SV-MM13-1R0F-2-□□□	1.0	5.0	15	5.0	15			8.5	220		
SV-MM13-1R5F-2-□□□	1.5	7.5	21.5	7.7	22	2500	3000	12.6	220		
SV-MM13-2R0F-2-□□□	2.0	10	30	10	30			15.3	220		
SV-MM13-1R0E-4-□□□	1.0	2.8	8.4	4.77	14.3	2000	3000	6.3	380		
SV-MM13-1R5E-4-□□□	1.5	4.5	13.5	7.16	21.5			9.36	380		
SV-MM13-2R0E-4-□□□	2.0	5.5	16.5	9.55	28.6			12.16	380		
SV-MM13-3R0E-4-□□□	3.0	7.8	23.4	14.3	42			18.0	380		
<b>MH series high inertia</b>											
SV-MH06-0R2-2-□□□	0.2	1.5	4.5	0.64	1.92	1500	2000	0.42	220		
SV-MH06-0R4-2-□□□	0.4	2.8	8.4	1.27	3.8			0.67	220		
SV-MH08-0R7-2-□□□	0.75	4.5	13.5	2.4	7.2			2.5	220		
SV-MH13-0R8B-2-□□□	0.85	5.5	15	5.41	16.2			14.6	220		
SV-MH13-1R3B-2-□□□	1.3	8.2	24.6	8.34	25.2			20.5	220		
SV-MH13-0R8B-4-□□□	0.85	3.2	9.6	5.41	16.2			14.6	380		
SV-MH13-1R3B-4-□□□	1.3	4.8	14.4	8.34	25.2			20.5	380		
<b>MM series medium inertia</b>											
SV-MM18-3R0B-4-□□□	3.0	7.5	18.75	19.0	47.0	1500	2000	38	380		
SV-MM18-4R4B-4-□□□	4.4	10.0	25.0	27.0	67.0			61	380		
SV-MM18-5R5B-4-□□□	5.5	12.0	30.0	35.0	70.0			86	380		
Insulation class	Class F(155°C)										
Protection degree	IP65										
Environment	Temperature: -20°C~50°C ( no ice ) ; Humidity: 90%RH以下 ( no condensation )										

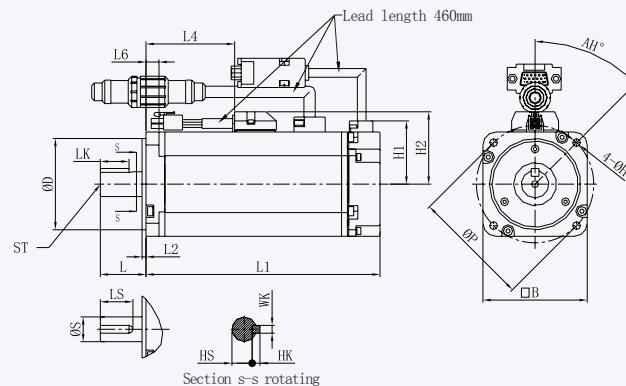
# Installation dimension

## Appearance and dimension of 60 bases (unit:mm)

200W, 400W ( Vn = 3000rpm, Vmax = 6000rpm )

Note: The motor structure may change to the different design. Please contact with the company to confirm the dimension before ordering.

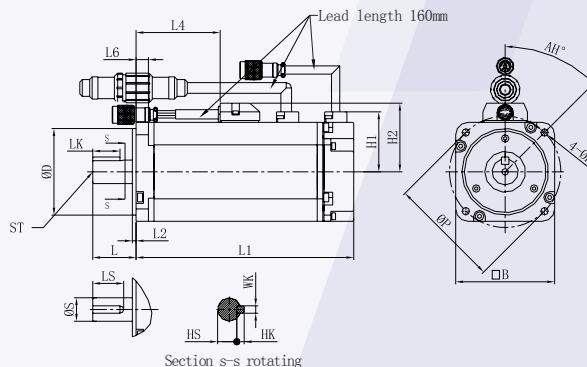
Motor model	Encoder	The flange dimensions(mm)								The shaft and key dimensions(mm)						L1 (mm)	L4 (mm)	H1 (mm)	H2 (mm)	ST (mm)	Quality (kg)	
		D	L2	L6	P	H	AH	B	S	L	WK	HK	LK	HS	LS							
SV-ML06-0R2G-2-1A0	2500-wire															114.5	41					1.4
SV-MH06-0R2G-2-1A0																120	46.5					1.6
SV-ML06-0R2G-2-1A2																151.5	41					1.6
SV-ML06-0R4G-2-1A0																138.5	65					1.8
SV-MH06-0R4G-2-1A0																146.5	73					2.0
SV-ML06-0R4G-2-1A2																175.5	65					2.0
SV-ML06-0R2G-2-4A0		50 <sup>+0.025</sup>	3	6.5	70	5.5	45	60	14 <sup>+0.011</sup>	30	5	5	22.5	11	25	114.5	41	38.5	45.5	M5 depth 10		1.4
SV-ML06-0R2G-2-4A2																151.5	41					1.6
SV-ML06-0R4G-2-4A0																138.5	65					1.8
SV-MH06-0R4G-2-4A0																146.5	73					2.0
SV-ML06-0R4G-2-4A2	17 / 20-bit															175.5	65					2.0
SV-ML06-0R4G-2-5A0																138.5	65					1.8
SV-ML06-0R4G-2-5A2																175.5	65					2.0



## Appearance and dimension of 60 bases (unit:mm)

750W ( Vn = 3000rpm, Vmax = 6000rpm ) 1.0kW ( Vn = 2500rpm, Vmax = 3000rpm )

Motor model	Encoder	The flange dimensions(mm)								The shaft and key dimensions(mm)						L1 (mm)	L4 (mm)	H1 (mm)	H2 (mm)	ST (mm)	Quality(kg)	
		D	L2	L6	P	H	AH	B	S	L	WK	HK	LK	HS	LS							
SV-ML08-0R7G-2-1A0	2500-wire															140	68					3.0
SV-MH08-0R7G-2-1A0																151	79					3.3
SV-ML08-0R7G-2-1A2		70 <sup>+0.03</sup>														186.5	68					3.5
SV-ML08-0R7G-2-4A0			3	10	90	7	45	80	19 <sup>+0.013</sup>	35	6	6	22	15.5	25	140	68	48.5	55.5	M5 depth 10		3.0
SV-ML08-0R7G-2-5A0																140	68					3.0
SV-ML08-0R7G-2-4A2																186.5	68					3.5
SV-ML08-0R7G-2-5A2																186.5	68					3.5
SV-ML08-1R0F-2-1A0		2500-wire	3	8	90	6	45	80.4		35	6	6	22	15.5	25	191	/	49.5	49.8	M5 depth 22		4.1
SV-ML08-1R0F-2-1A2																231	/					5.1



# Installation dimension

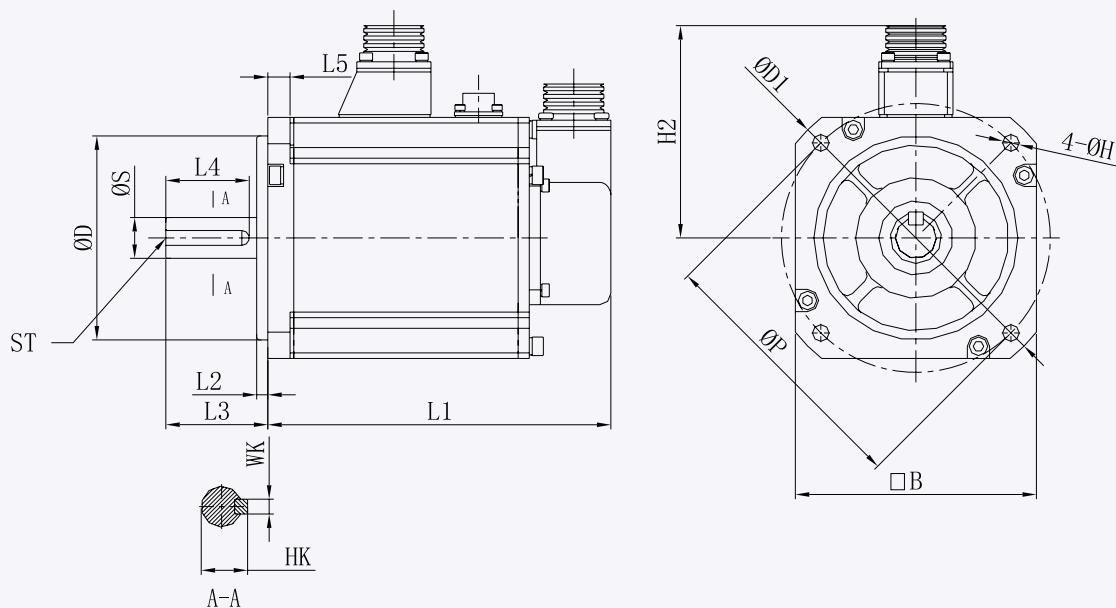
## 130/180机座电机外形尺寸(单位:mm)

130series: 1.0kW、1.5kW、2.0kW、3kW (Vn = 2000/2500rpm, Vmax = 3000rpm)  
850W、1.3kW (Vn = 1500rpm, Vmax = 2000rpm)

180series: 3.0W, 4.4kW, 5.5kW (Vn = 1500rpm, Vmax = 2000rpm)

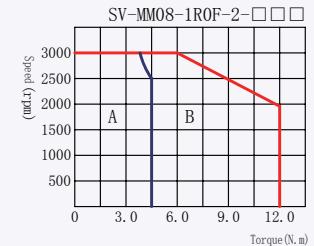
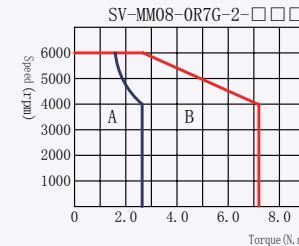
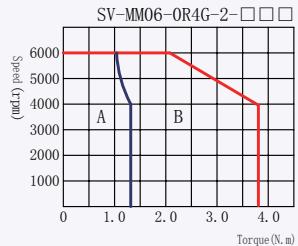
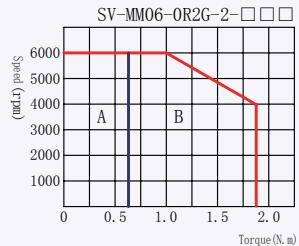
Note: The motor structure may change to the different design. Please contact with the company to confirm the dimension before ordering.

Motor model	Dimension table														Quality (kg)	
	D	L1	L2	L3	L4	L5	S	WK	HK	B	D1	P	H	H2	ST	
SV-MM13-1R0E-□-□A0		143														3.0
SV-MM13-1R0E-□-□A2		185														3.3
SV-MM13-1R5E-□-□A0		159														3.5
SV-MM13-1R5E-□-□A2		201														3.0
SV-MM13-2R0E-□-□A0		175														3.0
SV-MM13-2R0E-□-□A2		217														3.5
SV-MM13-3R0E-□-□A0		207														3.5
SV-MM13-3R0E-□-□A2		249														4.1
SV-MH13-0R8B-□-□A0	110h7	167	6	55	45	12	22h7	6h9	24.5	130	165	145	9	114.5	M6 depth 22	5.1
SV-MH13-0R8B-□-□A2		209														
SV-MH13-1R3B-□-□A0		202														
SV-MH13-1R3B-□-□A2		244														
SV-MM13-1R0F-2-□A0		166														
SV-MM13-1R0F-2-□A2		223														
SV-MM13-1R5F-2-□A0		179														
SV-MM13-1R5F-2-□A2		236														
SV-MM13-2R0F-2-□A0		192														
SV-MM13-2R0F-2-□A2		249														
SV-MM18-3R0B-4-□A0		232														20.5
SV-MM18-3R0B-4-□A2		304														22.5
SV-MM18-4R4B-4-□A0	114.3h7	262	3.2	65	54	18	35h7	10h9	38	180.5	233	200	13.5	138.5		25.5
SV-MM18-4R4B-4-□A2		334														27.5
SV-MM18-5R5B-4-□A0		292														30.5
SV-MM18-5R5B-4-□A2		364														32.5

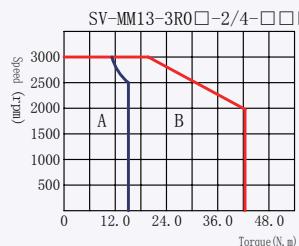
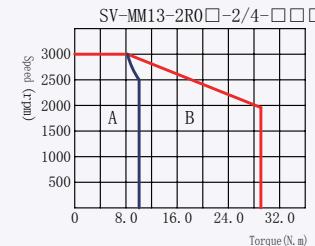
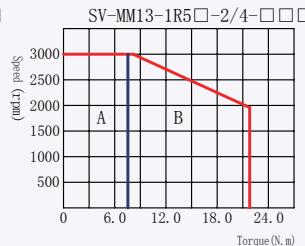
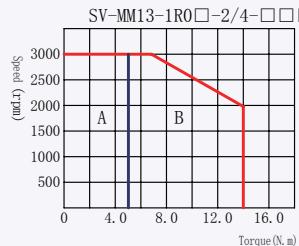


# Motor torque-speed

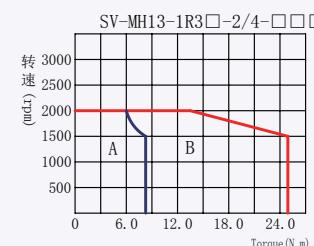
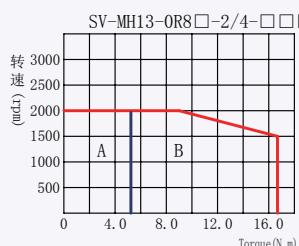
## 60/80 base (small inertia)



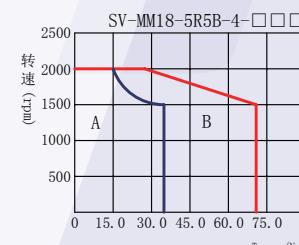
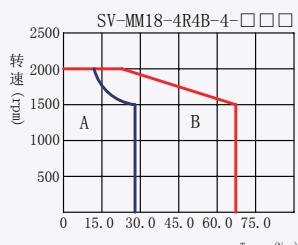
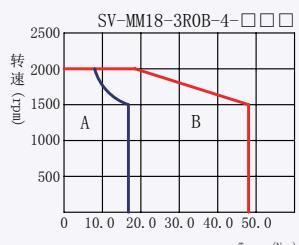
## 130 base (medium inertia)



## 130 base (high inertia)



## 180 base (medium inertia)



# Cable model

## Power cable

**DA ML-075-03-A B F**

(1)

(2)

(3)

(4)

(5)

(6)

(7)

## Power cable accessories

**DA ML-A B**

(1)

(2)

(5)

(6)

(7)

①	Sign	Series
	DA	Manufacturer

②	Sign	Cable type
	ML	Power cable

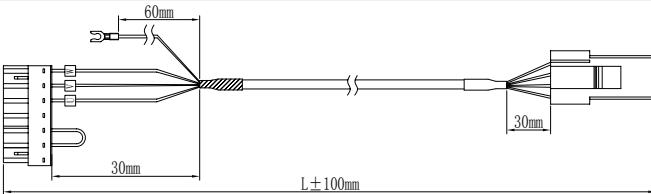
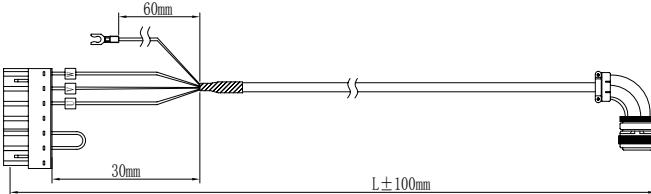
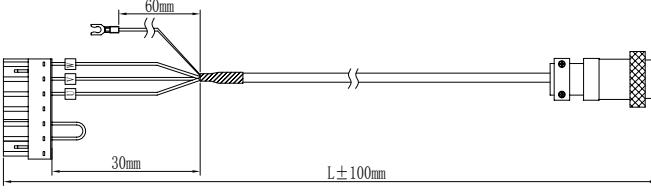
③	Sign	Coil diameter
	075	0.75mm <sup>2</sup>
	100	1.0mm <sup>2</sup>
	150	1.5mm <sup>2</sup>
	250	2.5mm <sup>2</sup>

④	Sign	Cable length
	03	3m
	05	5m
	10	10m
	15	15m

⑤	Sign	Pin for motors
	A	4PIN plastic pin
	B	4PIN general aviation pin YD28
	C	4PIN metal pin

⑥	Sign	Pin for drives
	B	European 7PIN 20A pin
	W	No pin

⑦	Sign	Cable materials
	Null	Standard cables
	F	Flexible tray cables

Encoder cable	Cable appearance
DAML-□□□-□□-AB□	
DAML-□□□-□□-BB□	
DAML-□□□-□□-CB□	

# / Cable model

## Cable core

**DB EL-15-03-A F**

## Encoder cable

**DB EL-A A**

①	Sign	Series
	DB	Manufacturer

②	Sign	Cable type
	EL	Encoder cable

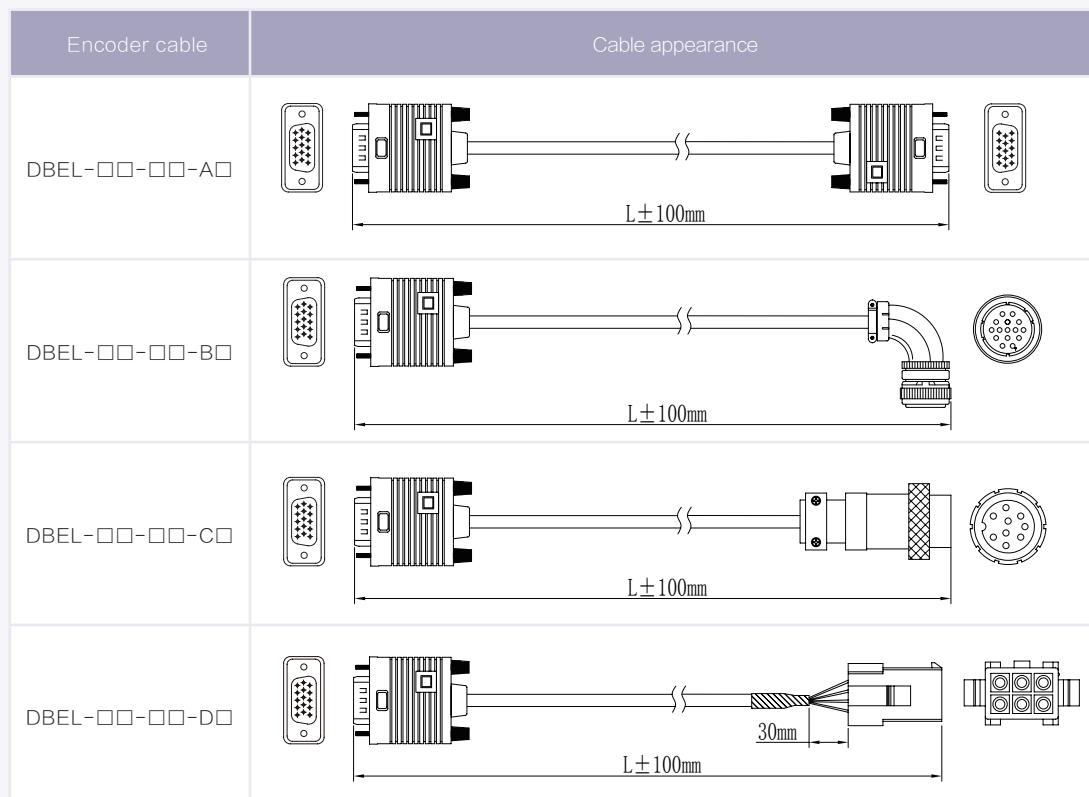
③	Sign	Cable core
	06	6-core cable
	09	9-core cable
	15	15-core cable

④	Sign	Cable length
	03	3m
	05	5m
	10	10m
	15	15m

⑤	Sign	Pin for motors
	A	15pin DB pin
	B	15PIN general aviation pin YD28
	C	9PIN metal pin
	D	6PIN plastic pin

⑥	Sign	Cable materials
	Null	Standard cables
	D	with battery
	F	Flexible tray cables
	H	with battery flexible cables

⑦	Sign	Pin for drives
	A	15pin DB pin

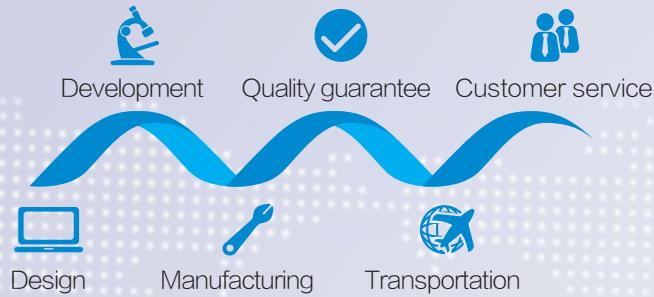


# Ordering instruction

Voltage	Power	Servo motor	Available drive	Power cable Encoder cable	Plug fittings		
220V	200W	SV-ML06-0R2G-2-□□□	SV-DA200-0R2-2-□	DAML-075-□□-□B□ DBEL-□□-□□-□□	DAML-□B DBEL-A□		
	400W	SV-ML06-0R4G-2-□□□	SV-DA200-0R4-2-□				
	750W	SV-ML08-0R7G-2-□□□	SV-DA200-0R7-2-□				
	1.0kW	SV-ML08-1R0F-2-□□□					
	850W	SV-MH13-0R8B-2-□□□	SV-DA200-1R0-2-□				
	1.0kW	SV-MM13-1R0E-2-□□□					
		SV-MM13-1R0F-2-□□□					
	1.3kW	SV-MH13-1R3B-2-□□□	SV-DA200-2R0-2-□	DAML-150-□□-BB□ DBEL-□□-□□-B□	DAML-BB DBEL-AB		
	1.5kW	SV-MM13-1R5E-2-□□□	SV-DA200-1R5-2-□				
		SV-MM13-1R5F-2-□□□					
	2.0kW	SV-MM13-2R0E-2-□□□	SV-DA200-2R0-2-□				
		SV-MM13-2R0F-2-□□□					
	3.0kW	SV-MM13-3R0B-2-□□□	SV-DA200-3R0-2-□	DBML-250-□□-BW□ DBEL-□□-□□-B□	DBML-BW DBEL-AB		
	4.4 kW	SV-MM13-4R4B-2-□□□	SV-DA200-4R4-2-□				
400V	850W	SV-MH13-0R8B-4-□□□	SV-DA200-1R0-4-□	DAML-150-□□-BB□ DBEL-□□-□□-B□	DAML-BB DBEL-AB		
	1.0kW	SV-MM13-1R0E-4-□□□					
	1.3kW	SV-MH13-1R3B-4-□□□	SV-DA200-2R0-4-□				
	1.5kW	SV-MM13-1R5E-4-□□□	SV-DA200-1R5-4-□				
	2.0kW	SV-MM13-2R0E-4-□□□	SV-DA200-2R0-4-□				
	3.0kW	SV-MM18-3R0B-4-□□□	SV-DA200-3R0-4-□				
	4.4kW	SV-MM18-4R4B-4-□□□	SV-DA200-4R4-4-□				
	5.5kW	SV-MM18-5R5B-4-□□□	SV-DA200-5R5-4-□				

Ordering instruction: 1. There are two kinds of cable selection: to purchase the standard configured cable or to make the cable;  
 2. Select the cable length to the actual need; the standard length is 3m, 5m, 10m and 15m  
 3. Please contact with the local supplier for more motor information

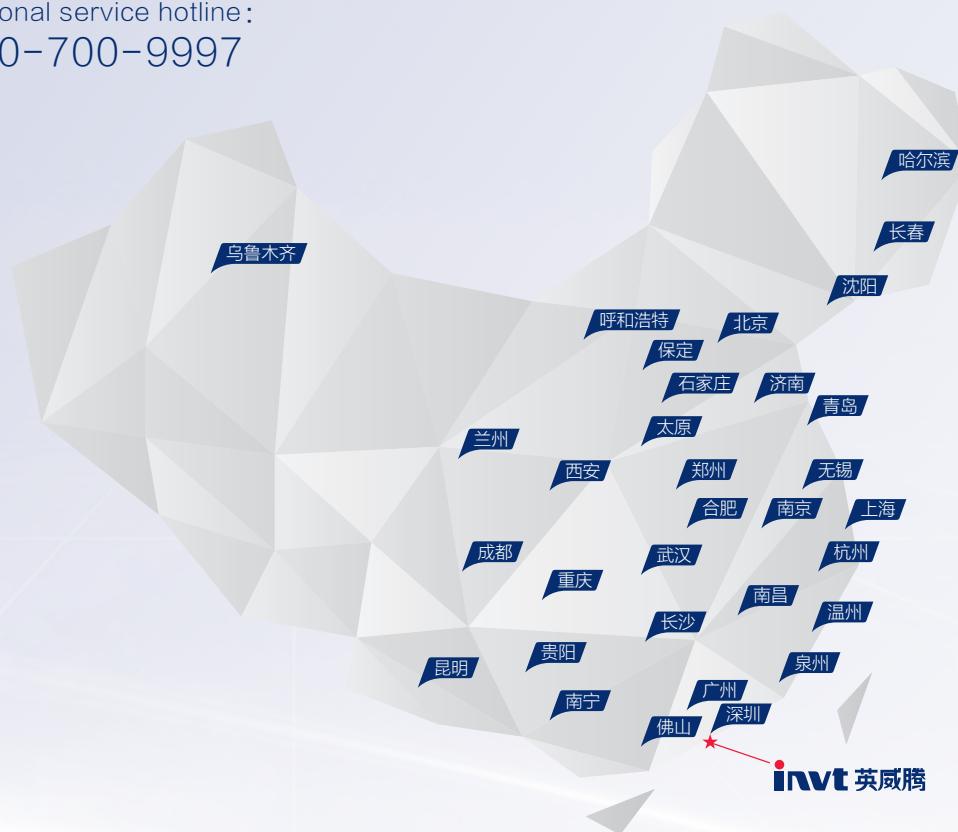
## / One stop service



## / Domestic marketing services network

30 domestic offices and gradually-added overseas offices, coinsurance center, after-sales service centers, marketing services provide with total service and fast response

National service hotline:  
400-700-9997



## BETTER SERVO / BETTER SOLUTION

*Perfect combination of servo and solution*



扫一扫，登录英威腾手机官网



Service line: 400-700-9997 ; +86-21-34637660 Website: www.invt.tech.com

INVT INDUSTRIAL TECHNOLOGY (SHANGHAI) CO.,LTD.

No. 1 Building, No. 188 New Junhuan Road, Pujiang High Tech Park, Minhang District, Shanghai

**Industrial Automation:** ■ Frequency Inverter ■ Servo & Motion Control ■ Motor & Electric Spindle ■ PLC

■ HMI ■ Intelligent Elevator Control System ■ Traction Drive

**Electric Power** ■ SVG ■ Solar Inverter ■ UPS ■ Online Energy Management System

INVT Copyright.

Information may be subject to change without notice during product improving.

Y5/1-05V1.1