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CE SGS RoHS

SERVICE-HOT LINE
400-8819-800



CA100 Series Servo Drive · Servo Motor

VFD | Servo | PLC | HMI


Simphoenix



Shenzhen Simphoenix Electric Technology Co.,Ltd was established in 2004, specialized in the R&D, production, sales and service of industrial automation products, mainly include servo drive, servo motor, inverter, PLC, HMI, PMSM etc. Simphoenix is committed to be a reliable industrial automation product and solution provider. Through 10 years' development, Simphoenix has become a well-known domestic brand for its complete product structure and strong R&D capacity.



Shenzhen Simphoenix Electric Technology Co.,Ltd

Introduction

CA100 series servo drive is applicable to typical applications like packaging, food, CNC cutting, textile, machine tool, wooden engraving machines etc. Intergrating with multiple intelligent control algorithm, remarkable current response, humanized operating method and parameter design, CA100 series can make sure a minimum adjustment of parameter, which greatly helps lower requirements on the operators' technique, reduce the complexity to coordinate with the master machine, and accomplish on-site assembly, debug and running in a short time.

CA100 servo drive is a high-performance series with the features of accurate positioning, fast response, high rigidity and strong anti-interference ability. With the flexible software & hardware extension design concept, CA100 series can be freely applied to various industries while maintaining its extraordinary high cost-effectiveness.

CA100 Series Servo Drive·Servo Motor



Product Advantages

- Response frequency is 1.5KHz.
- Overload capacity up to 3 times.
- Various control mode like position, speed, torque and multi-compound control.
- Available of 2500 P/R, 17bit, 20bit multiple encoder.
- With the load inertia integration, load inertia identification and vibration depression dialing device.

Product Introduce

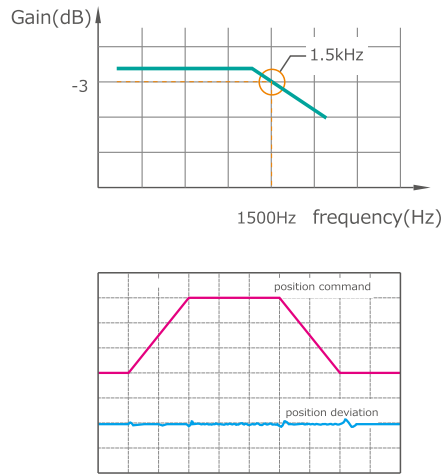
Application Area	High Performance	Utility Functions	High Stability
Packaging, food, CNC cutting, textile, machine tool, wooden engraving machines etc.	◆Response frequency 1.5kHz ◆Remarkable current response characteristics ◆High-resolution encoder ◆Excellent adjustment ability	◆Vibration notch filter ◆Zero speed clamp function ◆Torque self-adaptive compensation ◆Load inertia identification ◆bundant communication interface	◆Comprehensive EMC test ◆Long service life ◆High protection servo motor

High Performance

◆Response frequency 1.5kHz

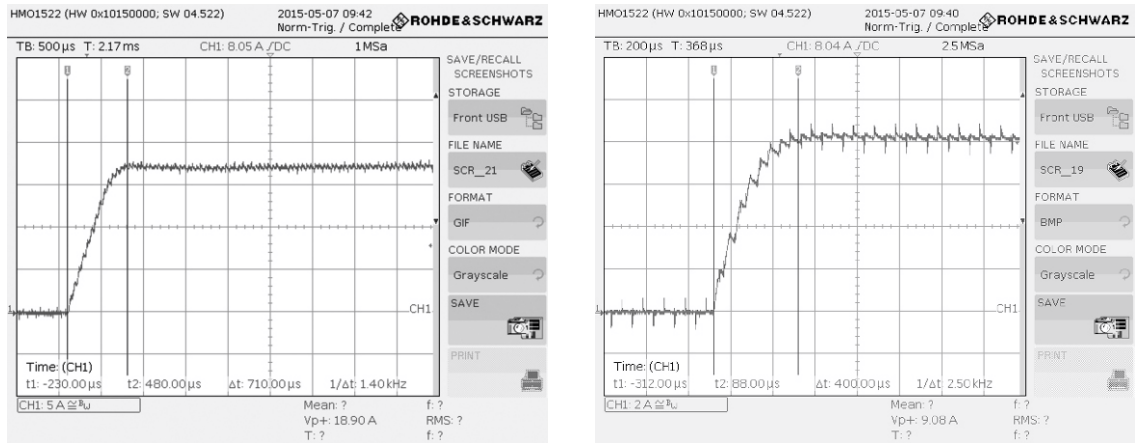
Application:Textile industry, packaging, food industry, wooden engraving industry. A bandwidth at 1kHz can be realized at ta resolution of 2500ppr encoder, which satisfies general-purpose industrial automation requirements.

The following performance has been improved by Adopting new position and speed controller, Achieve zero position deviation.



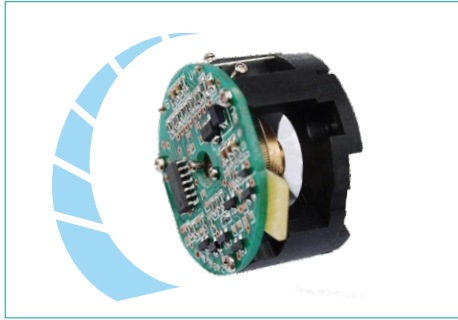
◆Remarkable current response characterisetics

It only needs 710μs to reach 300% rated current response,and 400μs to reach 150% rated current response.



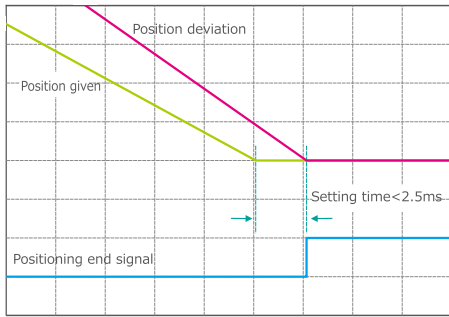
◆High-resolution encoder

Optional of 17bit absolute encoder to improve the positioning accuracy, low-speed stability and control rigidity.



◆Excellent adjustment ability

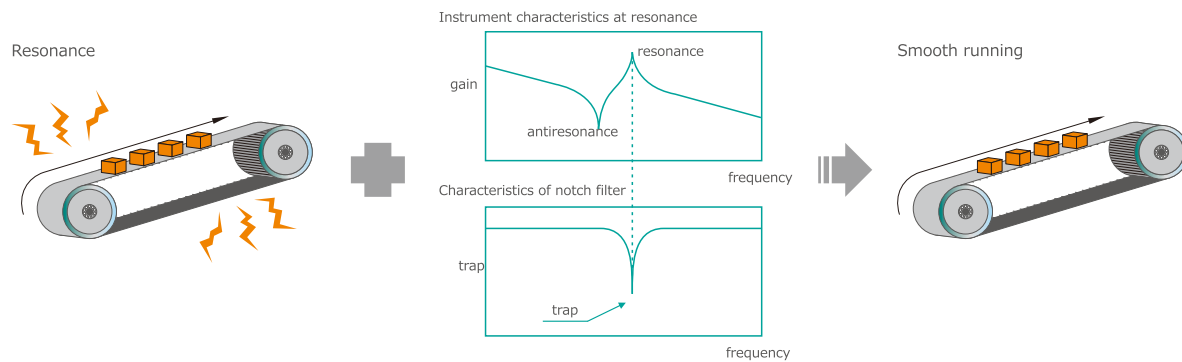
Excellent torque response, good system rigidity can largely shorten the positioning adjustment time.



Utility Functions

◆Vibration notch filter

The mechanical vibration can be significantly reduced also highly improve the control accuracy and stability.

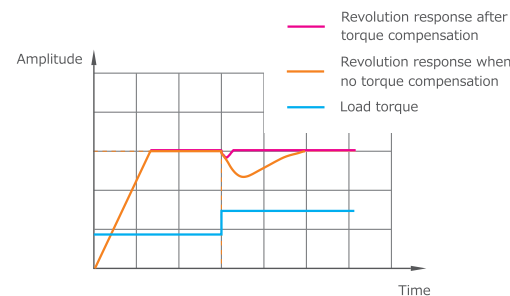


◆Zero speed clamp function

During speed control (zero speed clamp), because analog command causes drift which may lead to low speed scramble of motor axis, then use this function to lock servo and stop it running.

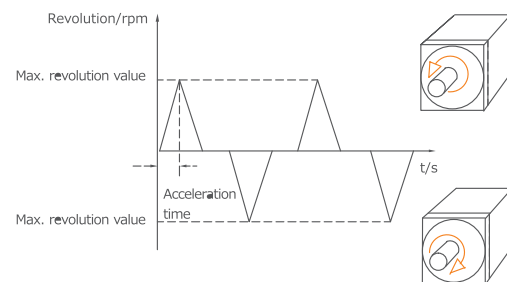
◆Torque self-adaptive compensation

Servo drive take self-adaptive observation of torque disturbance on line, and make real-time compensation to torque control loop, which can greatly improve system tracking rigidity and largely eliminate speed fluctuation caused by load mutation or disturbance, then to reduce position tuning time.



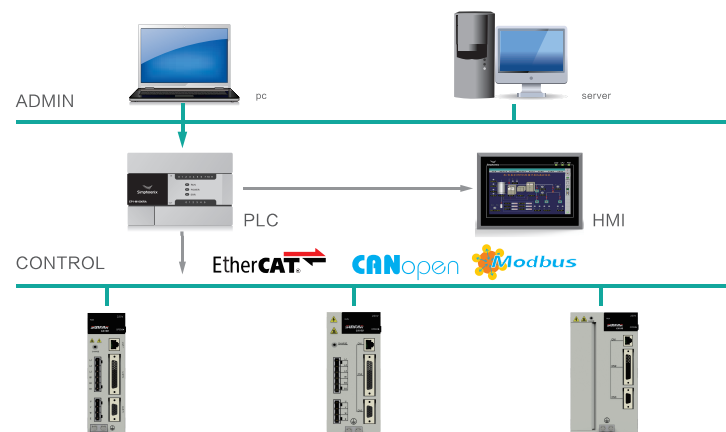
◆Load inertia identification

Can take off-line inertia identification of load, setting values of most parameters can automatically reach their optimal status after identification. This could reduce difficulties of commissioning.



◆Abundant communication interface

Support CANOPEN, Profibus-DP, Modbus-RTU etc protocols, can realize networking function among multiple servo drives, or servo drive and other industrial automation devices.



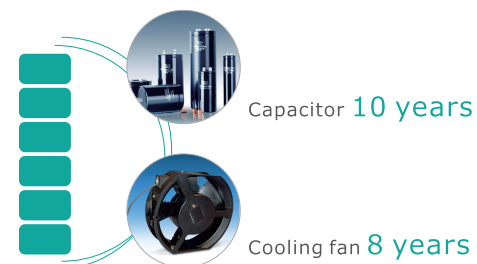
High Stability

◆Comprehensive EMC test

Refer to ICE/EN61800-3 standard test, and meet requirements as below:

Item	Criterion	Requirements
ESD	IEC/EN 61000-4-2	Level3, namely 4KV contact discharge, 8KV air discharge
Surger	IEC/EN 61000-4-5	Level3, namely 1.2/50us 2KV phase - PE; 1KV phase - phase
EFT	IEC/EN 61000-4-4	Level3, namely 2KV/5kHz
CS	IEC/EN 61000-4-6	Level3, namely 150KHZ~80MHZ/140dBμV/10V
DIPs	IEC 61000-4-11/32	Third kind criterion
CE	EN 55011/CISPR11	C2 level
RS	IEC 61000-4-3	Level3 10v/m 10v/m, 80MHz~1000MHz

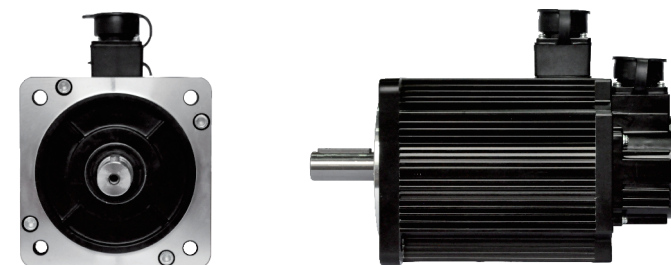
◆Long service life



Working condition as below:
Working temperature: average 30°C/year
Load rate: under 80%
Working rate: under 20 hours/day

◆High protection servo motor with up to 3 times of loading capacity

The max. Torque of CM105 servo motor can reach 3 times of rated torque, ensure fast start and stop. They adopt seal type design, their protection class reaches IP65 which can meet requirements of dust-proof and water-proof.



Servo Motor Serial Number Description

CM105- 110T 20030 A1 A N - 1

Design Code		
Brake Type	B	Power-off brake
	N	Without brake
Shaft ext. Type	A	Epi type (No Keyslot)
	B	Epi type (U-Keyslot)
	C	Epi Type (OB- Keyslot)
	N	Endotaxy (eg:spline)
Encoder Type	R1	Rotary-transformer
	A1	Incremental 2500p/r
	A2	Absolute 17bit
	A3	Absolute 20bit
	A4	Absolute 23bit
Rated Speed	30	30x100rpm
Rated Torque	202	200Nm
	201	20Nm
	200	2Nm
	020	0.2Nm
Voltageof adaptive drive	T	220V
	F	380V
Frame Size	80	80 motor frame
Product Serial Num	CM105 series servo motor	

Description of Servo Drive Model

CA100-T 4R5A P

Encoder interface	S	Serial
	P	Incremental(A/B/Z/U/V/W)
Product type	A	Analog/Pulse command type
	B	Communication/Pulse command type
	C	Analog/Communication command type
Rated current	R80	0.8A
	4R5	4.5A
	10R	10A
	105	105A
Voltage grade	T	AC 220V
	F	AC 380V
Model	CA100 series servo drive	

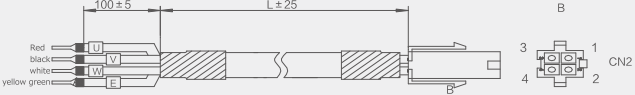
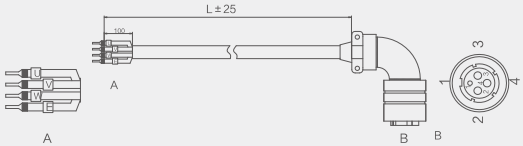
CM105 series servo motor and matched CA100 servo drive selection table

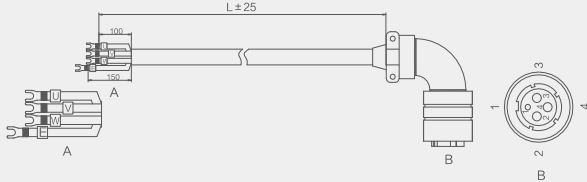
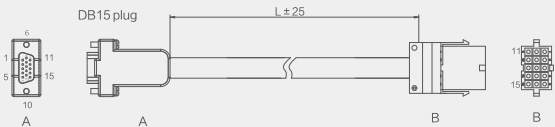
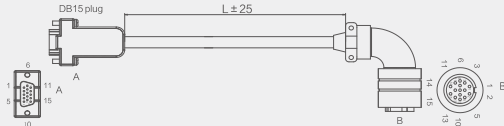
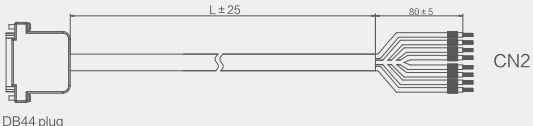
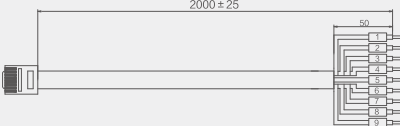
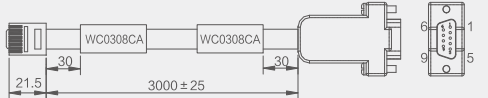
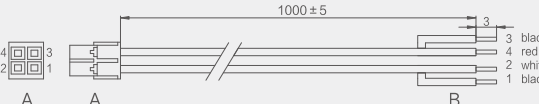
220V						
Capacity(W)	Speed(rpm)	Rated Torque(Nm)	Flange	Motor	Drive	Motor Code
200	3000	0.60	60	CM105-60T06030A1□□□□	T1R8 A	2001
400	3000	1.30	60	CM105-60T13030A1□□□□	T3R0 A	2025
			80	CM105-80T13030A1□□□□	T3R0 A	2028
600	3000	1.90	60	CM105-60T19030A1□□□□	T4R5 A	2055
	3000	2.00	110	CM105-110T20030A1□□□□	T3R0 A	2024
730	2000	3.50	80	CM105-80T35020A1□□□□	T3R0 A	2026
750	3000	2.40	80	CM105-80T24030A1□□□□	T3R0 A	2027
800	2000	4.00	110	CM105-110T40020A1□□□□	T4R5 A	2048
1000	2500	4.00	80	CM105-80T40025A1□□□□	T4R5 A	2050
	2500	4.00	130	CM105-130T40025A1□□□□	T4R5 A	2049
	1000	10.00	130	CM105-130T10110A1□□□□	T4R5 A	2051
1100	3000	3.50	80	CM105-80T35030A1□□□□	T4R5 A	2052
1200	3000	4.00	110	CM105-110T40030A1□□□□	T6R0 A	2074
	2000	6.00	110	CM105-110T60020A1□□□□	T4R5 A	2054
1300	2500	5.00	130	CM105-130T50025A1□□□□	T6R0 A	2075
	3000	5.00	110	CM105-110T50030A1□□□□	T6R0 A	2076
1500	2500	6.00	130	CM105-130T60025A1□□□□	T6R0 A	2077
	1500	10.00	130	CM105-130T10115A1□□□□	T6R0 A	2078
	3000	6.00	110	CM105-110T60030A1□□□□	T6R0A	2079
2000	2500	7.70	130	CM105-130T77025A1□□□□	T7R5 A	2082
2300	1500	15.00	130	CM105-130T15115A1□□□□	T10R A	2106
2600	2500	10.00	130	CM105-130T10125A1□□□□	T10R A	2107
380V						
Capacity(W)	Speed(rpm)	Rated Torque(Nm)	Flange	Motor	Drive	Motor Code
1000	1000	10.00	130	CM105-130F10110A1□□□□	F4R0 A	4012
1500	1500	10.00	130	CM105-130F10115A1□□□□	F4R0 A	4013
2300	1500	15.00	130	CM105-130F15115A1□□□□	F6R0 A	4030
2600	2500	10.00	130	CM105-130F10125A1□□□□	F6R0 A	4031
3000	1500	19.00	180	CM105-180F19115A1□□□□	F8R5 A	4049
3700	1000	35.00	180	CM105-180F35110A1□□□□	F12R A	4069
3800	2500	15.00	130	CM105-130F15125A1□□□□	F12R A	4067
4300	1500	27.00	180	CM105-180F27115A1□□□□	F12R A	4070
4500	2000	21.50	180	CM105-180F22120A1□□□□	F12R A	4068
5500	1500	35.00	180	CM105-180F35115A1□□□□	F12R A	4071
5600	2000	27.00	180	CM105-180F27120A1□□□□	F20R A	4084
7300	2000	35.00	180	CM105-180F35120A1□□□□	F20R A	4085
7500	1500	48.00	180	CM105-180F48115A1□□□□	F20R A	4083
10000	2000	48.00	180	CM105-180F48120A1□□□□	F25R A	4101

Cable selection table

Servo motor	Flange	CA100-	Motor cable models	Encoder cable models
CM105	60、80	T3R0 A T4R5 A	SP-WM0313DI-01 3m SP-WM0513DI-01 5m SP-WM1013DI-01 10m	SP-WD0315AI-01 3m SP-WD0515AI-01 5m SP-WD1015AI-01 10m
CM105	110、130	T3R0 A T4R5 A T6R0 A T7R5 A	SP-WM0320DH-01 3m SP-WM0520DH-01 5m SP-WM1020DH-01 10m	SP-WD0315AH-01 3m SP-WD0515AH-01 5m SP-WD1015AH-01 10m
		T10R A F4R0 A F6R0 A F8R5 A F12R A	SP-WM0320EH-01 3m SP-WM0520EH-01 5m SP-WM1020EH-01 10m	
CM105	180	F8R5 A F12R A	SP-WM0320EJ-01 3m SP-WM0520EJ-01 5m SP-WM1020EJ-01 10m	
		F20R A F25R A	SP-WM0355EJ-01 3m SP-WM0555EJ-01 5m SP-WM1055EJ-01 10m	

Cable selection table

Cable name	Cable model	length (mm)	Cable appearance diagram
Main motor cable	SP-WM0313DI-01	3000	
	SP-WM0513DI-01	5000	
	SP-WM1013DI-01	10000	
	SP-WM0320DH-01	3000	
	SP-WM0520DH-01	5000	
	SP-WM1020DH-01	10000	

Cable name	Cable model	length (mm)	Cable appearance diagram
Main motor cable	SP-WM0320EH-01	3000	
	SP-WM0520EH-01	5000	
	SP-WM1020EH-01	10000	
	SP-WM0355EH-01	3000	
	SP-WM0555EH-01	5000	
	SP-WM1055EH-01	10000	
	SP-WM0320EJ-01	3000	
	SP-WM0520EJ-01	5000	
	SP-WM1020EJ-01	10000	
	SP-WM0355EJ-01	3000	
Encoder cable	SP-WD0315AI-01	3000	
	SP-WD0515AI-01	5000	
	SP-WD1015AI-01	10000	
	SP-WD0315AH-01	3000	
	SP-WD0515AH-01	5000	
	SP-WD1015AH-01	10000	
I/O signal cable	SP-WI0144AF-01	1000	
	SP-WI0244AF-01	2000	
	SP-WI0344AF-01	3000	
PLC communication calbe	SP-WC0208CF-01	2000	
PC communication cable	SP-WC0308CA-01	3000	
Analog signal monitoring cable	SP-WA0104GF-01	1000	

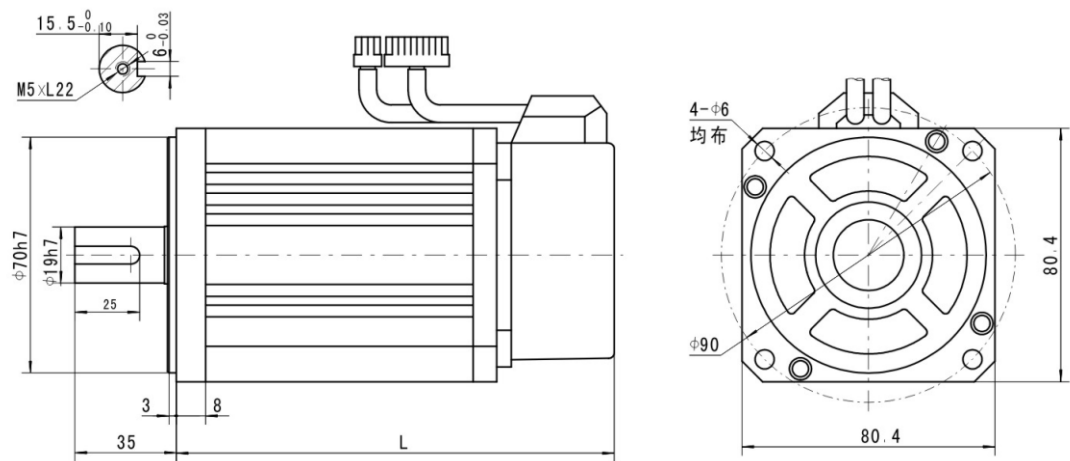
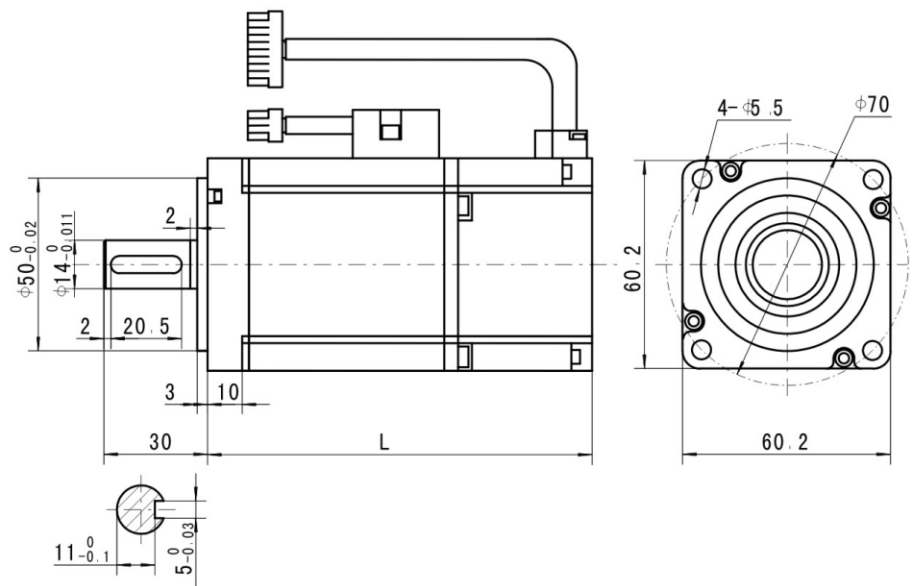
60 Motor technical parameters

Motor Model	CM105-60T06030	CM105-60T13030	CM105-60T19030
Rated power (kW)	0.2	0.4	0.6
Rated current (A)	1.3	2.6	3.1
Rated torque (N·m)	0.64	1.27	1.91
Maximum torque (N·m)	1.91	3.81	5.1
Rated speed (r/min)	3000	3000	3000
Maximum speed (r/min)	3600	3600	3600
Rotor inertia (Kg·m ²)	0.264×10^{-4}	0.407×10^{-4}	0.526×10^{-4}
Moment coefficient (N.m/A)	0.49	0.48	0.54
Back EMF (V/1000r/min)	32	29	38
Phase resistance (Ω)	7.1	3.8	3.7
Phase inductance (mh)	36.5	19.2	26.4
Electrical time constant (Ms)	4.7	5.05	7.1
Motor weight (kg)	1.2	1.6	2.1
Driver input voltage (V)	AC220		
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit		
Polar logarithm	4		
Insulation grade	F		
Protection level	IP65		
Motor length (L) (brake motors) (mm)	111 (157)	135 (183)	156 (204)

80 Motor technical parameters

Motor Model	CM105-80T13030	CM105-80T24030	CM105-80T35020	CM105-80T35030	CM105-80T40025
Rated power (kW)	0.4	0.75	0.73	1.1	1.0
Rated current (A)	2	3	3	4.5	4.4
Rated torque (N·m)	1.27	2.39	3.5	3.5	4
Maximum torque (N·m)	3.8	7.1	10.5	10.5	12
Rated speed (r/min)	3000	3000	2000	3000	2500
Rotor inertia (Kg·m ²)	1.05×10^{-4}	1.82×10^{-4}	2.63×10^{-4}	2.63×10^{-4}	2.97×10^{-4}
Moment coefficient (N.m/A)	0.64	0.8	1.17	0.78	0.9
Back EMF (V/1000r/min)	40	50	71	65	54
Phase resistance (Ω)	4.4	2.9	3.7	4.6	2.2
Phase inductance (mh)	8.1	5.9	9.1	7.82	4.8
Electrical time constant (Ms)	1.8	2.0	2.45	1.68	2.08
Motor weight (kg)	1.78	2.9	3.9	3.9	4.1
Driver input voltage (V)	AC200				
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit				
Polar logarithm	4				
Insulation grade	F				
Protection level	IP65				
Motor length (L) (brake motors) (mm)	124 (167)	151 (194)	179 (222)	179 (222)	191 (234)

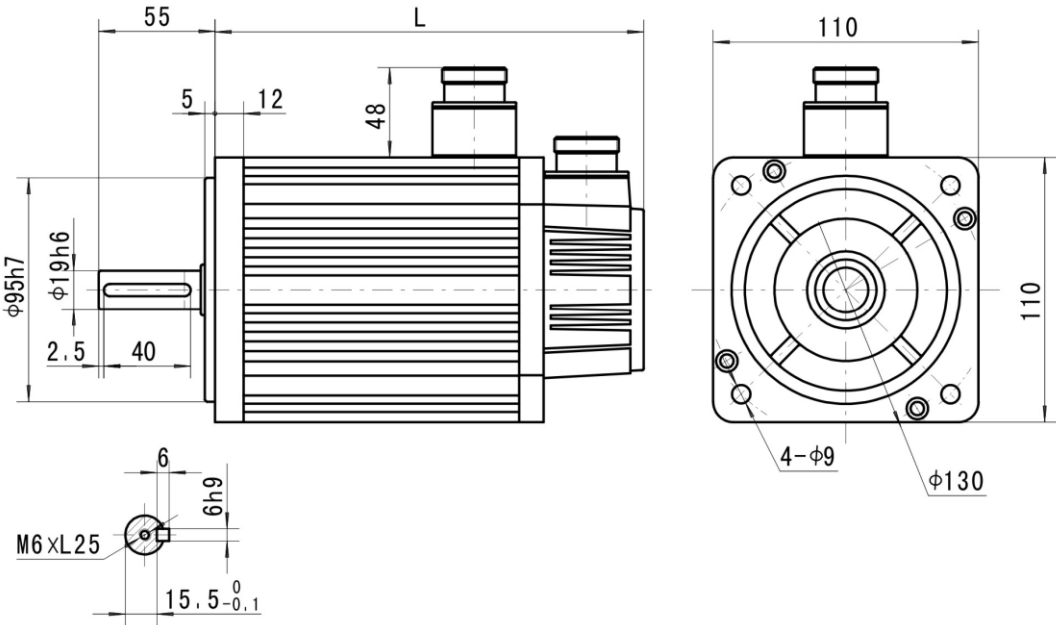
60 Flange motor installation size chart



110 Motor technical parameters

Motor Model	CM105-110T20030	CM105-110T40020	CM105-110T40030	CM105-110T50030	CM105-110T60020	CM105-110T60030
Rated power (kW)	0.6	0.8	1.2	1.5	1.2	1.8
Rated current (A)	2.5	3.5	5.0	6.0	4.5	6.0
Rated torque (N·m)	2	4	4	5	6	18
Maximum torque (N·m)	6	12	12	15	12	6
Rated speed (r/min)	3000	2000	3000	3000	2000	3000
Rotor inertia (Kg·m ²)	0.31×10 ⁻³	0.54×10 ⁻³	0.54×10 ⁻³	0.63×10 ⁻³	0.76×10 ⁻³	0.76×10 ⁻³
Moment coefficient (N·m/A)	0.8	1.14	0.8	0.83	1.33	1.0
Back EMF (V/1000r/min)	57	79	54	63	83	61
Phase resistance (Ω)	3.6	2.5	1.05	1.03	1.46	0.78
Phase inductance (mh)	8.32	7.4	3.4	3.43	4.9	2.68
Electrical time constant (Ms)	2.3	2.96	3.24	3.33	3.35	3.45
Motor weight (kg)	4.5	6	6	6.8	7.9	7.9
Driver input voltage (V)	AC220					
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit					
Polar logarithm	4					
Insulation grade	F					
Protection level	IP65					
Motor length (L) (brake motors) (mm)	159 (233)	189 (263)	189 (263)	204 (278)	219 (293)	219 (293)

110 Flange motor installation size chart



130 Motor (220V) technical parameters

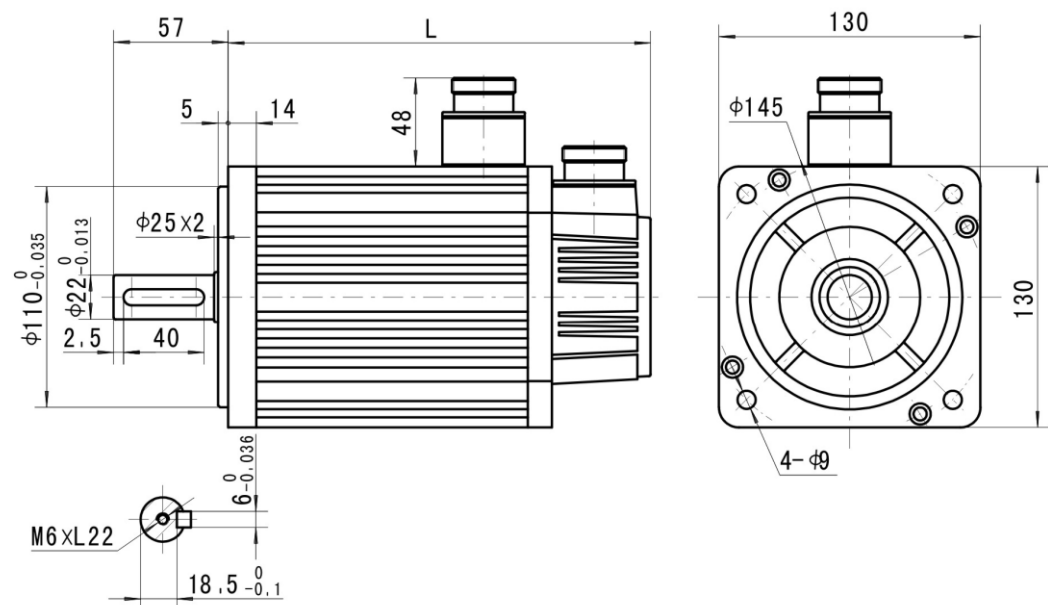
Motor Model	CM105-130T40025	CM105-130T50025	CM105-130T60025	CM105-130T77025
Rated power (kW)	1.0	1.3	1.5	2.0
Rated current (A)	4.0	5.0	6.0	7.5
Rated torque (N·m)	4	5	6	7.7
Maximum torque (N·m)	12	15	18	22
Rated speed (r/min)	2500	2500	2500	2500
Rotor inertia (Kg·m ²)	0.85×10 ⁻³	1.06×10 ⁻³	1.26×10 ⁻³	1.53×10 ⁻³
Torque constant (KT N·m/A)	1.0	1.0	1.0	1.03
Back EMF (V/1000r/min)	73	72	65	66
Electrical time constant (Ms)	2.88	3.54	3.08	2.91
Phase resistance (Ω)	2.36	1.81	1.28	1.01
Phase inductance (mh)	6.81	6.42	3.95	2.94
Driver input voltage (V)	AC220			
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit			
Polar logarithm	4			
Insulation grade	F			
Protection level	IP65			
Motor length (L) (brake motors) (mm)	166 (223)	171 (228)	179 (236)	192 (249)

Motor Model	CM105-130T10110	CM105-130T10115	CM105-130T10125	CM105-130T15115
Rated power (kW)	1.0	1.5	2.6	2.3
Rated current (A)	4.5	6.0	10	9.5
Rated torque (N·m)	10	10	10	15
Maximum torque (N·m)	20	25	25	30
Rated speed (r/min)	1000	1500	2500	1500
Rotor inertia (Kg·m ²)	1.94×10 ⁻³	1.94×10 ⁻³	1.94×10 ⁻³	2.77×10 ⁻³
Torque constant (KT N·m/A)	2.2	1.67	1.0	1.1
Back EMF (V/1000r/min)	134	103	69	114
Electrical time constant (Ms)	3.6	3.58	4.04	4.04
Phase resistance (Ω)	2.84	1.5	0.75	1.1
Phase inductance (mh)	10.23	5.37	3.03	4.45
Driver input voltage (V)	AC220			
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit			
Polar logarithm	4			
Insulation grade	F			
Protection level	IP65			
Motor length (L) (brake motors) (mm)	213 (294)	213 (294)	209 (290)	241 (322)

130 Motor (380V) technical parameters

Motor Model	CM105-130F10110	CM105-130F10115	CM105-130F10125	CM105-130F15115	CM105-130F15125
Rated power (kW)	1.0	1.3	2.6	2.3	3.8
Rated current (A)	2.5	3.5	6.0	5.0	8.8
Rated torque (N·m)	10	10	10	15	15
Maximum torque (N·m)	20	25	25	30	30
Rated speed (r/min)	1000	1500	2500	1500	2500
Rotor inertia (Kg·m²)	1.94×10 ⁻³	1.94×10 ⁻³	1.94×10 ⁻³	2.77×10 ⁻³	2.77×10 ⁻³
Back EMF (V/1000r/min)	244	177	113	188	110
Moment coefficient (N.m/A)	4	2.85	1.66	3	1.7
Electrical time constant (Ms)	4.4	3.8	1.96	3.27	1.3
Phase resistance (Ω)	26.7	13.2	6.2	12.3	5.86
Phase inductance (mh)	3.27	3	3.1	3.78	4.3
Motor weight (kg)	11.3	11.3	11.3	14.5	14.5
Driver input voltage (V)	AC380				
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit				
Polar logarithm	4				
Insulation grade	F				
Protection level	IP65				
Motor length (L) (brake motors) (mm)	213 (294)	213 (294)	209 (290)	241 (322)	231 (312)

130 Flange motor installation size chart

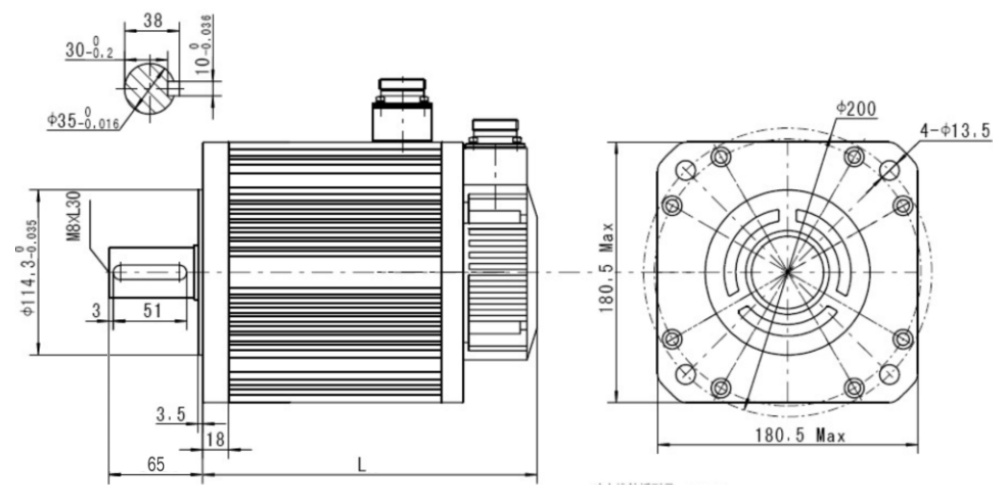


180 Motor (380V) technical parameters

Motor Model	CM105-180F19115	CM105-180F22120	CCM105-180F27115	CCM105-180F27120	CM105-180F35110
Rated power (kW)	3.0	4.5	4.3	5.6	3.7
Rated current (A)	7.5	9.5	10	13	10
Rated torque (N·m)	19	21.5	27	27	35
Maximum torque (N·m)	47	53	67	67	70
Rated speed (r/min)	1500	2000	1500	2000	1000
Rotor inertia (Kg·m²)	3.8×10 ⁻³	4.7×10 ⁻³	6.1×10 ⁻³	6.1×10 ⁻³	8.6×10 ⁻³
Back EMF (V/1000r/min)	165	140	172	142	223
Moment coefficient (N.m/A)	2.5	2.26	2.7	2.07	3.5
Phase resistance (Ω)	1.12	0.71	0.87	0.47	0.93
Phase inductance (mh)	7.1	4	5.5	2.8	9.1
Electrical time constant (Ms)	6.39	5.6	6.3	6.0	9.78
Motor weight (kg)	20.5	22.3	25.5	25.5	30.5
Driver input voltage (V)	AC380				
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit				
Polar logarithm	4				
Insulation grade	F				
Motor length (L) (brake motors) (mm)	232 (304)	243 (315)	262 (334)	262 (334)	292 (364)

Motor Model	CM105-180F35115	CM105-180F35120	CM105-180F48115	CM105-180F48120
Rated power (kW)	5.5	7.3	7.5	10
Rated current (A)	12	16	20	24
Rated torque (N·m)	35	35	48	48
Maximum torque (N·m)	70	70	96	96
Rated speed (r/min)	1500	2000	1500	2000
Rotor inertia (Kg·m²)	8.6×10 ⁻³	8.6×10 ⁻³	9.5×10 ⁻³	9.5×10 ⁻³
Back EMF (V/1000r/min)	181	138	156	141
Moment coefficient (N.m/A)	2.9	2.18	2.4	2.0
Phase resistance (Ω)	0.63	0.44	0.27	0.24
Phase inductance (mh)	4	2.6	2.14	1.6
Electrical time constant (Ms)	6.45	5.9	7.8	6.6
Motor weight (kg)	30.5	30.5	40	40
Driver input voltage (V)	AC380			
Encoder line number (P/R)	Incremental 2500/ absolute 17bit or 23bit			
Polar logarithm	4			
Insulation grade	F			
Motor length (L) (brake motors) (mm)	292 (364)	292 (364)	346 (418)	346 (418)

180 Flange motor installation size chart

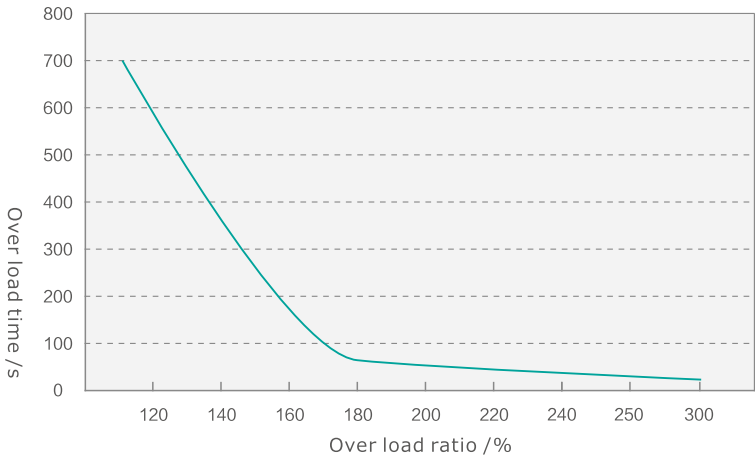


Servo Motor features

- High-efficiency, low temperature rise brings more benefit to users.
- Strong overload capacity, large starting torque, good static rigidity, strong anti-load interference capacity.
- Selectable big, medium, small inertia are able to adapt to the mechanical stability and high-speed responsiveness needs.
- Protection level IP65, make sure motor can work perfectly at temperature -20℃~40℃ and dusty oil mist environment.
- Adapt import high-precision bearing and high-precision dynamic balance process, with small working vibration and low noise.

Servo Motor Overload Characteristic

On Load Ratio/%	Running Time (S)
120	600
140	400
160	200
180	10
200	8
220	7
240	6
250	5
300	3.5

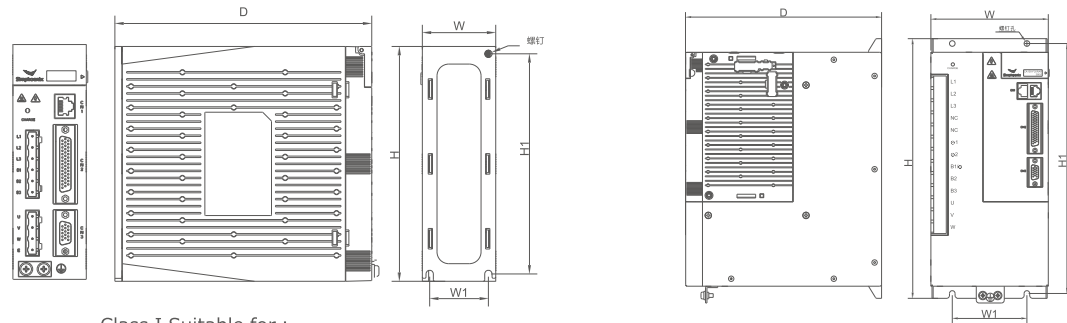


Type table

Rated voltage	Drive model	Driver code	Rated current (A)	Maximum Adaptive motor power(kW)
Single-phase AC220V	CA100-T1R8AP	022M100200018	1.8	0.20
	CA100-T3R0AP	022M100200030	3.0	0.75
Single / three phase AC220V	CA100-T4R5AP	022M100200045	4.5	1.20

Rated voltage	Drive model	Driver code	Rated current (A)	Maximum Adaptive motor power(kW)
Three-phase AC220V	CA100-T6R0AP	022M100200060	6.0	1.80
	CA100-T7R5AP	022M100200075	7.5	2.00
	CA100-T10RAP	022M100200100	10.0	2.60
Three-phase AC380V	CA100-F4R0AP	022M100400040	4.0	1.50
	CA100-F6R0AP	022M100400060	6.0	2.60
	CA100-F8R5AP	022M100400085	8.5	3.80
	CA100-F12RAP	022M100400120	12.0	5.50
	CA100-F20RAP	022M100400200	20.0	7.50
	CA100-F25RAP	022M100400250	25.0	9.80

Drive dimensions



Class I Suitable for :
CA100-T1R8AP~ CA100-T10RAP
CA100-F4R0AP~ CA100-F20RAP

Class II Suitable for :
CA100-F20RAP~CA100-F25RAP

Model	W1 (mm)	W (mm)	H1 (mm)	H (mm)	D (mm)	Screw
CA100-T1R8AP	40	50	150	160	175	M4
CA100-T3R0AP						
CA100-T4R5AP	60	70	150	160	175	M4
CA100-T6R0AP						
CA100-T7R5AP						
CA100-T10RAP	89	100	169	180	200	M5
CA100-F4R0AP						
CA100-F6R0AP						
CA100-F8R5AP						
CA100-F12RAP	80	110	268	280	210	M5
CA100-F20RAP						
CA100-F25RAP						

Technical Specifications of Servo Drive

Servo Drive Model	T1R8A△	T3R0A△	T4R5A△	T6R0A△
Continuous output current[A]	1.8	3.0	4.5	6.0
Instanenous Max. Output Current[A]	5.4	9.0	13.5	18.0
Regenerative resistor	External configured		Internal configured	
Loop power	Single phase AC 220V (-15%~+10%) 50Hz		Single/Three phase AC 220V (-15%~+10%) 50Hz	
Servo Drive Model	T7R5A△	T10RA△	F4R0A△	F6R0A△
Continuous output current[A]	7.5	10.0	4.0	6.0
Instanenous Max. Output Current[A]	22.5	30.0	12.0	18.0
Regenerative resistor	Internal configured			
Loop power	Three phase AC 220V (-15%~+10%) 50Hz		Three phase AC 380V (-15%~+10%) 50Hz	
Servo Drive Model	F8R5A△	F12RA△	F20RA△	F25RA△
Continuous output current[A]	8.5	12.0	20.0	25.0
Instanenous Max. Output Current[A]	25.5	24.0	35.0	50.0
Regenerative resistor	Internal configured			
Loop power	Single/Three phase AC 220V (-15%~+10%) 50Hz			

*△ in servo drive type is the encoder interface type

Braking Resistor Specifications

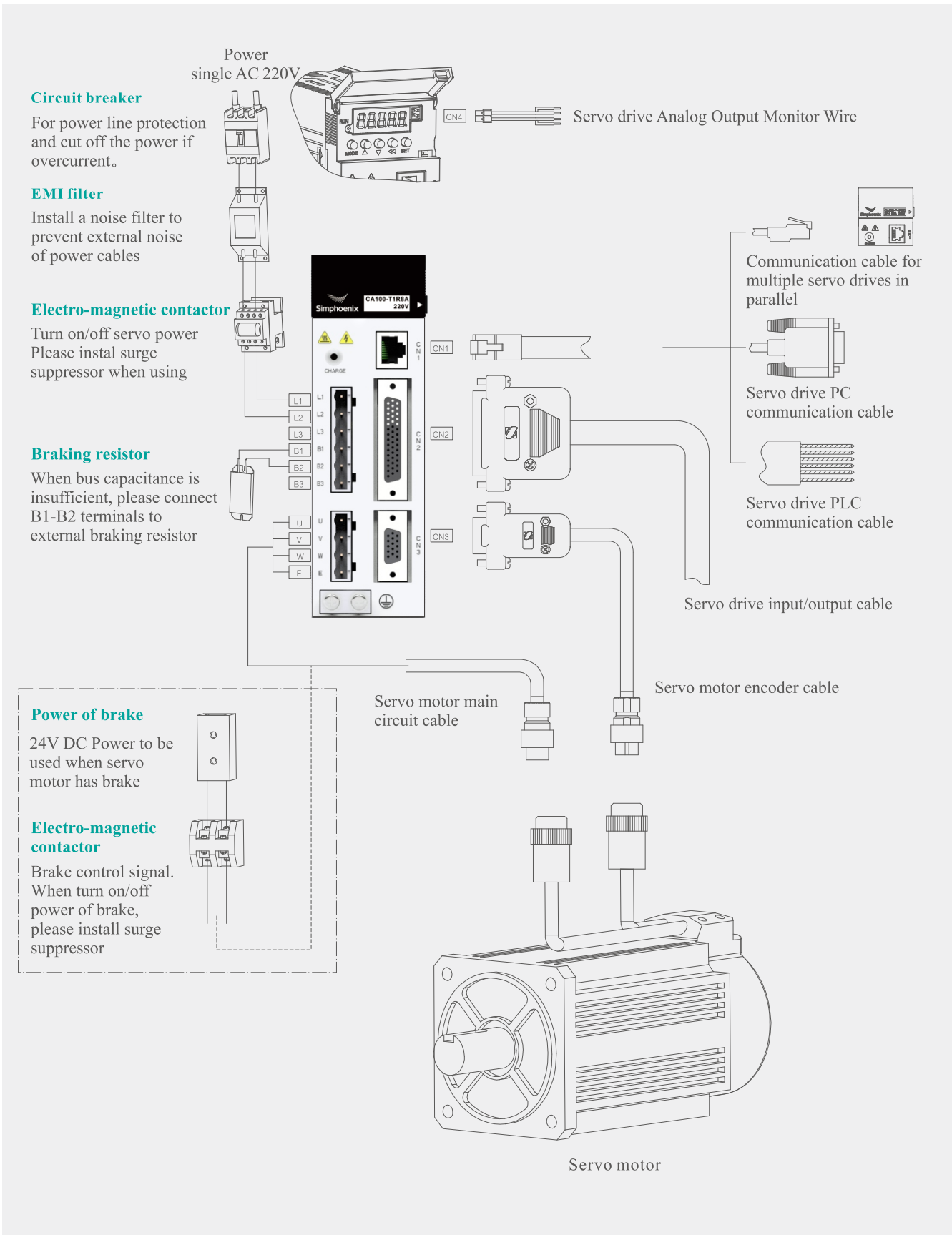
Servo Drive Model		Internal Configured Regenerative Resistor Specification		Allowed Min. External Configured Resistance (Ω)	Max.Braking Energy Absorbable by Capacitor (J)
		Resistance (Ω)	Capacity (W)		
1 Phase AC220V	CA100-T1R8AP	---	---	50	18
	CA100-T3R0AP	---	---	50	24
1/3 Phase AC220V	CA100-T4R5AP	50	60	45	47
3 Phase AC220V	CA100-T6R0AP	50	60	25	62
	CA100-T7R5AP	25	100	20	76
	CA100-T10RAP	25	100	15	76
3 Phase AC380V	CA100-F4R0AP	100	100	60	67
	CA100-F6R0AP	50	100	45	80
	CA100-F8R5AP	50	100	45	97
	CA100-F12RAP	50	100	45	105
	CA100-F20RAP	40	120	30	120
	CA100-F25RAP	40	120	30	120

*△ in servo drive type is the encoder interface type

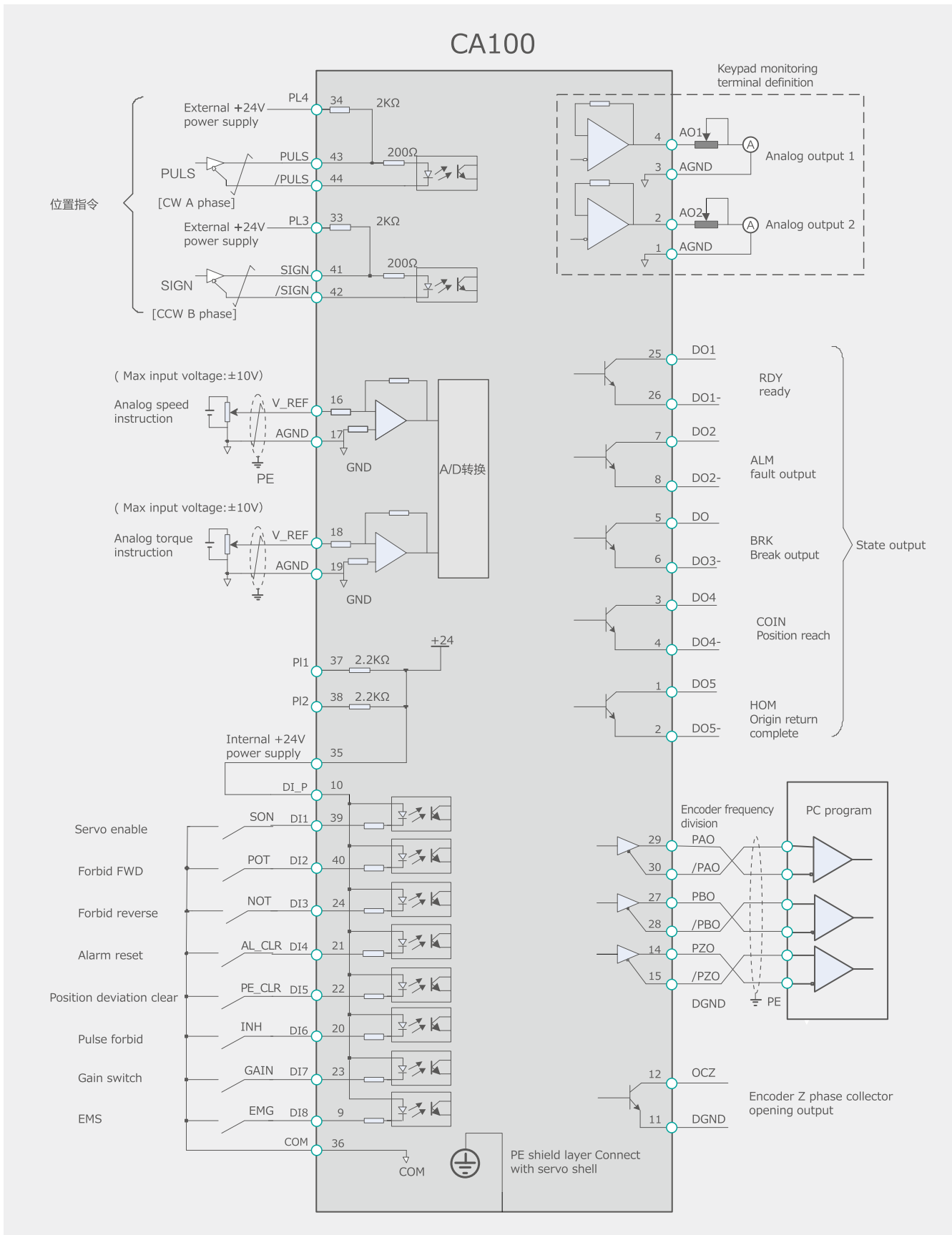
Servo Drive Specifications

Basic Specifications	Servo drive model		CA100T	T1R8、T3R0、T4R5、T6R0、T7R5、T10R	1PH/3PH AC220V -15%~+10%
			CA100F	F4R0、F6R0、F8R5、F12R、F20R、F25R	50/60Hz 3PH AC380V -15%~+10%
	Control method		IGBT, SVPWM Sine wave current drive		
	Control mode		Position, speed, torque, position/speed, position/torque, speed/torque		
	Feedback		Incremental encoder 2500P/R(parallel type, wire-saving type), serial 17bit, 20bit encoder		
	Environmental conditions	Temperature	Work temperature: 0℃~+45℃		
			Storage temperature: -20℃~+60℃		
		Humility	Under 90% RH, no condensation		
		Vibration	0.5G(4.9m/s²)		
		Protection grade	IP10		
		Altitude	Under 1000m (when >1000m, please derate the power)		
		Others	No static interference; strong electric field; strong magnetic field; radioactive rays and non corrosive gases; no water, old, drug flash of flammable gases; less dust, dirt, salt and metal powder environment		
	Structure		Base mounted		
Speed Control	Control input		1. 8-segment of internal command, 8-segment of internal speeds are changable controlled by input. 2. External analog command; 3. Zero speed clamp		
	Control output		Speed arrival judgment: 3 methods		
	Analog input		Take speed command input according to analog voltage		
	Torque limit command		Can separately take forward/reverse torque limit		
	Speed ratio		1:6000		
	Speed variety rate	Load fluctuation	0 ~ 100% of load: under ±0.02% (≤rated revolution)		
		Voltage fluctuation	Rated voltage ± 10%: 0% (≤rated revolution)		
		Temperature fluctuation	25 ±25℃: under ± 0.1% (≤rated revolution)		
	Torque control precision		±1% (reproduce type)		
	Soft start time		0 ~30s (Can seperately set acceleration and deceleration)		
	Frequency respond characteristic		1.5kHz		
Position Control	Command pulse	Input pulse type	1. Symbol + pulse train; 2. A. B quadrature pulse; 3. CCW + CW pulse train		
		Input pulse shape	Line drive (+5V level), open collector (+5V, +12V, +24V level, please see related circuit description for specific wiring)		
		Input pulse frequency	Max. 500Kpps (difference) / 200 Kpps (collector)		
	Electronic gear ratio		3 kinds of electronic gear setting, 1-32767		
Torque Control	Control input		Deviation counter clear signal, command pulse inhibit input, 8-segment of internal position		
	Control output		Positioning completion signal, positioning arrival judgment		
	Control input		1. 4-segment of internal torque , can be judged by control input; 2. Analog command input		
	Control output		Torque arrival judgment		
Input & Output Signal	Analog input		Take torque command input according to analog voltage		
	Speed limit		3 limit methods		
	Input signal		8DI terminals; 2AI terminals		
	Output signal		5DO terminals; 2AO terminals		
Internal Functions	Pulse output		z pulse collector open output		
	Dynamic brake (DB)		Act when main loop circuit OFF, servo alarm, servo OFF, overtravel (OT)		
	Protection		Overcurrent, overvoltage, undervoltage, overload, main circuit inspection abnormal, overheat of heat sink, power phase lack, overspeed, encoder error, CPU exception, parameter error		
	Communication		RS485 1:N (N<240)		
	Instruction		Internal keypad, Power Charge		

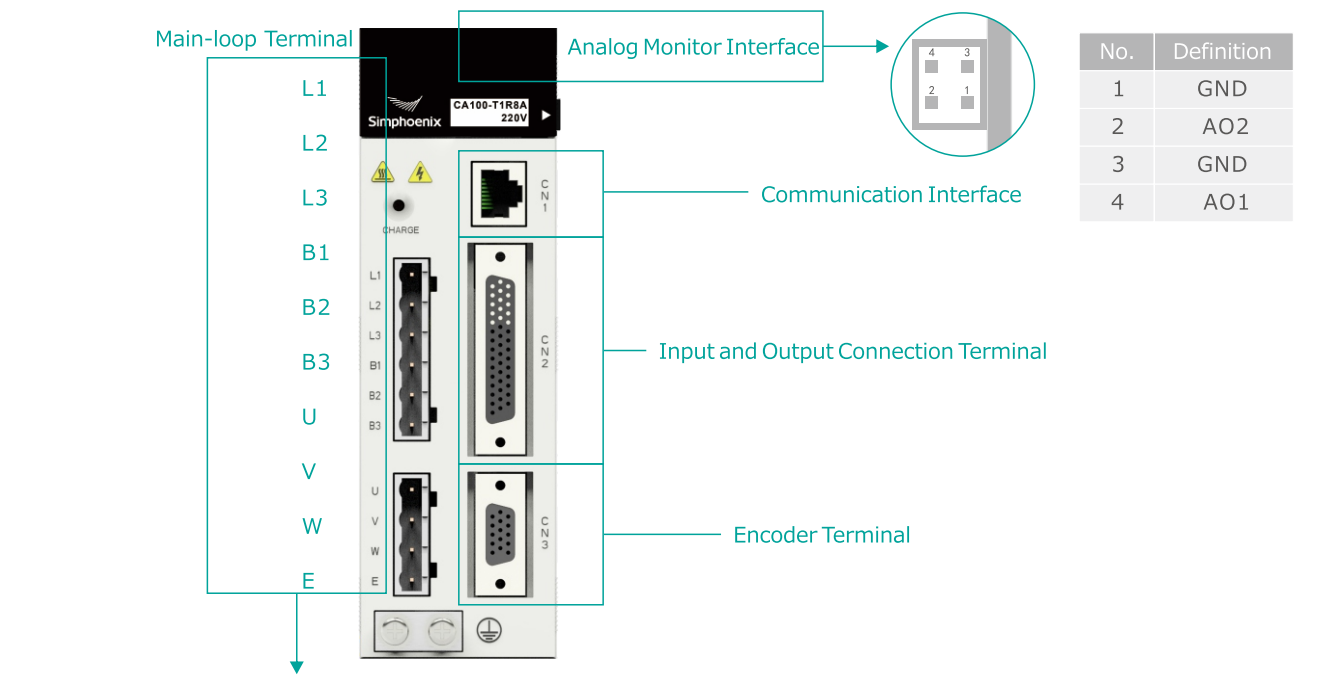
Servo Wiring Diagram



Wiring Mode



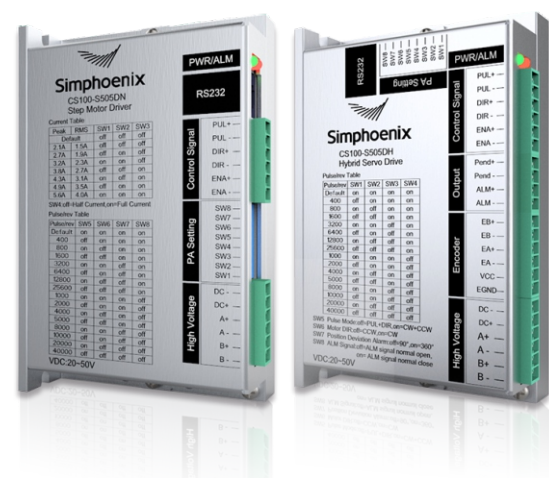
Servo Drive Peripheral Terminal Notes



Main-loop Terminal for Each Driver Model

Terminal Labeling	Terminal Name	Drive Model CA100-□□□	Terminal Function
L1、L2、L3	Main-loop Power Input Terminal	T1R8、T3R0	Main-loop power input, only terminal L1 and L2 available, with AC 220V power supply between L1 and L2.
		T4R5	Main-loop power input, terminal L1, L2, L3 input single Ph/3Ph AC220V power. When it is 1Ph power, terminal L1 and L2 input 1Ph AC220V power.
		T6R0、T7R5、T10R	Main-loop power input, terminal L1, L2, L3 input 3Ph AC220V power. When it is 1Ph power, terminal L1 and L2 input 1Ph AC220V power.
		F4R0、F6R0、F8R5 F12R、F20R、F25R	Main-loop power input, terminal L1, L2, L3 input 3Ph AC380V power.
B1、B2、B3	External Regenerative Braking Resistor Connection Terminal	T1R8、T3R0	Without built-in braking resistor, when it is lack of braking power, connect braking resistor between B1 and B2 as external.
		T4R5、T6R0、T7R5	Built-in braking resistor short-circuiting B2 and B3. External braking resistor: when it is lack of braking power, disconnect short circuit between B2 and B3, and connect external braking resistor between B1 and B2 which should buy.
		T10R、F4R0、F6R0 F12R、F20R、F25R	Built-in braking resistor short-circuiting B2 and B3. External braking resistor: when it is lack of braking power, disconnect short circuit between B1 and B3, and connect external braking resistor between B1 and B2 which should buy.
N1、N2、PP	Reserved Terminal	Prohibit connecting.	
U、V、W	Servo Motor Connection Terminal	Servo motor power cable connection terminal connect to motor U V W respectively.	
E	Earth Protection Terminal	Connect with power earth terminal and motor earth terminal for earthing.	

CS100 Series Digital Stepper Drive



CS100 Series is a new digital hybrid stepper drive of simphoenix which adopt special new motor control ARM mcu and vector closed-loop control tech. It has solved the problem of lost step of step motor.also highly improve the high speed performance reduce the heating vibration of the motor. Thus improve the working speed and accuracy also reduce the power consumption. In addition,when the motor continuous overload the drive will trips alarm.also it has the same reliability like the ac servo system.The installation dimensions can apply to the traditional 57, 60 and 86 series stepper motor, able to replace the current open-loop or closed loopstepper motor drive perfectly.

Features

- Adopt special new 32 bit motor control ARM mcu.
- Adopt advanced PID current control algorithm.
- It can keeps steady and quiet working while at low speed application.
- Both static current and dynamic current can be set.
- It can drive 57,60 and 86 series hybrid stepper motor.
- Optocoupler isolation differential signal input.
- Maximum pulse response frequency can reach 200KHZ.
- 16 kinds of subdivision setting gear and 8 kinds of current setting gear.
- Has over current, under voltage and over voltage protection.

Typical Applications

- Engraving machine
- Stripping machine
- Marking machine
- Cutting machine
- Laser Phototypesetting
- Graph plotter
- CNC cutting machinery
- Automatic assembly equipment

Specifications

Model	CS100-S708AN	CS100-S708AH	CS100-S505DN	CS100-S505DH
Working Voltage	20-75 VAC		20-50 VAC	
Peak Current	7.2A		7.2A	
Maximum Pulse Frequency	200kHz		200kHz	
Isolation Resistor	≥50MΩ		≥50MΩ	
Subdivision Number	DIP switch may be provided(400-51200)		DIP switch may be provided(400-40000)	
Provides encoder current	—		50mA	50mA
Control method	—		Closed loop vector current control	Closed loop vector current control
Communication Interface	—		RS232	RS232
Encoder feedback	—		AB differential input	AB differential input
Cooling Method	Natural Cooling Or External Heat Radiator		Natural Cooling Or External Heat Radiator	
Environment	Avoid Dust, oil Mist And Corrosive Gas		Avoid Dust, oil Mist And Corrosive Gas	
Working Temperature	0℃-50℃		0℃-50℃	
Working Humidity	40-90%RH		40-90%RH	
Vibration	5.9 m/s2 Max		5.9 m/s2 Max	
Storage Temperature	-20℃±50℃		-20℃±50℃	
Weight	About 780 Grams		About 780 Grams	



Shenzhen Simphoenix Electric Technology Co.,Ltd

Note:

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