SDC Series AC SERVO SYSTEM

The Ultimate Power Solution
for Intelligent Machinery

Distributor

B260327E.SDC-BO

IN PURSUIT OF GROWTH & EXCELLENCE

Shihlin Electric

Basic Type

SDC Series AC SERVO SYSTEM

The Ultimate Power Solution
for Intelligent Machinery

automation.seec.com.tw

Basic Type

SDC Series

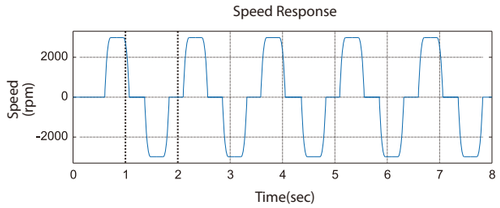
High Cost-Performance Choice

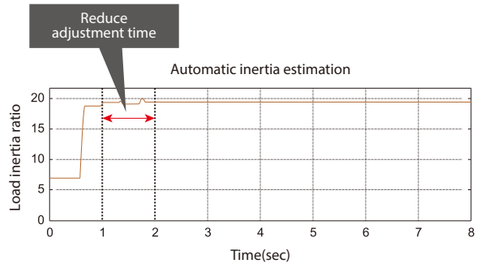
Electronics Industry | Packaging Machinery | Printing Machinery | Semiconductor Equipment | Food Machinery | Machine Tools | Woodworking Machinery

Features

Real Time Auto-Tuning, User-Friendly

Accurate and fast automatic load inertia estimation





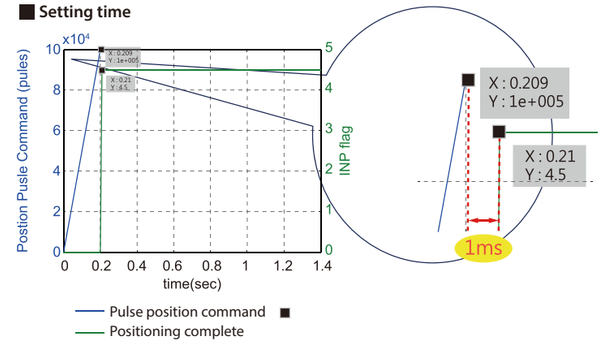
Accurate and Fast Automatic Load Inertia Estimation: The system estimates the load inertia ratio for both direct-drive and belt systems with an error margin of less than 10%, and can complete the estimation in just one cycle (forward + reverse rotation).

Outstanding Speed Response

Speed Response Frequency
2.0k Hz
1.2k Hz

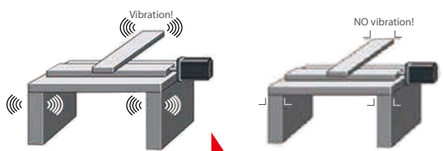
With excellent fast response, the setting time is significantly reduced, as low as 1 ms, ensuring rapid reaction, high responsiveness, and precise positioning.

Setting time



High/Low Frequency Resonance Suppression

The mechanical behavior of the inertia system is achieved using a vibration control algorithm, which suppresses two low-frequency vibrations and effectively reduces residual vibrations at the arm tip and device body. The automatic high and low-frequency vibration suppression function can be activated directly in motion mode, automatically detecting resonance frequencies and activating filters to suppress mechanism resonance. This feature shortens setting time and improves equipment performance.



Resonance Suppression Function

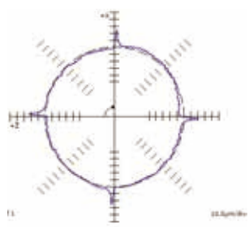
5 high-frequency filters, with a frequency range of 10~4000 Hz

2 low-frequency filters, with a detection range of 0.1~300 Hz

Disturbance Compensation and Backlash Compensation

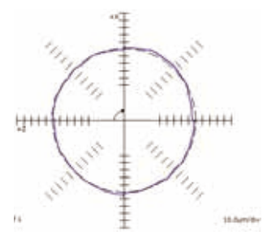
Effectively improves errors caused by nonlinear disturbances, improving roundness.

Compensation OFF



Roundness: 33.5um
Maximum Deviation: 26.2um
Minimum Deviation: -7.4um

Compensation OFF

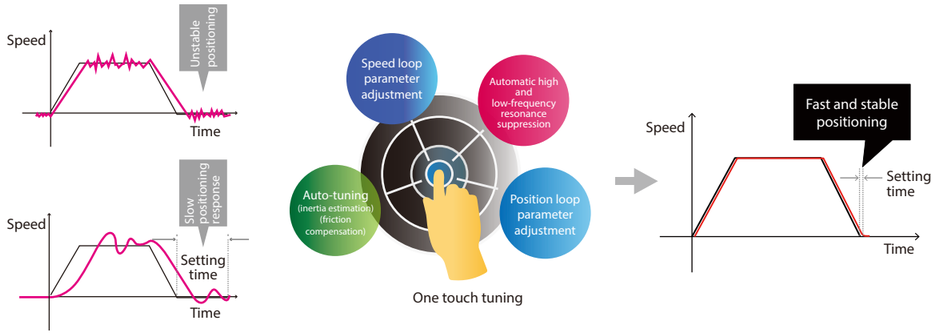


Roundness: 11.5um
Maximum Deviation: 6.8um
Minimum Deviation: -4.7um

Features

One Touch Tuning

[Easy tuning] Effectively reduces tuning time and optimizes the performance of the drive.



High Flexibility in Internal Position Mode(PR Mode)

The highly flexible positioning function reduces equipment setup costs.

Multi-Tasking Control Function

International Certification

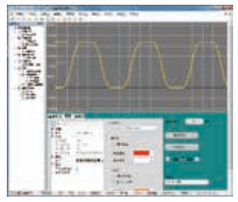
Powerful Software

Comprehensive support from setting to maintenance

- Comprehensive control

Easy tuning:
Automatic gain adjustment and inertia estimation interface

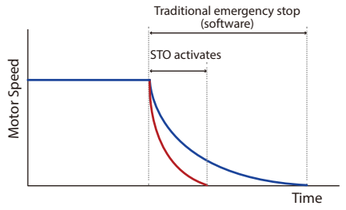
- Multi-functional monitoring



Oscilloscope function:
long-term monitoring of commands and operating status

- STO

Support STO(Safe Torque Off)function, enhancing the integration of machinery and plant safety.



CLPA Certified SDC-F model

Support CC-Link IE Field Basic

ETG Certified SDC-E model

International certification ensuring reliable performance and functionality

EtherCAT® Conformance tested

Model Definition

Servo Drive

SD ① □ ② - □□□ ③ □ ④ □ ⑤ □ ⑥ □ ⑦ - □ ⑧

① Product	
SD	Servo Drive

② Series	
C	Economical Type

③ Drive Capacity	
010	100W
020	200W
040	400W
075	750W
100	1kW
150	1.5kW
200	2kW
300	3kW
500	5kW
700	7kW

④ Communication Type	
A	Modbus (Pulse type)
E	EtherCAT
F	CC-Link IE Field Basic

⑤ Voltage Type	
2	AC220V
4	AC440V

⑥ Type Code	
Null	Standard
A	

⑦ Certification	
Null	CE
U	UL & CE

⑧ Design Code	
Null	General
M	Advanced analog
T	When ④ is 'E',it supports both STO and dynamic braking/ When ④ is any letter other than 'E', only dynamic braking is supported
Sxx	Customized type or specialized type or regional type

Servo Motor

SM ① □ ② - □ ③ □□□ ④ □□ ⑤ □ ⑥ □ ⑦ □ ⑧ □ ⑨ □ ⑩ - □ ⑪

① Product	
SM	Servo Motor

② Series
T

③ Inertia Type	
M	Medium
H	High

④ Motor Capacity	
010	100W
020	200W
040	400W
060	600W
075	750W
085	850W
100	1kW
130	1.3kW
150	1.5kW
180	1.8kW
200	2kW
290	2.9kW
300	3kW
440	4.4kW
550	5.5kW
750	7.5kW

⑤ Rated Speed	
15	1500rpm
20	2000rpm
30	3000rpm

⑥ Encoder type	
S	Optical incremental
T	Magnetic incremental
M	Optical absolute
N	Magnetic absolute
Z	Customized

⑦ Brake and Oil Seal	
A	N/A
B	W/ brake,W/o oil seal
C	W/o brake,W/ oil seal
D	W/ brake & oil seal
Z	Customized

⑧ Key & Cable Outlet Type	
A	W/o key, Load side lead W/o key, Socket-type
B	W/ key, Load side lead W/ key, Socket-type
C	W/o key, Opposite side lead
D	W/ key, Opposite side lead
H	W/ key, Socket-type
Z	Customized

⑨ Voltage Type	
Null	AC220V
4	AC440V

⑩ Certification	
Null	CE
U	UL & CE

⑪ Design Code	
H0/W0	General type
Sxx	Customized or Specialized type / Regional type

Notes

1.The part number coding here is provided to help understand the model definitions; not all possible combinations are available.
For detailed ordering information, please contact your Shihlin sales representative.
2.When ordering a magnetic absolute or optical absolute motor, an absolute encoder battery set(SDH-BAT-SET) must be purchased separately.
3.This catalog lists only standard servo motor information. Special types (e.g., hollow motors, special shaft diameters, etc.) are not included.
Please contact us for more details.

Servo Drive Specifications

SDC-A

Drive Model SDC-□□□A2			010	020	040	075		100	150		200		300	
Motor Capacity			100W	200W	400W	600W	750W	1.0kW	850W	1.5kW	1.3kW	2kW	1.8kW	3kW
Main Circuit Power	Input	Voltage 50/60Hz	1φ AC200~240V										3φ200~240VAC	
		Permissible Voltage Variation 50/60Hz	1φ AC170~264V										3φ170~264VAC	
		Permissible Frequency Variation	±5%											
	Output	Voltage	0~240VAC											
		Current	1.0 A	1.8 A	3.2 A	5.8 A		5.8 A	8.5A		12.1A		17.6A	
		Frequency	0~250 Hz						0~167Hz					
Control Method			IGBT-PWM Control (SVPWM)											
Braking Unit			Built-in											
Braking Resistor			Models rated at 400W and above have a built-in braking resistor (for applications with high motor running inertia, please refer to the user manual to determine whether an external braking resistor is required).											
Protection Function			Overcurrent, Undervoltage, Overvoltage, Overheat, Overload (Electronic thermal accumulation), Fan error protection, Pulse command error protection, Encoder error protection, Regenerative error protection, overspeed protection, Excessive deviation protection, Serial communication error, Serial communication timeout, Motor combination error, Motor collision error, Motor UVW cable disconnection, Control circuit error.											
Encoder			Magnetic encoder resolution: 17 bits Optical encoder resolution: 22 bits											
Communication Interface			RS485 (MODBUS)、USB											
Position Control Mode	Input pulse frequency		Differential transmission: 500kpps(low speed) / 4Mpps(high speed) Open collector transmission: 200kpps											
	Command Pulse Type		CCW pulse +CW pulse ; Pulse + Direction ; A phase + B phase pulse											
	Command Source		External pulse / internal register											
	Command Smoothing Method		Low-pass filter / Linear / PS-curve smoothing											
	Command Pulse Ratio		Electronic gear ratio A/B A: 1~4194304, B: 1~4194304 (Limitation:1/50 < A/B < 64000)											
Speed Control Mode	Excessive Deviation		±3 revolutions											
	Feedforward Compensation		Internal parameter setting 0~200%											
	Speed Control Range		Internal speed command 1:5000											
	Command Source		Internal register setting											
	Smoothing method		Low-pass filter / Linear acceleration and deceleration curve / PS-curve smoothing											
	Speed Fluctuation Rate(Note 1)		Load fluctuation 0~100% maximum ±0. 01%, Power fluctuation ±10% maximum0. 01%, Ambient temperature fluctuation 0°C~55°C: maximum ±0. 5%											
	Torque Limit		Internal parameter setting/For 1 kW and above: 0~±10 VDC / Rated torque(input impedance: 10~12 k Ω).											
	Bandwidth		Maximum 2kHz											
Torque control mode	Command Source		Internal register setting											
	Smoothing Method		Low-pass filter smoothing											
	Speed Limit		Internal parameter setting/ For 1 kW and above: 0~±10 VDC /Rated speed (input impedance: 10~12 k Ω).											
Digital Input/ Output	Digital Input		Servo on, Forward and reverse rotation limit , Pulse deviation elimination, Torque direction option, Speed command selection, Position command selection, Forward and reverse rotation command, Proportional control switching, Torque limit switching, Alarm reset, Emergency stop, Forward/reverse rotation prohibition limit, Control mode switching, E-gear ratio selection, Gain switching, Position command selection, Position command trigger, Motor stop, Pulse input prohibition, Event trigger command, Return to origin, Homing.											
	Digital Output		Torque limit reached, Speed limit reached, Servo ready, Zero speed reached, Target position reached, Target speed reached, Alarm indication, Warning indication, Homing is completed, Overload level reached, Internal position command is completed, Position command overflows, Software positive limit reached, Software reverse limit reached.											
Environment	Temperature		0°C ~ 55°C (If the ambient temperature is above 45°C, forced cooling is required), Storage: -20~65°C (Non-freezing)											
	Humidity		Maximum 90% RH (Non-condensing), Storage: below 90%RH (Non-condensing)											
	Installation Site		Indoors (avoid direct sunlight), no corrosive gas, avoid flammable gas, oil mist or dust.											
	Altitude		Below 1,000 m											
	Vibration		Maximum 5.9m/s²											
Cooling Method			Air convection cooling, open type(IP20)			Fan cooling, open type(IP20)								
Weight(kg)			1.4			1.7			1.5		2.1			

Notes

1.When the command speed is the rated speed, the speed fluctuation rate is calculated as(no-load speed − full-load speed) / rated speed.

Servo Drive Specifications

SDC-A

Drive Model SDC-□□□A4			100	150	200	300	500		700
Motor Capacity			850W	1.3kW	1.8kW	2.9kW	4.4kW	5.5kW	7.5kW
Main Circuit Power	Input	Voltage 50/60Hz	3φ 380~480VAC						
		Permissible Voltage Variation 50/60Hz	3φ 323~528VAC						
		Permissible Frequency Variation	±5%						
	Output	Voltage	0~240VAC						
		Current	4.1A	5.5A	8.4A	11.9A	16.5A	21A	27.2A
		Frequency	0~125Hz						
Control Circuit Power	Input Voltage 50/60Hz		1φ 380~480VAC（50/60Hz）						
	Permissible Voltage Variation 50/60Hz		1φ 323~528VAC（50/60Hz）						
	Power Consumption(W)		50						
Control Method			IGBT-PWM Control (SVPWM)						
Braking Unit			Built-in						
Braking Resistor			Built-in						
Protection Function			Overcurrent,Undervoltage, Overvoltage, Overheat, Overload (Electronic thermal accumulation), Pulse command error protection, Encoder error protection, Overspeed protection, Excessive deviation protection, Serial communication error, Serial communication timeout, Motor combination error, Motor collision error, Motor UVW cable disconnection, Control circuit error.						
Encoder			Magnetic encoder resolution: 17 bits Optical encoder resolution: 22 bits.						
Communication Interface			RS485 (MODBUS)、USB						
Position Control Mode	Input pulse frequency		Differential transmission: 500 kpps (low speed) / 4M pps (high speed) Open collector transmission: 200kpps						
	Command Pulse Type		CCW pulse +CW pulse; Pulse + Direction; A phase + B phase pulse						
	Command Source		External pulse / internal register						
	Command Smoothing Method		Low-pass filter / Linear / PS-curve smoothing						
	Command Pulse Ratio		Electronic gear ratio A/B A: 1~4194304, B: 1~4194304 (Limitation:1/50 < A/B < 64000)						
Speed Control Mode	Excessive Deviation		±3 revolutions						
	Torque Limit		Internal parameter setting or external analog input setting (0~±10 VDC / maximum torque).						
	Feedforward Compensation		Internal parameter setting 0~200%						
	Speed Control Range		Internal speed command 1:5000						
	Command Source		External analog voltage input/Internal register setting						
	Smoothing Method		Low-pass filter / Linear acceleration and deceleration curve / PS-curve smoothing						
	Analog Speed Command Input		0~±10 V DC/Rated speed (input impedance: 10~12 k Ω).						
	Speed Fluctuaion Rate(Note 1)		Load fluctuation 0~100% maximum ±0. 01%, Power fluctuation ±10% maximum0. 01%, Ambient temperature fluctuation 0°C~55°C: maximum ±0. 5%						
	Bandwidth		Maximum 2.0kHz						
Torque control mode	Command Source		External analog voltage input/Internal register setting						
	Smoothing Method		Low-pass filter smoothing						
	Analog Torque Command Input		0~±10 V DC/Maximum torque (input impedance: 10~12 k Ω).						
	Speed Limit		Internal parameter setting or external analog input setting (0~±10 VDC / maximum speed).						
Digital Input/ Output	Digital Input		Servo on, Forward and reverse rotation limit , Pulse deviation elimination, Torque direction option, Speed command selection, Position command selection, Forward and reverse rotation command, Proportional control switching, Torque limit switching, Alarm reset, Emergency stop, Forward/reverse rotation prohibition limit, Control mode switching, E-gear ratio selection, Gain switching, Position command selection, Position command trigger, Motor stop, Pulse input prohibition, Event trigger command, Return to origin, Homing.						
	Digital Output		Torque limit reached, Speed limit reached, Servo ready, Zero speed reached, Target position reached, Target speed reached, Alarm indication, Warning indication, Homing is completed, Overload level reached, Internal position command is completed, Position command overflows, Software positive limit reached, Software reverse limit reached.						
Environment	Temperature		0°C ~ 55°C(If the ambient temperature is above 45°C, forced cooling is required), Storage: -20~65°C (Non-freezing)						
	Humidity		Maximum 90% RH (Non-condensing), Storage: below 90%RH (Non-condensing)						
	Installation Site		Indoors (avoid direct sunlight), no corrosive gas, avoid flammable gas, oil mist or dust.						
	Altitude		Below 1,000 m						
	Vibration		Maximum 5.9m/s²						
Cooling Method			Fan cooling, open type(IP20)						
Weight(kg)			1.4		2.1		5.6		

Notes

1.When the command speed is the rated speed, the speed fluctuation rate is calculated as(no-load speed − full-load speed) / rated speed.

Servo Drive Specifications

SDC-A(M)

Drive Model SDC-□□□A2-M			010	020	040	075		100
Motor Capacity			100W	200W	400W	600W	750W	1.0kW
Main Circuit Power	Input	Voltage 50/60Hz	1φ AC200~240V					
		Permissible Voltage Variation 50/60Hz	1φ AC170~264V					
		Permissible Frequency Variation	±5%					
	Output	Voltage	0~240VAC					
		Current	1.0 A	1.8 A	3.2 A	5.8 A		5.8 A
		Frequency	0~250 Hz					
Control Circuit Power	Input Voltage 50/60Hz		1φ AC200~240V					
	Permissible Voltage Variation 50/60Hz		1φ AC170~264V					
	Permissible Frequency Variation		±5%					
	Power Consumption (W)		30					
Control Method			IGBT-PWM Control (SVPWM)					
Braking Unit			Built-in					
Braking Resistor			Models rated at 400 W and above have a built-in braking resistor (for applications with high motor running inertia, please refer to the user manual to determine whether an external braking resistor is required).					
Protection function			Overcurrent, Undervoltage, Overvoltage, Overheat, Overload (Electronic thermal accumulation), Fan error protection, Pulse command error protection, Encoder error protection, Overspeed protection, Excessive deviation protection, Serial communication error, Serial communication timeout, Motor combination error, Motor collision error, Motor UVW cable disconnection, Control circuit error.					
Encoder			Magnetic encoder resolution: 17 bits Optical encoder resolution: 22 bits					
Communication Interface			RS485 (MODBUS)、USB					
Position Control Mode	Input Pulse Frequency		Differential input: 500kpps (low speed) / 4Mpps (high speed), Open collector input: 200kpps					
	Command Pulse Type		CCW pulse +CW pulse; Pulse + Direction; A phase + B phase					
	Command Source		External pulse / Internal register					
	Smoothing Method		Low-pass filter / Linear / PS-curve smoothing					
	Command Pulse Ratio		Electronic gear ratio A/B A: 1~4194304, B: 1~4194304 (Limitation:1/50 < A/B < 64000)					
Speed Control Mode	Excessive Deviation		±3 revolutions					
	Torque Limit		Internal parameter setting					
	Feedforward Compensation		Internal parameter setting 0~200%					
	Speed Control Range		Internal speed command 1:5000					
	Command Source		External analog voltage input/Internal register setting					
	Smoothing Method		Low-pass filter / Linear acceleration and deceleration curve / S-curve smoothing					
	Analog Speed Command Input		0~±10 V DC/Rated speed (input impedance: 10~12 k Ω).					
	Speed Fluctuation Rate(Note 1)		Load fluctuation 0~100% maximum ±0. 01%, Power fluctuation ±10% maximum0. 01% Ambient temperature fluctuation 0°C~55°C: maximum ±0. 5%					
	Torque Limit		Internal parameter setting /External analog input setting (For 0~±10 V DC /maximum torque)					
	Bandwidth		Maximum 2kHz					
Torque control mode	Command Source		External analog voltage input/Internal register setting					
	Smoothing Method		Low-pass filter smoothing					
	Analog Torque Command Input		0~±10 V DC/Maximum torque (input impedance: 10~12 k Ω).					
	Speed Limit		Internal parameter setting /external analog input setting (For 0~±10 V DC /maximum speed)					
Digital Input / Output	Digital Input		Servo on, Forward and reverse rotation limit , Pulse deviation elimination, Torque direction option, Speed command selection, Position command selection, Forward and reverse rotation command, Proportional control switching, Torque limit switching, Alarm reset, Emergency stop, Forward/reverse rotation prohibition limit, Control mode switching, E-gear ratio selection, Gain switching, Position command selection, Position command trigger, Motor stop, Pulse input prohibition, Event trigger command, Return to origin, Homing.					
	Digital Output		Torque limit reached, Speed limit reached, Servo ready, Zero speed reached, Target position reached, Target speed reached, Alarm indication, Warning indication, Homing is completed, Overload level reached, Internal position command is completed, Position command overflows, Software positive limit reached, Software reverse limit reached.					
Environment	Temperature		0°C~55°C (If the ambient temperature is above 45°C, forced cooling is required), Storage: -20~65°C (Non-freezing)					
	Humidity		Maximum 90% RH (Non-condensing), Storage: below 90%RH (Non-condensing)					
	Installation Site		Indoors (avoid direct sunlight), no corrosive gas, avoid flammable gas, oil mist or dust.					
	Altitude		Below 1,000 m					
	Vibration		Maximum 5.9m/s²					
Cooling Method			Natural cooling, open type (IP20)			Fan cooling, open type (IP20)		
Weight(kg)			1.4	1.4	1.4	1.7		1.7

Notes

1.When the command speed is the rated speed, the speed fluctuation rate is calculated as(no-load speed − full-load speed) / rated speed.

Servo Drive Specifications

SDC-E

Drive Model SDC-□□□E2			010	020	040	075		100	150		200		300	
Motor Capacity			100W	200W	400W	600W	750W	1.0kW	850W	1.5kW	1.3kW	2kW	1.8kW	3kW
Main Circuit Power	Input	Voltage 50/60Hz	1φ/3φ AC200~240V										3φ 200~240 VAC	
		Permissible Voltage Variation 50/60Hz	1φ/3φ AC170~264V										3φ170~264 VAC	
		Permissible Frequency Variation	±5%											
	Output	Voltage	0~240VAC											
		Current	1.0 A	1.8 A	3.2 A	5.8 A		5.8 A	8.5A		12.1A		17.6A	
		Frequency	0~250 Hz						0~167Hz					
Control Circuit Power	Input Voltage		N/A						1φ 200~240 VAC					
	Permissible Voltage Variation 50/60Hz		N/A						1φ170~264 VAC					
	Permissible Frequency Variation		N/A						±5%					
	Power Consumption (W)		N/A						35					
Control Method			IGBT-PWM Control (SVPWM)											
Dynamic Brake			Software(Built-in)/Hardware(optional)											
Protection Function			Overcurrent, Undervoltage, Overvoltage, Overheat, Overload (Electronic thermal accumulation), Encoder error protection, Overspeed protection, Excessive deviation protection, Motor combination error, Motor collision error, motor UVW cable disconnection, Control circuit error.											
Encoder			Magnetic encoder resolution: 17 bits Optical encoder resolution: 23 bits											
Communication Interface			EtherCAT、USB											
Position Control Mode	Command Source		Ether CAT communication control											
	Smoothing Method		Low-pass filter / Linear / PS-curve smoothing											
	Command Pulse Ratio		Electronic gear ratio A/B times A: 1~67108864, B: 1~67108864 (Limitation 1/50 < A/B < 64000) 24-bit encoder (frame size 80 and below) / 23-bit encoder (frame size 130 and above) (Limitation: 1/50 < A/B < 25600) (17-bit encoder)											
	Excessive Deviation		±3 revolutions											
	Torque Limit		EtherCAT communication setting											
	Feedforward Compensation		Internal parameter setting 0~200% or EtherCAT communication setting (0~200%)											
Speed Control Mode	Speed Control Range		Internal speed command 1:5000											
	Command Source		EtherCAT communication control											
	Smoothing Method		Low-pass filter / Linear acceleration and deceleration curve / PS-curve smoothing											
	Speed Fluctuation Rate(Note 1)		Load fluctuation 0~100% maximum ±0. 01%, Power fluctuation ±10% maximum 0. 01%											
	Torque Limit		EtherCAT communication setting											
	Bandwidth		Maximum 2kHz											
Torque control mode	Command Source		EtherCAT communication control											
	Smoothing Method		Low-pass filter smoothing											
	Speed Limit		EtherCAT communication setting											
Digital Input / Output	Digital Input		Servo on, Forward and reverse rotation limit, Torque direction option, Speed command selection, Forward and reverse rotation command, Proportional control switching, Torque limit switching, Alarm reset, Emergency stop, Gain switching, Position command selection, Position command trigger, Motor stop, Event trigger command, Return to origin, Homing.											
	Digital Output		Torque limit reached, Speed limit reached, Servo ready, Zero speed reached, Target position reached, Target speed reached, Alarm indication, Warning indication, Homing is completed, Overload level reached, Internal position command is completed, Position command overflows, Software positive limit reached, Software reverse limit reached.											
Environment	Temperature		0°C ~ 55°C (If the ambient temperature is above 45°C, forced cooling is required), Storage: -20~65°C (Non-freezing)											
	Humidity		Maximum 90% RH (Non-condensing), Storage: below 90%RH (Non-condensing)											
	Installation Site		Indoors (avoid direct sunlight), no corrosive gas, avoid flammable gas, oil mist or dust.											
	Altitude		Below 1,000 m											
	Vibration		Maximum 5.9m/s²											
Cooling Method			Natural cooling, open type (IP20)						Fan cooling, open type (IP20)					
Weight(kg)			1.4	1.4	1.4	1.7		1.7	1.5		2.1		2.1	

Notes

1.When the command speed is the rated speed, the speed fluctuation rate is calculated as(no-load speed − full-load speed) / rated speed.

Servo Drive Specifications

SDC-E

Drive Model SDC-□□□E4			100	150	200	300	500		700
Motor Capacity			850W	1.3kW	1.8kW	2.9kW	4.4kW	5.5kW	7.5kW
Main Circuit Power	Input	Voltage 50/60Hz	3φ 380~480 VAC						
		Permissible Voltage Variation 50/60Hz	3φ 323∽528 VAC						
		Permissible Frequency Variation	±5%						
	Output	Voltage	0~240VAC						
		Current	4.1A	5.5A	8.4A	11.9A	16.5A	21A	27.2A
		Frequency	0~125Hz						
Control Circuit Power	Input Voltage		1φ 380~480 VAC(50/60Hz)						
	Permissible Voltage Variation 50/60Hz		1φ 323~528 VAC(50/60Hz)						
	Power Consumption (W)		50						
Control Method			IGBT-PWM Control (SVPWM)						
Dynamic Brake			Software(Built-in)/Hardware(optional)						
Protection Function			Overcurrent, Undervoltage, Overvoltage, Overheat, Overload (Electronic thermal accumulation), Encoder error protection, Overspeed protection, Excessive deviation protection, Motor combination error, Motor collision error, motor UVW cable disconnection, Control circuit error.						
Encoder			Magnetic encoder resolution: 17 bits Optical encoder resolution: 23 bits						
Communication Interface			EtherCAT、USB						
Position Control Mode	Command Source		Ether CAT communication control						
	Smoothing Method		Low-pass filter / Linear / PS-curve smoothing						
	Command Pulse Ratio		Electronic gear ratio A/B times A: 1~67108864, B: 1~67108864 (Limitation 1/50 < A/B < 64000) (23-bit encoder) (Limitation: 1/50 < A/B < 25600) (17-bit encoder)						
	Excessive Deviation		±3 revolutions						
	Torque Limit		EtherCAT communication setting						
	Feedforward Compensation		Internal parameter setting 0~200% or EtherCAT communication setting (0~200%)						
Speed Control Mode	Speed Control Range		Internal speed command 1:5000						
	Command Source		EtherCAT communication control						
	Smoothing Method		Low-pass filter / Linear acceleration and deceleration curve / PS-curve smoothing						
	Speed Fluctuation Rate(Note 1)		Load fluctuation 0~100% maximum ±0. 01%, Power fluctuation ±10% maximum 0. 01%						
	Torque Limit		EtherCAT communication setting						
	Bandwidth		Maximum 2kHz						
Torque control mode	Command Source		EtherCAT communication control						
	Smoothing Method		Low-pass filter smoothing						
	Speed Limit		EtherCAT communication setting						
Digital Input / Output	Digital Input		Servo on, Forward and reverse rotation limit, Torque direction option, Speed command selection, Forward and reverse rotation command, Proportional control switching, Torque limit switching, Alarm reset, Emergency stop, Gain switching, Position command selection, Position command trigger, Motor stop, Event trigger command, Return to origin, Homing.						
	Digital Output		Torque limit reached, Speed limit reached, Servo ready, Zero speed reached, Target position reached, Target speed reached, Alarm indication, Warning indication, Homing is completed, Overload level reached, Internal position command is completed, Position command overflows, Software positive limit reached, Software reverse limit reached.						
Environment	Temperature		0°C ~ 55°C (If the ambient temperature is above 45°C, forced cooling is required), Storage: -20~65°C (Non-freezing)						
	Humidity		Maximum 90% RH (Non-condensing), Storage: below 90%RH (Non-condensing)						
	Installation Site		Indoors (avoid direct sunlight), no corrosive gas, avoid flammable gas, oil mist or dust.						
	Altitude		Below 1,000 m						
	Vibration		Maximum 5.9m/s²						
Cooling Method			Fan cooling, open type (IP20)						
Weight(kg)			1.4	1.4	2.1	2.1	5.6	5.6	5.6

Notes

1.When the command speed is the rated speed, the speed fluctuation rate is calculated as(no-load speed − full-load speed) / rated speed.

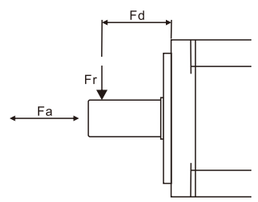
Servo Motor Specifications

SMT-H0

Servo Motor Model SMT-□□□□□□-H0		Unit	H010	H020	H040	H060	H075	H100	M100	M150	M200	M300
Compatible Servo Drive Model			Please refer to the "Servo Motor & Drive Model Definitions" for more details									
Rated Output Capacity		W	100	200	400	600	750	1000	1000	1500	2000	3000
Voltage Class		V	220 V									
Rated Torque (Note 1)		Nm	0.32	0.64	1.27	1.91	2.4	3.2	4.8	7.2	9.55	14.5
Maximum Torque		Nm	0.96	1.92	3.2	5.73	7.87	9.4	13.5	17.8	20.2	37.5
Rated Speed		rpm	3000						2000			
Maximum Speed		rpm	6000		5000				3000			
Rated Current		A	1	1.8	2.8	4	4.3	4.8	5	8.5	10	15
Maximum Current		A	3	5.4	7.1	12	14.1	14.1	14.1	21	21.2	39
Inertia Type		--	High Inertia						Medium Inertia			
Rotor Inertia J (×10-4) (Note 2)		kg-cm²	0.06 (0.08)	0.32 (0.37)	0.68 (0.73)	0.84 (0.87)	1.72 (1.77)	2.4 (2.45)	7.2 (8.7)	10.3 (11.8)	12.7 (14.2)	19.7 (21.2)
Power at Continuous Rated Torque		kw/s	17.7	12.8	23.84	43.42	33.49	42.67	32	50.33	71.81	106.73
Insulation Class		--	Class F(CE)									
Insulation Resistance		--	20MΩ @ DC500V									
Insulation Withstand Voltage		--	60sec @ AC1500V									
Encoder Resolution		--	Magnetic Encoder: 17 bits / Optical Encoder 23 bits									
Motor Structure (Note 3)		--	Fully enclosed, natural cooling(Protection rating: IP67)									
Vibration Grade		--	Below V-15									
Operating Environment	Ambient Temperature	--	-20°C ~ 40°C (non-freezing) / Storage:-20°C ~ 60°C (non-freezing)									
	Ambient Humidity	--	20%~ 80% RH (non-condensing) / Storage: 20%~ 80% RH (non-condensing)									
	Altitude	--	Below 1,000m									
	Environmental Restrictions	--	Indoor (no direct sunlight); no corrosive gas, flammable gas, oil mist, or dust									
	Vibration Resistance	--	5G						2.5G			
Shaft Allowable Load (Note 5)	Fd	mm	20	25	25	25	30	30	50	50	50	50
	Radial Load Fr	N	68	245	245	245	392	392	480	480	480	480
	Axial Load Fa	N	50	74	74	74	147	147	90	90	90	90
Brake Specifications (Note 4)	Input Voltage	V	DC 24V ± 10%									
	Braking Torque	Nm	0.32	1.5	1.5	2	3.5	4	10	12	12	17
	Power Consumption	W	8	7.2	7.2	7.2	11.5	13	23	23	23	23
	Current Consumption	A	0.5	0.3	0.3	0.3	0.48	0.56	1	1	1	1
	Release Time	ms	50	50	50	50	70	60	100	100	100	100
	Pull-in Time	ms	20	20	20	20	20	20	60	60	60	60
Motor Weight (Note 2)		Kg	0.50 (0.65)	0.90 (1.20)	1.22 (1.65)	1.40 (1.70)	2.20 (3.00)	2.71 (3.36)	4.8 (6.4)	6.2 (7.9)	7.3 (9.0)	10.7 (12.2)

Notes

Note 1: For lifting axes or reciprocating loads, the average load ratio during operation should be 75% or less.
Note 2: Values shown in brackets ( ) indicate rotor inertia and motor weight including electromagnetic brake.
Note 3: The IP67 protection rating applies to the motor body only, excluding the output shaft area and connectors.
Note 4: The electromagnetic brake is only for holding the mechanism when stopped and must not be used for braking during operation.
Note 5: Refer to the allowable output shaft load diagram.



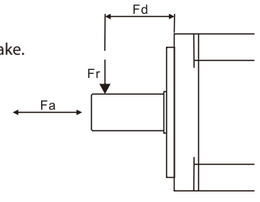
Servo Motor Specifications

SMT-W0

Servo Motor Model SMT-□□□□□□-W0		単位	H085	H130	H180	H085	H130	H180	H290	H440	H550	H750
Compatible Servo Drive Model			Please refer to the "Servo Motor & Drive Model Definitions" for more details									
Rated Output Capacity		W	850	1300	1800	850	1300	1800	2900	4400	5500	7500
Voltage Class		V	220 V			440 V						
Rated Torque (Note 1)		Nm	5.4	8.3	11.5	5.4	8.3	11.5	18.6	28.4	35	48
Maximum Torque		Nm	11	16.5	34.5	14.3	14.7	23.8	38.7	85.2	89.2	120
Rated Speed		rpm	1500									
Maximum Speed		rpm	3000									
Rated Current		A	6.9	10.7	13.8	4	6	8.5	11.9	16.5	20.8	26
Maximum Current		A	14.1	21.2	41.4	10.6	10.6	17.6	24.7	49.5	53.0	65.0
Inertia Type		--	High Inertia									
Rotor Inertia J (×10-4) (Note 2)		kg-cm²	10.9 (12.13)	16.9 (18.13)	21.4 (22.63)	10.9 (12.13)	16.9 (18.13)	21.4 (22.63)	63.5 (69.5)	88.5 (94.5)	114.4 (120.4)	136.6 (142.6)
Power at Continuous Rated Torque		kw/s	26.65	41.16	61.8	26.65	41.16	61.8	54.48	91.14	107.08	168.67
Insulation Class		--	Class F(CE)									
Insulation Resistance		--	20MΩ @ DC500V									
Insulation Withstand Voltage		--	60sec @ AC1500V									
Encoder Resolution		--	Magnetic Encoder: 17 bits / Optical Encoder: 23 bits									
Motor Structure (Note 3)		--	Fully enclosed, natural cooling(Protection rating: IP65)									
Vibration Grade		--	Below V-15									
Operating Environment	Ambient Temperature	--	-20°C ~ 40°C (non-freezing) / Storage:-20°C ~ 40°C (non-freezing)									
	Ambient Humidity	--	Below 90% RH (non-condensing) / Storage: Below 90% RH (non-condensing)									
	Altitude	--	Below 1,000m									
	Environmental Restrictions	--	Indoor (no direct sunlight); no corrosive gas, flammable gas, oil mist, or dust									
	Vibration Resistance	--	5G									
Shaft Allowable Load (Note 5)	Fd	mm	57	57	57	57	57	57	79	79	79	79
	Radial Load Fr	N	490	490	490	490	490	490	1176	1176	1176	1176
	Axial Load Fa	N	196	196	196	196	196	196	490	490	490	490
Brake Specifications (Note 4)	Input Voltage	V	DC 24V ± 10%									
	Braking Torque	Nm	15	15	15	15	15	15	50	50	50	50
	Power Consumption	W	23	23	23	23	23	23	50	50	50	50
	Current Consumption	A	0.96	0.96	0.96	0.96	0.96	0.96	2.1	2.1	2.1	2.1
	Release Time	ms	100	100	100	100	100	100	180	180	180	180
	Pull-in Time	ms	60	60	60	60	60	60	80	80	80	80
Motor Weight (Note 2)		Kg	5.6 (7.6)	7.6 (9.6)	9.3 (11.3)	5.6 (7.6)	7.6 (9.6)	9.3 (11.3)	16.7 (21.2)	21.1 (25.6)	25.6 (30.1)	30.8 (35.3)

Notes

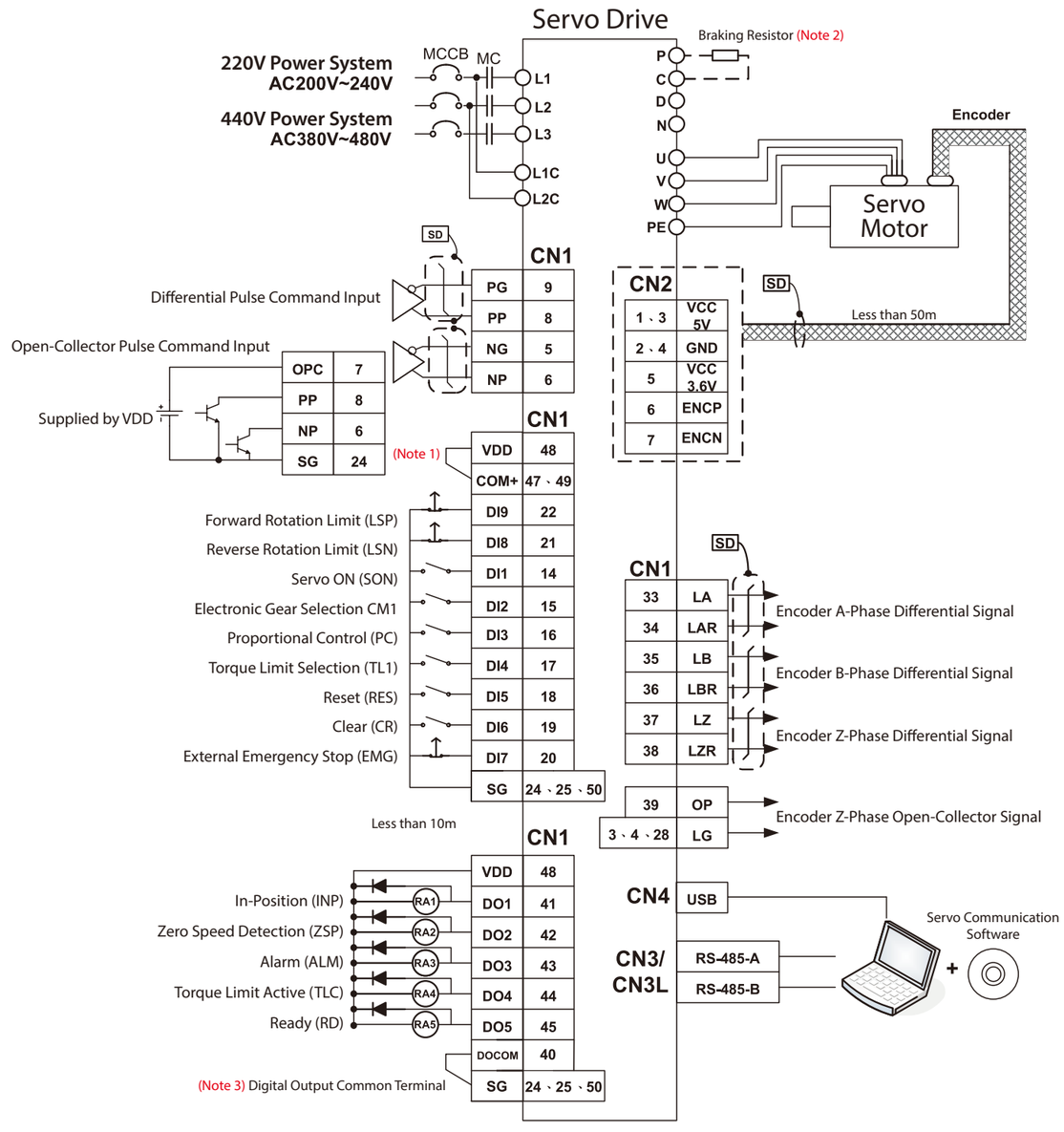
Note 1: For lifting axes or reciprocating loads, the average load ratio during operation should be 75% or less.
Note 2: Values shown in parentheses ( ) indicate rotor inertia and motor weight including electromagnetic brake.
Note 3: The IP65 protection rating applies to the motor body only, excluding the output shaft area and connectors.
Note 4: The electromagnetic brake is only for holding the mechanism when stopped and must not be used for braking during operation.
Note 5: Refer to the allowable output shaft load diagram.



Wiring Diagram

SDC-A

Pt Mode: Position Control Mode



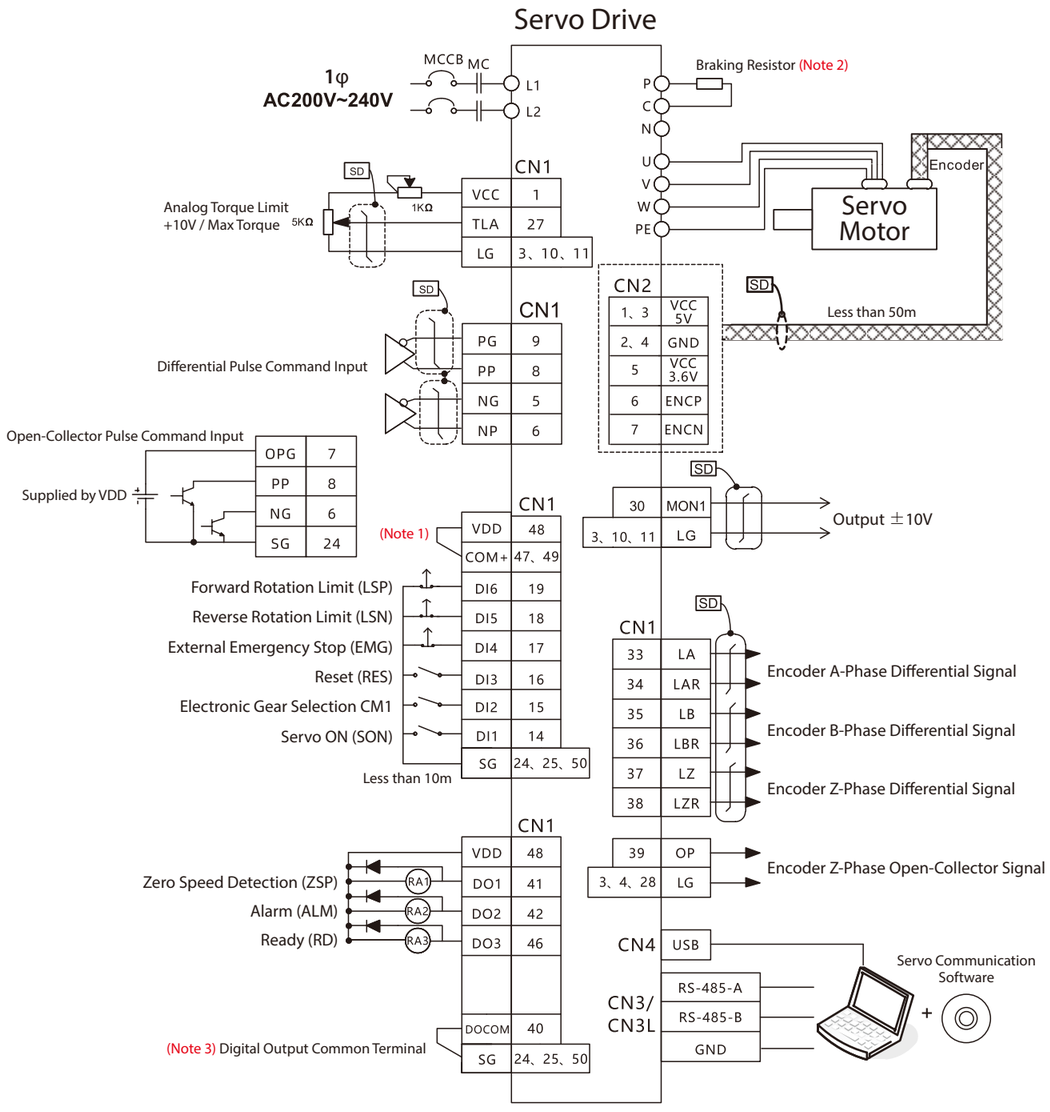
Notes

Note 1: When using an external power supply, do not connect VDD to COM+.
Note 2: Please refer to the user manual for details on the braking resistor and braking unit.
Note 3: Please refer to the user manual for wiring of digital outputs (DO), either SINK type or SOURCE type

Wiring Diagram

SDC-A(M)

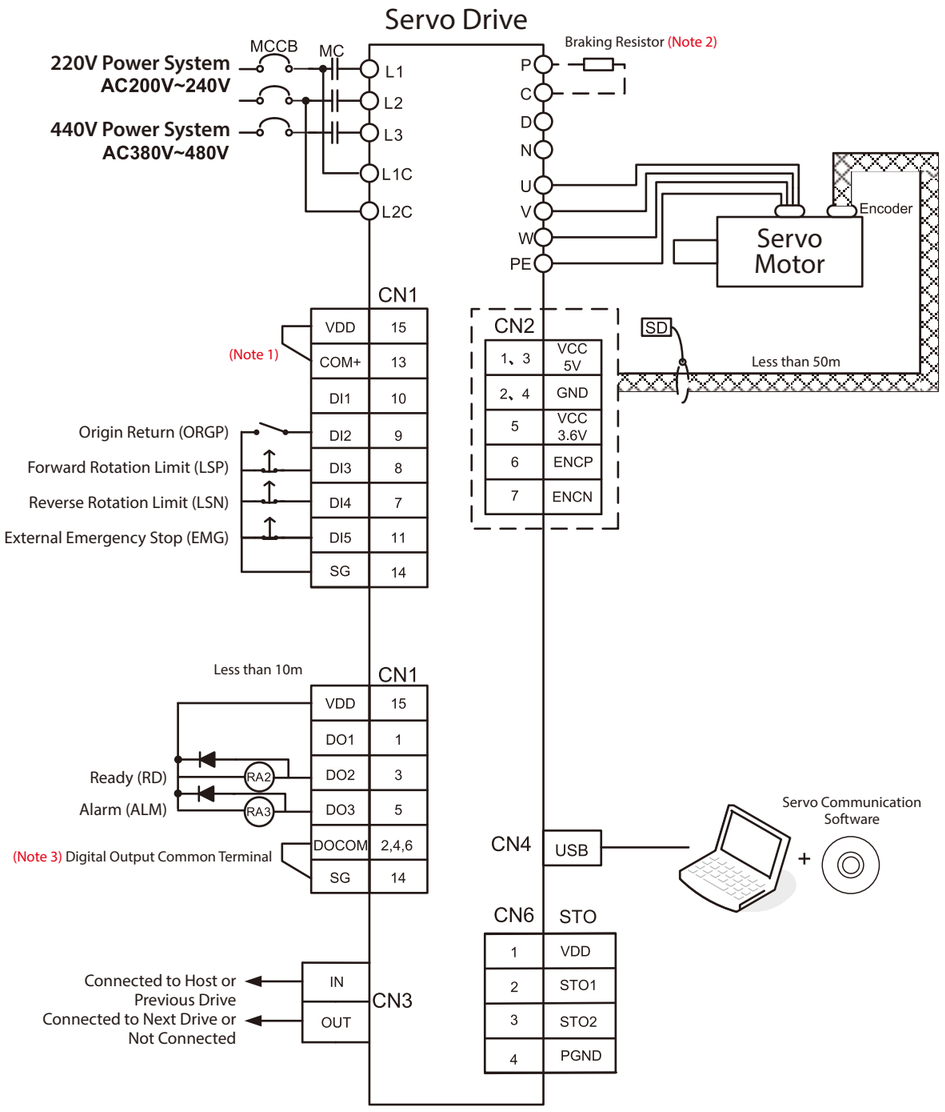
Pt Mode: Position Control Mode



Wiring Diagram

SDC-E

COE Mode: EtherCAT Mode



Notes

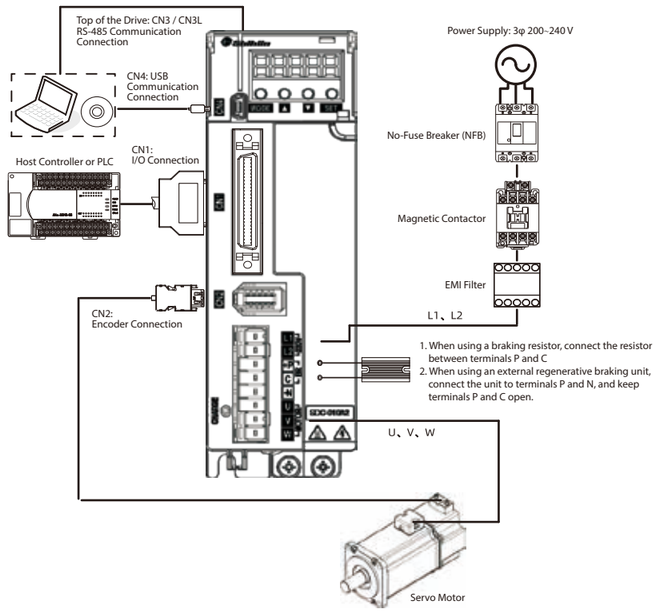
Note 1: When using an external power supply, do not connect VDD to COM+.
Note 2: Please refer to the user manual for details on the braking resistor and braking unit.
Note 3: Please refer to the user manual for wiring of digital outputs (DO), either SINK type or SOURCE type

Notes

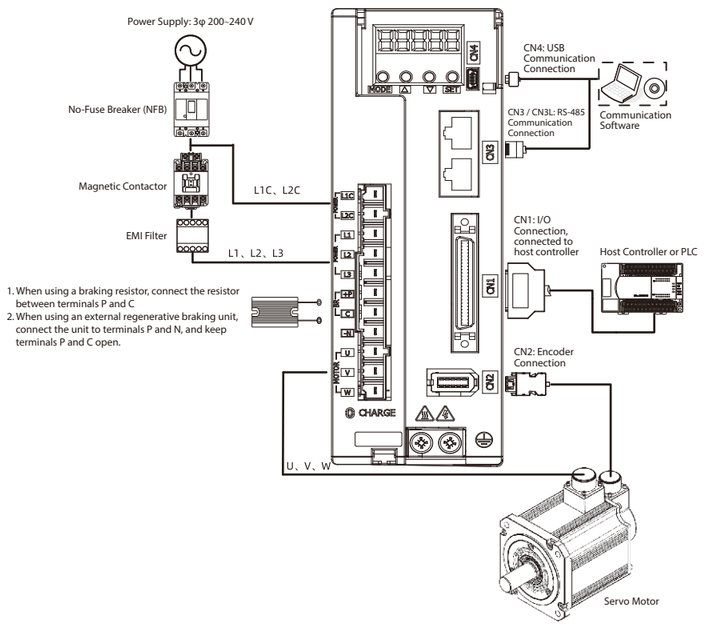
Note 1: When using an external power supply, do not connect VDD to COM+.
Note 2: Please refer to the user manual for details on the braking resistor and braking unit.
Note 3: Please refer to the user manual for wiring of digital outputs (DO), either SINK type or SOURCE type

Connections with Peripheral Equipment

220V Series: SDC-A(1kW and below) Peripheral Equipment Wiring Diagram

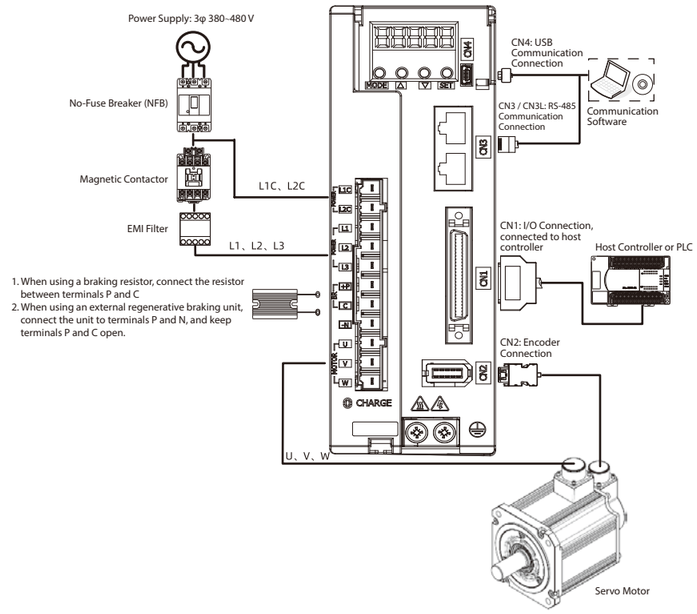


220V Series: SDC-A (1.5kW~3kW) Peripheral Equipment Wiring Diagram

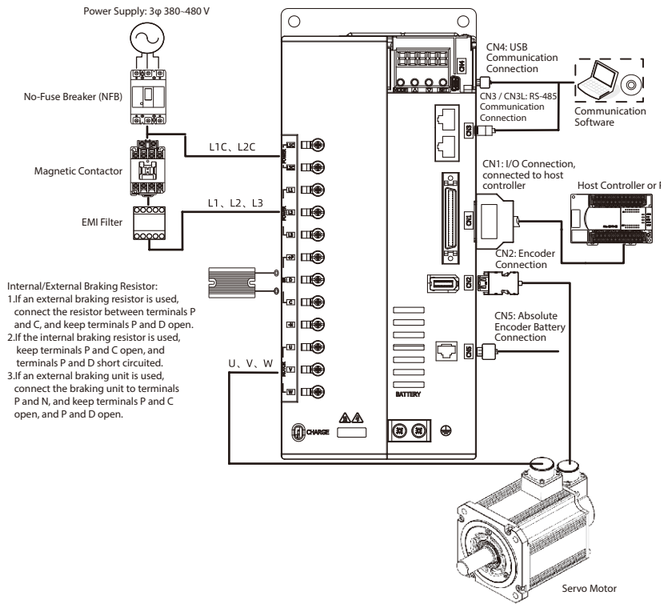


Connections with Peripheral Equipment

440V Series: SDC-A(1kW~3kW) Peripheral Equipment Wiring Diagram

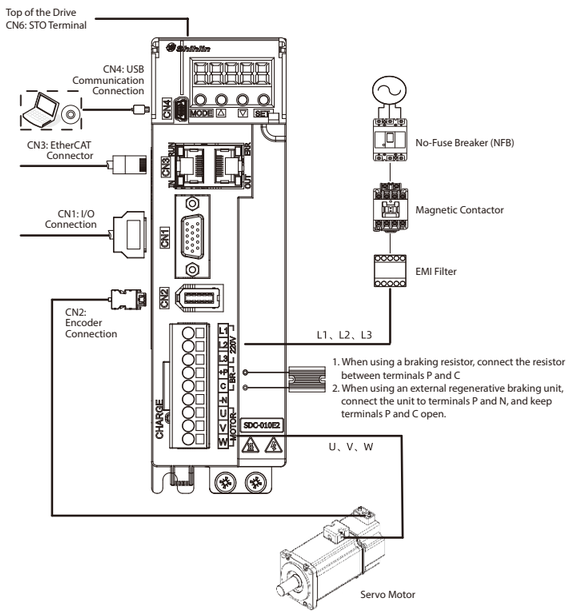


440V Series: SDC-A(5kW~7kW) Peripheral Equipment Wiring Diagram



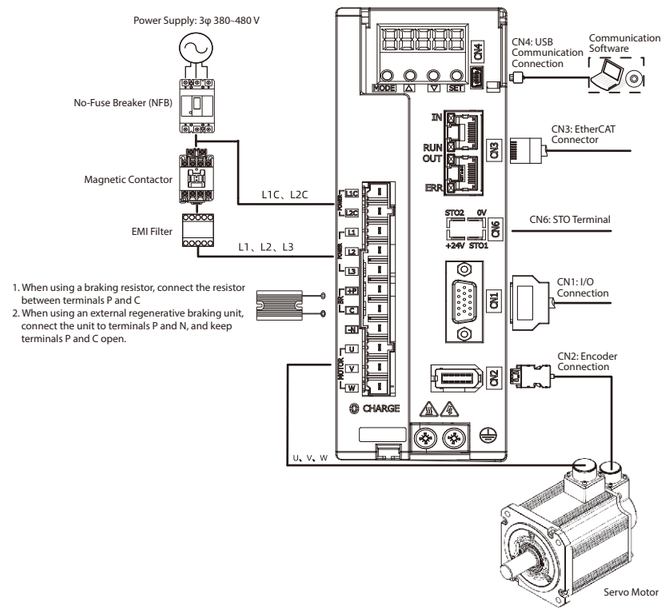
Connections with Peripheral Equipment

220 V Series: SDC-E/SDC-F(1kW and below) Peripheral Equipment Wiring Diagram

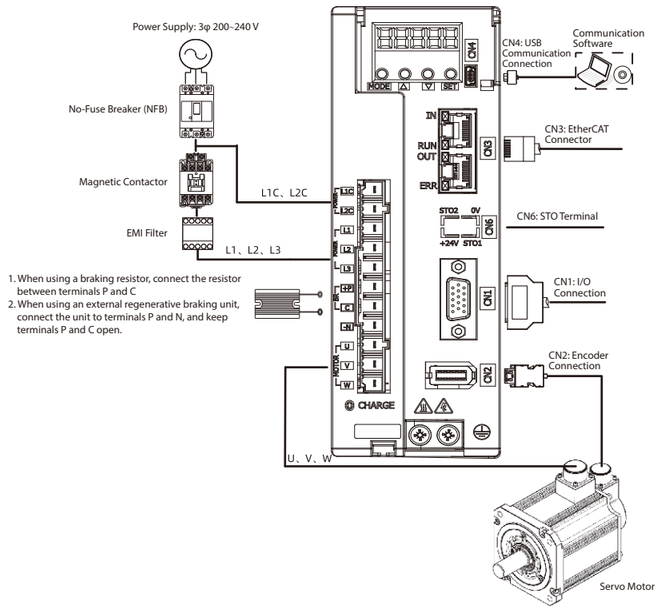


Connections with Peripheral Equipment

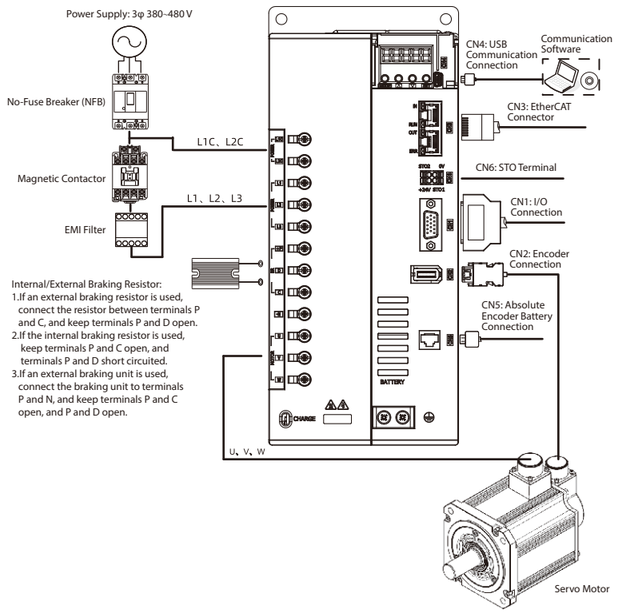
440V Series: SDC-E/SDC-F Model(1kW~3kW) peripheral device wiring diagram



220V Series: SDC-E/SDC-F Model(1.5kW~3kW) peripheral device wiring diagram

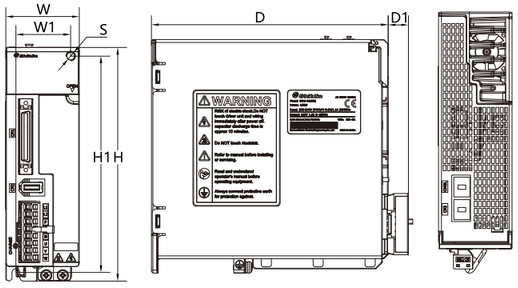


440V Series: SDC-E/SDC-Fl(5kW~7kW) Peripheral Equipment Wiring Diagram



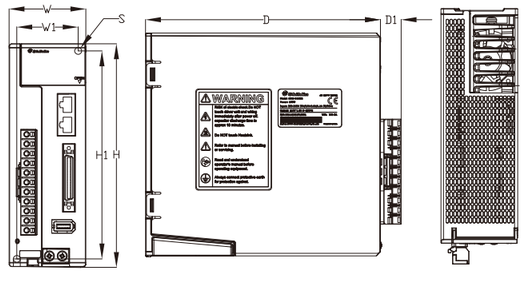
Servo Drive Dimensions

SDC-A, SDC-A(M) Series Frame A



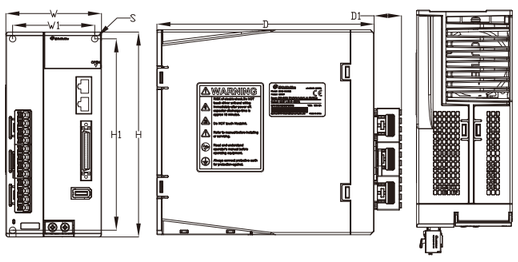
Model	W	W1	H	H1	D	D1	S
SDC-010	51	38	162	150	164	14	5.5
SDC-020							
SDC-040							
SDC-075							
SDC-100							

SDC-A Series Frame B



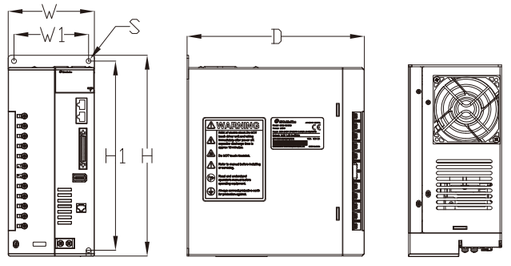
Model	W	W1	H	H1	D	D1	S
SDC-100	60	48	175	162	184	16.25	5.5
SDC-150							

SDC-A Series Frame C



Model	W	W1	H	H1	D	D1	S
SDC-200	85	73	182	170	193	22.5	6
SDC-300							

SDC-A Series Frame D



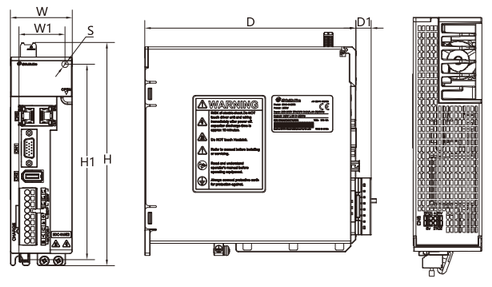
Model	W	W1	H	H1	D	D1	S
SDC-500	112	97	261	246	230.5	/	6.5
SDC-700							

Note

1. The dimensions of each model are available on the Shihlin website. The dimensions of the servo drive may be updated without prior notice.
2. 3D file download link: https://global.seec.com.tw/en/support/104-02.html

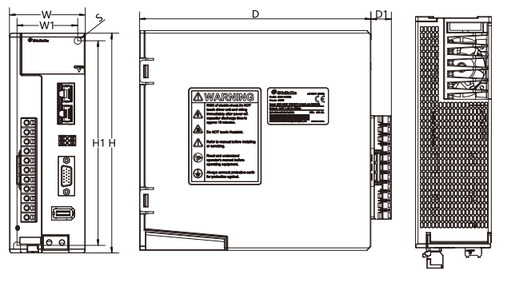
Servo Drive Dimensions

SDC-E, SDC-F Series Frame A



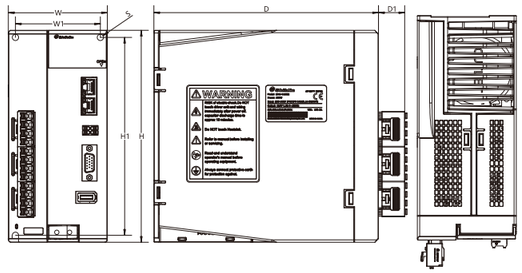
Model	W	W1	H	H1	H2	D	D1	S
SDC-010	51	38	172	161	12	174	12.6	5.6
SDC-020								
SDC-040								
SDC-075								
SDC-100								

SDC-E, SDC-F Series Frame B



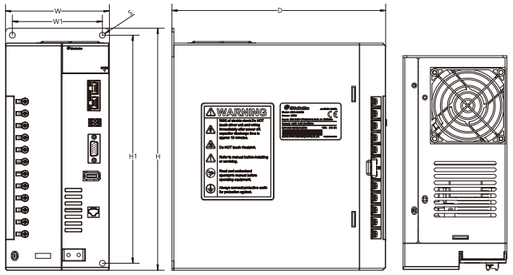
Model	W	W1	H	H1	D	D1	S
SDC-100	60	48	175	162	184	16.25	5.5
SDC-150							

SDC-E, SDC-F Series Frame C



Model	W	W1	H	H1	D	D1	S
SDC-200	85	73	182	170	193	29.9	6
SDC-300							

SDC-E, SDC-F Series Frame D



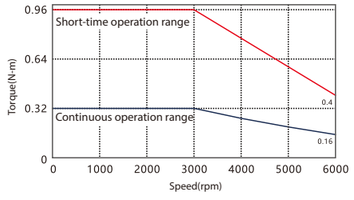
Model	W	W1	H	H1	D	D1	S
SDC-500	112	97	261	246	230.5	/	6.5
SDC-700							

Note

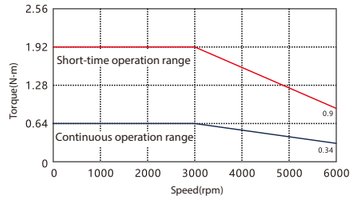
1. The dimensions of each model are available on the Shihlin website. The dimensions of the servo drive may be updated without prior notice.
2. 3D file download link: https://global.seec.com.tw/en/support/104-02.html

Servo Motor Torque Characteristics Curve

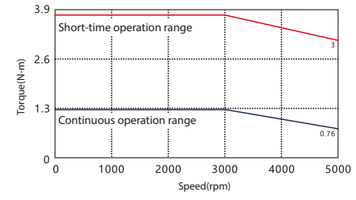
【SMT-H010-H0】



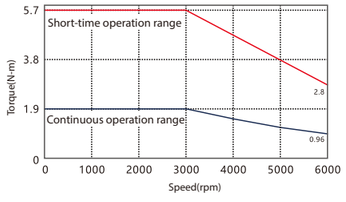
【SMT-H020-H0】



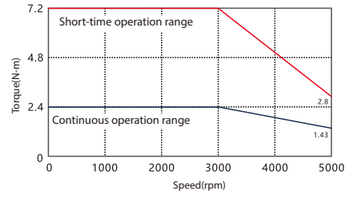
【SMT-H040-H0】



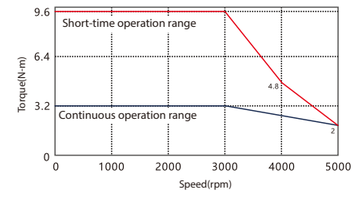
【SMT-H060-H0】



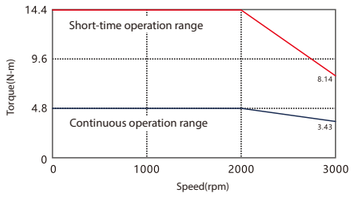
【SMT-H075-H0】



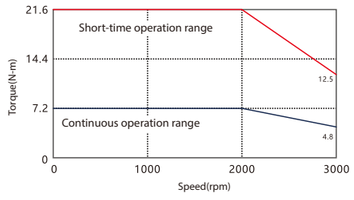
【SMT-H100-H0】



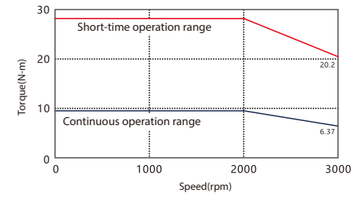
【SMT-M100-H0】



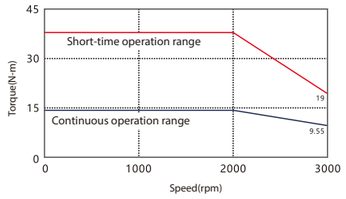
【SMT-M150-H0】



【SMT-M200-H0】



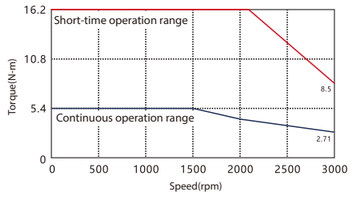
【SMT-M300-H0】



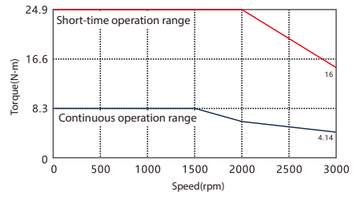
Note For motors with 220V power supply, the torque characteristics will decrease when the voltage is insufficient.

Servo Motor Torque Characteristics Curve

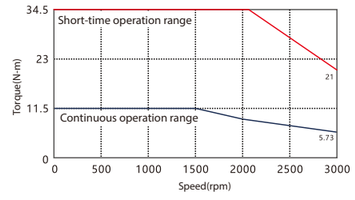
【SMT-H085-W0】(220V)



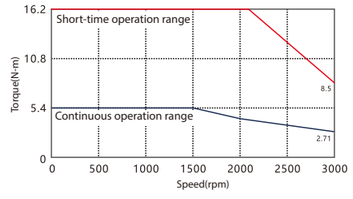
【SMT-H130-W0】(220V)



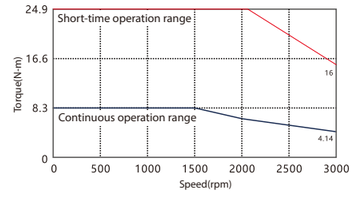
【SMT-H180-W0】(220V)



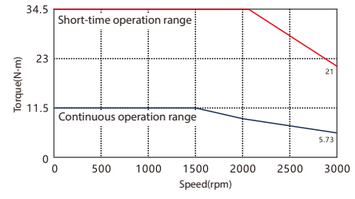
【SMT-H085-W0】(440V)



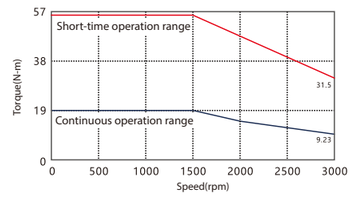
【SMT-H130-W0】(440V)



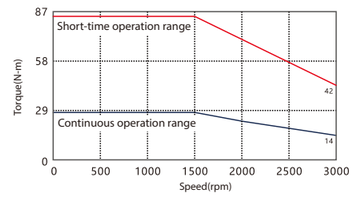
【SMT-H180-W0】(440V)



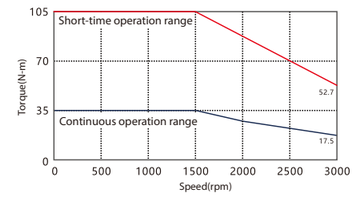
【SMT-H290-W0】(440V)



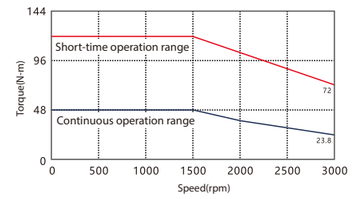
【SMT-H440-W0】(440V)



【SMT-H550-W0】(440V)

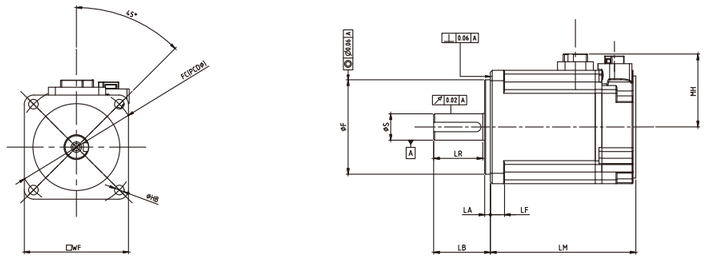


【SMT-H750-W0】(440V)

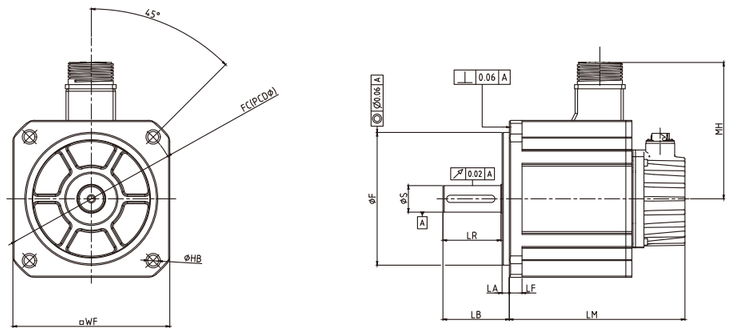


Note For motors with 220V/440V power supply, the torque characteristics will decrease when the voltage is insufficient.

Servo Motor Dimensions Diagram



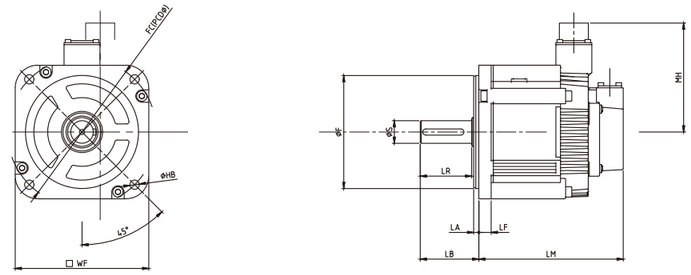
Model	Dimensions(mm)										
	WF	ØS	ØF	LA	LB	LF	LR	MH	LM (Note 1)	FC	HB
SMT-H010-H0	41	$Ø8^{0}_{-0.009}$	$Ø30^{0}_{-0.021}$	3	25±1	6.5	21	28	81.5 (101.5)	46	4-Ø4.3
SMT-H020-H0	60	$Ø14^{0}_{-0.011}$	$Ø50^{0}_{-0.025}$	3	30±1	7.5	26	39	77 (104)	70	4-Ø5.5
SMT-H040-H0									96 (123)		
SMT-H060-H0									114 (141)		
SMT-H075-H0	80	$Ø19^{0}_{-0.013}$	$Ø70^{0}_{-0.03}$	3	35±1	7.5	31.5	49	106 (140)	90	4-Ø7
SMT-H100-H0									120 (154)		



Model	Dimensions(mm)										
	WF	ØS	ØF	LA	LB	LF	LR	MH	LM (Note 1)	FC	HB
SMT-M100-H0	130	$Ø22^{0}_{-0.013}$	$Ø110^{0}_{-0.035}$	6	55±1	10.5	47	113	137 (171)	145	4-Ø9
SMT-M150-H0									145.5 (179.5)		
SMT-M200-H0									170 (204)		
SMT-M300-H0									219.5 (253.5)		

Note ( ) Dimensions in brackets are for the models with electromagnetic brake.

Servo Motor Dimensions Diagram

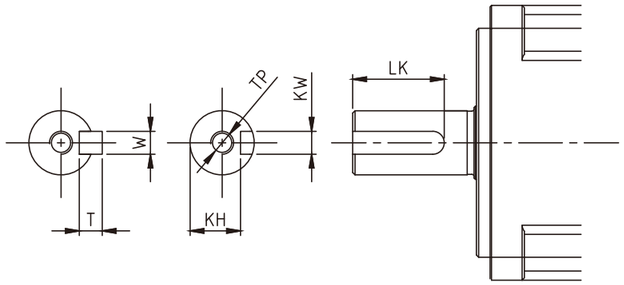


Model	Dimensions(mm)										
	WF	ØS	ØF	LA	LB	LF	LR	MH	LM (Note 1)	FC	HB
SMT-H085-W0	130	$Ø22^{0}_{-0.013}$	$Ø110^{0}_{-0.035}$	5	57±1	12	50	106	140.5 (173.5)	145	4-Ø9
SMT-H130-W0									161.5 (194.5)		
SMT-H180-W0									179.5 (212.5)		
SMT-H290-W0	180	$Ø35^{0}_{-0.016}$	$Ø114.3^{0}_{-0.035}$	3.2	79±1	15	72.8	140	188 (235)	200	4-Ø13.5
SMT-H440-W0									215 (262)		
SMT-H550-W0		$Ø42^{0}_{-0.016}$			113±1		106.8		243 (290)		
SMT-H750-W0									267 (314)		

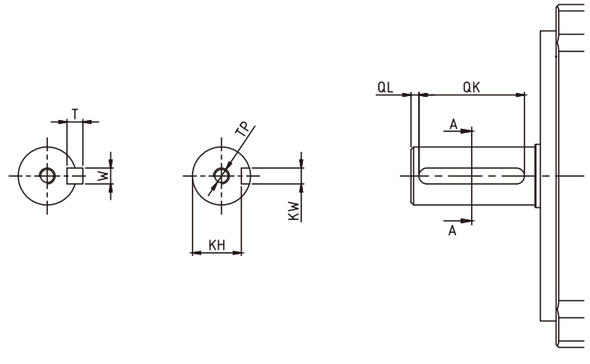
Note ( ) Dimensions in brackets are for the models with electromagnetic brake.

Keyway Dimensions

General Keyway



Model	Dimensions(mm)					
	W	T	KW	KH	LK	TP
SMT-H010-H0	$3^{0}_{-0.018}$	$3^{0}_{-0.018}$	$3^{0}_{-0.02}$	$6.2^{0}_{-0.1}$	19.5±0.5	Screw:M3,Depth:8
SMT-H020-H0	$5^{0}_{-0.018}$	$5^{0}_{-0.018}$	$5^{0}_{-0.02}$	$11^{0}_{-0.1}$	25±0.5	Screw:M5, Depth:10
SMT-H040-H0						
SMT-H060-H0						
SMT-H075-H0	$6^{0}_{-0.018}$	$6^{0}_{-0.018}$	$6^{0}_{-0.02}$	$15.5^{0}_{-0.1}$	25±0.5	Screw:M5, Depth:10
SMT-H100-H0						
SMT-H130-W0	$8^{0}_{-0.22}$	$7^{0}_{-0.09}$	$8^{0}_{-0.22}$	$18^{0}_{-0.21}$	35	Screw:M6, Depth:20
SMT-H180-W0						
SMT-H290-W0	$10^{0}_{-0.036}$	$8^{0}_{-0.036}$	$10^{0}_{-0.036}$	$30^{0}_{-0.21}$	65	Screw:M12, Depth:25
SMT-H440-W0						
SMT-H550-W0	$12^{0}_{-0.036}$	$8^{0}_{-0.036}$	$12^{0}_{-0.036}$	$37^{0}_{-0.21}$	95	Screw:M16, Depth:32
SMT-H750-W0						



Model	Dimensions(mm)						
	W	T	KW	KH	QL	QK	TP
SMT-M100-H0	$6^{0}_{-0.03}$	$6^{0}_{-0.03}$	$6^{0}_{-0.03}$	$18.5^{0}_{-0.1}$	3	40	Screw:M6, Depth:20
SMT-M150-H0							
SMT-M200-H0							
SMT-M300-H0							
SMT-H085-W0	$6^{0}_{-0.03}$	$6^{0}_{-0.03}$	$6^{0}_{-0.03}$	$18.5^{0}_{-0.21}$	2.5	40	Screw:M6, Depth:20

Accessories

Item	Applicable Model Capacity	Part Number	Applicable Motor Series
Encoder Connector (CN2)	High Inertia (100W~1kW, 80 Flange and below) (Lead direction front or rear determined during welding assembly)	SMTH-EN	SMT-H0
	Medium/High Inertia 850W~7.5kW	SDP-ENM	SMT-H0/SMT-W0
Motor Power Connector	High Inertia 100W~1kW	SMTH -PWF SMTH-PWFB (With Brake)	SMT-H0
	Medium Inertia 1kW~3kW	SMTM-PWB (With Brake / Without Brake) (Can replace SDP-PWCNH1)	
	High Inertia 850W~1.8kW	SDP-PWCNH1	SMT-W0
	High Inertia 2.9kW~7.5kW	SDP-PWCNH2	
Brake Power Connector	High Inertia 850W~7.5kW	SDP-BKCNS1	SMT-W0
Brake Power Cable	High Inertia 850W~7.5kW	SDP-BKCNS1-□M-L	
Encoder Cable(CN2)	High Inertia 100W~1kW (Front Lead)	SMTH-ENFS-□M-L/H (Incremental) SMTH-ENFM-□M-L/H (Absolute)	SMT-H0
	High Inertia 100W~1kW (Rear Lead)	SMTH-ENRS-□M-L/H (Incremental) SMTH-ENRM-□M-L/H (Absolute)	
	Medium/High Inertia 850W~7.5kW	SDP-ENM-□M-L/H	SMT-H0/SMT-W0
Motor Power Cable	High Inertia (100W~1kW,80 Flange and below) (Front Lead)	SMTH-PWF-□M-L/H SMTH-PWFB-□M-L/H (With Brake)	SMT-H0
	Medium Inertia (1~3kW)(Front Lead)	SMTM-PWB-□M-L/H (With Brake)	
	Medium Inertia 1kW~3kW High Inertia 850W~1.8kW	SDP-PWCNH1-□M-L/H	SMT-H0/SMT-W0
	High Inertia 2.9kW~7.5kW	SDP-PWCNH2-□M-L/H	SMT-W0
I/O Connector(CN1)	I/O Connector Terminal	SDA-CN1	--
		SDCE-CN1 (For SDC-E)	--
Battery Set(CN5)	Absolute Encoder Battery Set	SDH-BAT-SET	--

Notes: 1.□ Indicates the cable length.Standard: 3M, 5M, 10M; Other lengths are made-to-order.
2.L/H Indicates the flexibility characteristics of the wire. L:Standard, H: High flexibility