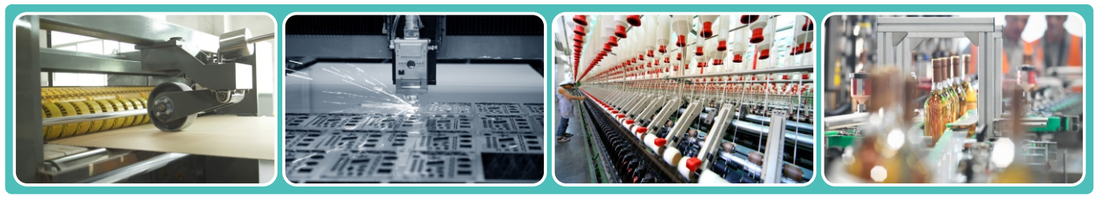
CD100 Series

CD100 Series Servo Drive

CD100 series servo driver is a new generation of economical medium and small power AC servo control unit developed by Simphoenix Electric on a new platform. The power range is 100W~7.5kW. It has the characteristics of high integration, small size, good heat dissipation effect, reliable performance, beautiful structure design and so on. No debugging function with the upper computer software, greatly improve the servo system to use the site adaptability, widely used in numerical control processing, packaging printing and dyeing, textile woodworking, new energy, industrial robots and other fields.

Typical Applications

- Numerical control machining
- Woodworking machinery
- Textile equipment
- Packaging machinery
- New energy
- Industrial robot



Features

- Standard double RJ45 port, can better achieve multi-unit network linkage
- Automatic recognition of inertia and automatic gain adjustment to shorten servo adjustment time
- Full closed loop function design, higher precision, wider applications
- Standard USB function, with the upper computer debugging more convenient
- Single-phase standard 17bit single-turn absolute value encoder, three-phase standard 23bit single-turn absolute value encoder, more convenient and flexible application
- The drive is smaller and has a higher power density

Specifications

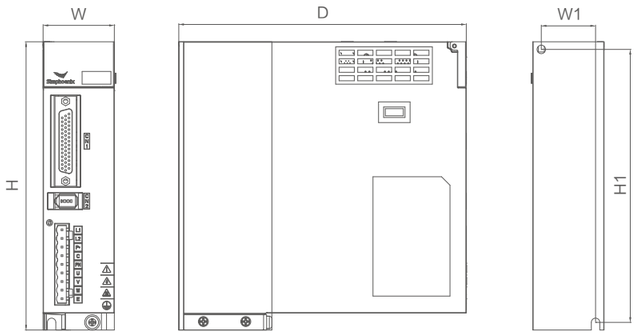
basic specification	Control mode			Position,Speed, Torque,Position/Speed,Position/Torque, Speed/Torque
	Feedback			Serial communication encoder：17bit/23bit
	Conditions	Tempera -ture		Operating temperature：0℃~+45℃(Ambient temperature +45℃ or more, please derating used).
				Storage temperature：-20℃~+60℃.
		Humidity		90%RH below, no condensation.
		Ventilation		0.5g（4.9m/s²）
position mode	Command source		External Pulse	Type: 1. pulse + direction 2. A, B orthogonal pulse 3. CCW+CW pulse. Maximum frequency: 500Kpps (differential) / 200Kpps (collector).
			Internal Position	Relative and absolute position modes are configurable, and maximum speed and acceleration/deceleration times can be set.
			Internal Multi-steps Positions	A total of 16 segments, each with individually set maximum speed, acceleration and deceleration time and waiting time. Relative position and absolute position mode can be configured. Single operation and cycle operation can be configured, and any segment operation can be switched through DI terminal.
	Electronic gear ratio			4 sets of 32bit electronic gear ratios.
	Input control signal			Positive overtravel (POT), Negative overtravel (NOT), Gain switching (GAIN),Electronic gear ratio selection (GEAR), Inhibit pulse-in (INHP), Position error clear (PECLR), Position trigger (PTRG), Home position reference (REF), Get Home (GHOM).
	Output control signal			Complete in position(COIN), Near in position (NEAR), Home completed (HOM).
speed control	Command source		Analog input	0~±10VDC/rated speed, maximum input voltage is ±12VDC.
			Internal digital quantity	Acceleration and deceleration time can be set up to 60S.
			Internal Multi-steps speeds	A total of 16 sections, each section can be individually set with acceleration/deceleration time and operation time. Single run and cyclic run can be configured, and any section of the operation can be switched through the DI terminal.
	Speed Ratio			1：6000
	Frequency Response			1.5kHz（Max）
	Speed variation		Load variation	At 0 to 100% load: ±0. 2% or less (≤ rated speed)
			Voltage variation	Rated voltage ± 10%:0% (≤ rated speed)
			Ambient temperature variation	25 ±25°C: ± 0.1% or less (≤ rated speed)
	Input control signal			Zero speed clamp (ZCLMP), Gain switching (GAIN), Command inverse(CINV), External positive torque limiting (TCCW), External negative torque limiting (TCW), Internal multi-steps command switching (ICMD)
	Output control signal			Zero speed (ZSP), Speed achieve (SPA)
torque control	Command source		Analog input	0~±10VDC/rated torque, maximum input voltage is ±12VDC.
			Internal digital quantity	Acceleration and deceleration time can be set up to 60S.
			Internal multi-steps torques	A total of 4 steps, each step can be set build-up time of torque individually.Exection of the 4 torques is via Digital Input signals.
	Torque accuracy			± 3%
	Speed limit			3 limit modes
	Control inputs			External positive torque limiting (TCCW), external negative torque limiting (TCW), Internal multi-step command switching (ICMD), Positive jog (JOGP), Negative jog (JOGN), Command inverse (CINV).
	Control outputs			Torque achieve (TQA), Speed limiting(SPL), Speed achieve (SPA).
input and output signal	Input signal			DI: 8 physical terminals and 8 virtual terminals witch can be defined as different functions and positive and negative logic switch. AI: Speed and Torque.
	Output signal			DO: 5 physical terminals and 5 virtual terminals witch can be defined as different functions and positive and negative logic switch.
	Pulse output			A, B, Z differential signal output, Z pulse open collector output.
	Protection			Overcurrent, overvoltage, undervoltage, overload, abnormal main circuit detection, overheating, overspeed, abnormal encoder, abnormal CPU, abnormal parameters, etc.
	Communication			RS-485 communication: support Modbus protocol.
				CAN communication: support CANopen protocol.
	Instructions			Charge (red),7-segment LED×6 (internal keyboard).

CD100 Series

Model Table

Rated voltage	Model	Code	Rated current(A)	Maximum suitable motor(kW)
Singel phase AC220V	CD100-T1R8P□	022M000210018	1.8A	0.20
	CD100-T3R0P□	022M000210030	3.0A	0.75
Singel phase/Three phase AC220V	CD100-T4R5P□	022M000210045	4.5A	1.0
	CD100-T5R5P□	022M000210055	5.5A	1.3
	CD100-T7R5P□	022M000210075	7.5A	2.0
Three phaseAC380V	CD100-F4R0P□	022M000210040	4.0A	1.5
	CD100-F6R5P□	022M000210065	6.5A	2.3
	CD100-F8R5P□	022M000210085	8.5A	3.0
	CD100-F12RP□	022M000210120	12.0A	4.5

Drive dimensions



Model	W1 (mm)	W (mm)	H1 (mm)	H (mm)	D (mm)	Screw specification
T1R8/T3R0	32	42	161	170	170	M4
T4R5/T5R5/T7R5	40	50	161	170	170	M4
F4R0/F6R5/F8R5/F12R	64	80	186	195	182	M4

Servo Drive Naming Rules

CD100 – T 5R5 P A

Product series

Voltage class

T	220V
F	380V

Current marking

1R8	1.8A
3R0	3.0A
7R5	7.5A
20R	20A
...	...

Product type

Symbol	Frequency-division pulse output	CAN / full-closed loop / dynamic braking
default		
A	●	●
B		●
C	●	

Command type

P	Pulse command

Servo Motor Naming Rules

CM10 – A 80 T 024 30 B 3 G M 3 – F XXXX

Product series

polar logarithm

A	4 pairs of poles
B	5 pairs of poles

Flange

Voltage

T	220V
F	380V

Rated torque

R16	0.16Nm
024	2.4Nm
150	15Nm

Rated speed

15	15x100rpm
30	30x100rpm

Encoder type

B	17 bit single-ring absolute split type magnetic encoder
N	23bit single-ring absolute split type optical encoder
Q	23bit single-ring absolute integral type optical encoder
R	23bit multi-ring absolute integral type optical encoder

Order-ma

Cooling method

Default	Natural Cooling
F	Forced-air Cooling

Design Code

Inertia specifications

S	Small inertia
M	Medium inertia
L	Large inertia

Symbols	Bare Shaft	Shaft with Keyway	Brake	Oil Seal
A	●			
B	●		●	
C	●			●
D	●		●	●
E		●		
F		●	●	
G		●		●
H		●	●	●

Design code

Note: The motor packaging does not include wire connection connectors. If it is not necessary to select wire, please add motor connector accessories.

CM10 Series Servo Motor and Matched CD100 Servo Drive Selection Table

Voltage (V)	Motor type	Motor code	Flange	Power (kW)	Rated current (A)	Torque (Nm)	Speed (rpm)	Drive model	Encoder wire	Power line	Band brake line
220V	CM10-A60TR6430B□□□□	1010	60	0.2	1.2	0.64	3000	T1R8P□	SP-WD□□□05PAID-0□	SP-WM□□□05DAIB-0□	SP-WB□□□02DAIA-0□
	CM10-A60T01330B□□□□	1021	60	0.4	2.8	1.27	3000	T3R0P□	SP-WD□□□05PAID-0□	SP-WM□□□05DAIB-0□	SP-WB□□□02DAIA-0□
	CM10-A80T02430B□□□□	1020	80	0.75	3	2.40	3000	T3R0P□	SP-WD□□□05PAID-0□	SP-WM□□□05DAIB-0□	SP-WB□□□02DABH-0□
	CM10-A80T04025B□□□□	1030	80	1	4.4	4.00	2500	T4R5P□	SP-WD□□□05PAID-0□	SP-WM□□□07DCIB-0□	SP-WB□□□02DABH-0□
	CM10-A130T05025Q□□□□	1140	130	1.3	5	5.00	2500	T5R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□07DCHA-1□	SP-WB□□□02DABH-0□
	CM10-A130T06025Q□□□□	1153	130	1.5	6	6.00	2500	T7R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□07DCHA-1□	SP-WB□□□02DABH-0□
	CM10-A130T07725Q□□□□	1150	130	2	7.5	7.70	2500	T7R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□07DCHA-1□	SP-WB□□□02DABH-0□
	CM10-A130T10015Q□□□□	1154	130	1.5	6	10.00	1500	T7R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□07DCHA-1□	SP-WB□□□02DABH-0□
380V	CM10-A130F06025Q□□□□	1513	130	1.5	4	6.00	2500	F4R0P□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHA-1□	SP-WB□□□02DABH-0□
	CM10-A130F10015Q□□□□	1515	130	1.5	4	10.00	1500	F4R0P□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHA-1□	SP-WB□□□02DABH-0□
	CM10-A130F15015Q□□□□	1510	130	2.3	5	15.00	1500	F6R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHA-1□	SP-WB□□□02DABH-0□
	CM10-A130F10025Q□□□□	1526	130	2.6	6	10.00	2500	F8R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHA-1□	SP-WB□□□02DABH-0□
	CM10-A180F27010Q□□□□	1524	180	2.9	7.5	27.00	1000	F8R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHB-1□	SP-WB□□□02DABI-0□
	CM10-A180F19015Q□□□□	1520	180	3	7.5	19.00	1500	F8R5P□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHB-1□	SP-WB□□□02DABI-0□
	CM10-A130F15025Q□□□□	1531	130	3.8	9.5	15.00	2500	F12RP□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHA-1□	SP-WB□□□02DABH-0□
	CM10-A180F21520Q□□□□	1530	180	4.5	9.5	21.50	2000	F12RP□	SP-WD□□□05PAHC-0□	SP-WM□□□15DBHB-1□	SP-WB□□□02DABI-0□
	CM10-A180F27015Q□□□□	1535	180	4.3	10	27.00	1500	F12RP□	SP-WD□□□05PAHC-0□	SP-WM□□□40EAHB-1□	SP-WB□□□02DABI-0□

The second motor tail□
□=G,no brake
□=H,band-type brake

Motor code is used for setting parameters Pn-001

Drive tail □
□-none,basci model
□-A,with crossover output, CAN,fully closed loop, dynamic braking
□-B,including CAN, fully closed loop and dynamic braking
□-C,with crossover output

Harness specification:
□□□=030,3 meter
□□□=050,5 meter
□□□=100,10 meter

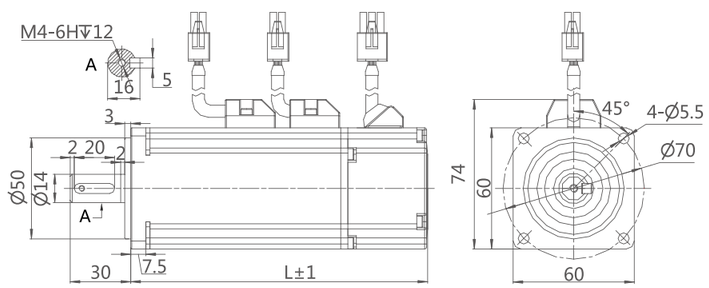
the last □
□=1,ordinary wire
□=2,high flexible wire

When the encoder is a multi turn absolute value, please select a 7-core cable (with a battery box) for the cable. When the encoder is a single turn or incremental absolute value, please select a 5-core cable (without a battery box).

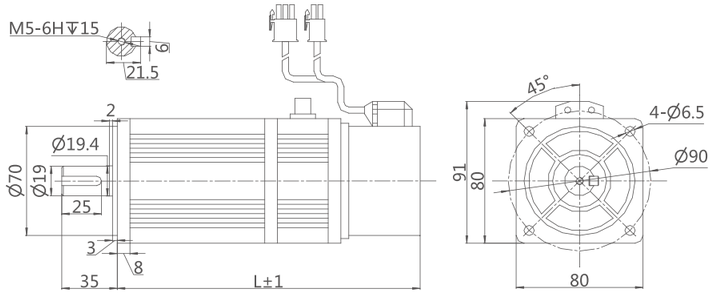
CM10 Series

Drive dimensions(mm)

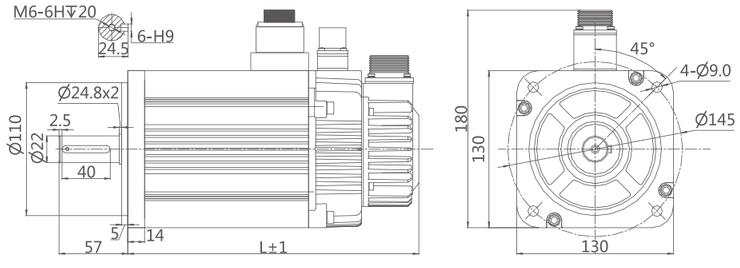
60 Flange



80 Flange



130 Flange



180 Flange