



Automation for a Changing World

Delta AC Servo System ASDA-A2 Series



www.delta.com.tw/ia



More Rapid, More Stable, More Precise

Delta Electronics, Inc., a leading manufacturer of industrial automation products, is pleased to announce the launch of its new high-performance ASDA-A2 series servo motors and servo drives with motion control.

The current trend for motion control has the control command source close to the drive. In response, Delta has developed the new ASDA-A2 series that offers excellent motion control so that the external controller is almost eliminated. ASDA-A2 series features a built-in electronic cam (E-Cam) function which provides an excellent solution for flying shear, rotary cut and synchronized motion applications. The all new position register control PR mode is a unique and significant function that provides a variety of control modes to enhance system performance.

The advanced CANopen interface for high-speed communication enables the drive to integrate with other parts of the automation more efficiently and effectively. The full-closed control, auto notch filter, vibration suppression and gantry control functions help to perform complex motions that require high precision and smooth operation.

The 20-bit superior resolution encoder which is essential for accurate positioning applications is equipped as standard. In addition, the outstanding Capture and Compare functions for high-speed pulses offer the best support for stepless positioning. Other additional functionality, such as up to 1kHz frequency response, innovative editing software, high-speed PC monitoring (similar to a digital oscilloscope), and more, all drastically maximize the performance of the ASDA-A2 series.

Delta's new ASDA-A2 series is the ultimate servo system providing a total solution for a wide range of machine tools and industrial applications





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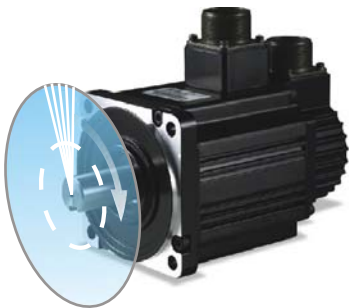
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ASDA-A2 Series Features

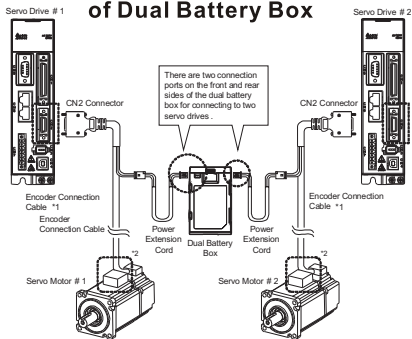
High Positioning Accuracy

- ECMA series servo motors feature incremental encoders with 20-bit resolution (1280000 p/rev) which can eliminate unstable commands at low speed, smooth motor operation and enhance the accuracy of positioning.
- Absolute encoder supported. 17-bit motor position will not get lost when power is cut off.



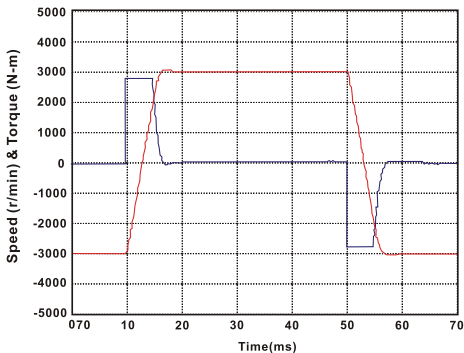
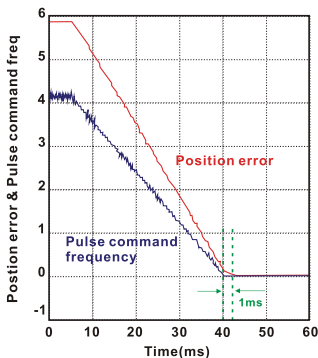
1280000 p/rev(Incremental)

Connection Example of Dual Battery Box



High Responsiveness

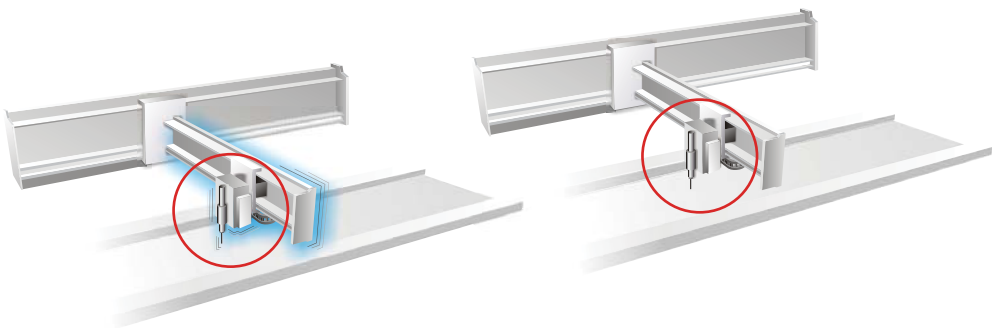
- Up to 1kHz frequency response.
 - Settling time below 1ms.
 - 7ms acceleration time for speeds from -3000r/min to 3000r/min with an empty load!
- (Note: The test record of a 400W motor with 60mm frame size)



Excellent Suppression Functions

■ **Vibration Suppression (Low Frequency)**

Two vibration suppression filters are provided for long arm system to minimize the vibration at machine edges effectively.

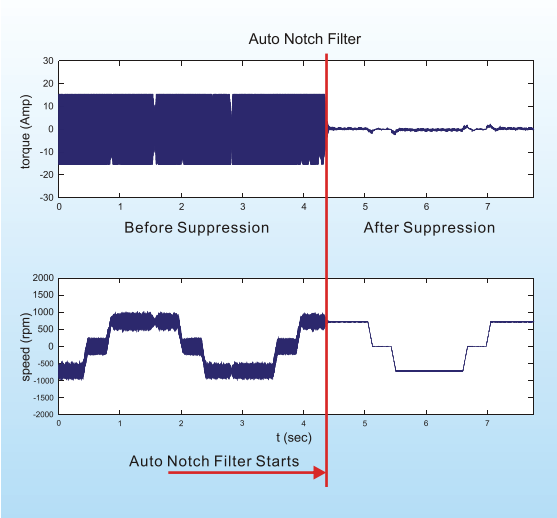


**Without Suppression
Function When Settling**

**With Suppression
Function When Settling**

■ **Resonance Suppression
(High Frequency)**

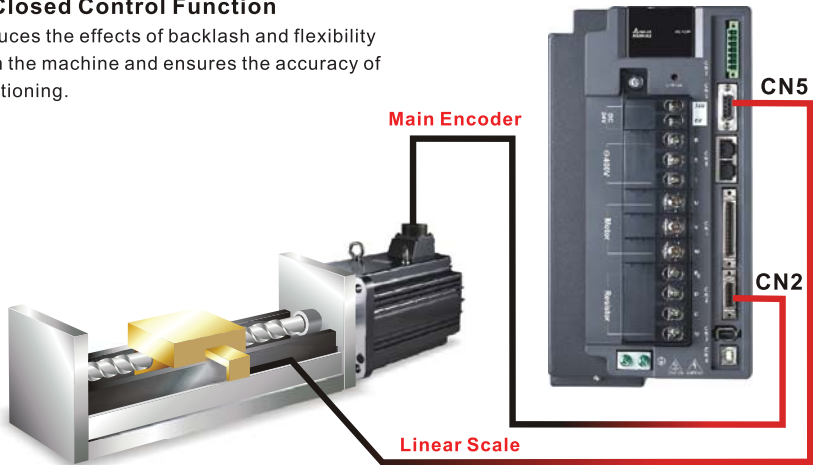
Two auto notch filters and one manual notch filter are provided to suppress mechanical resonance efficiently.



ASDA-A2 Series Features

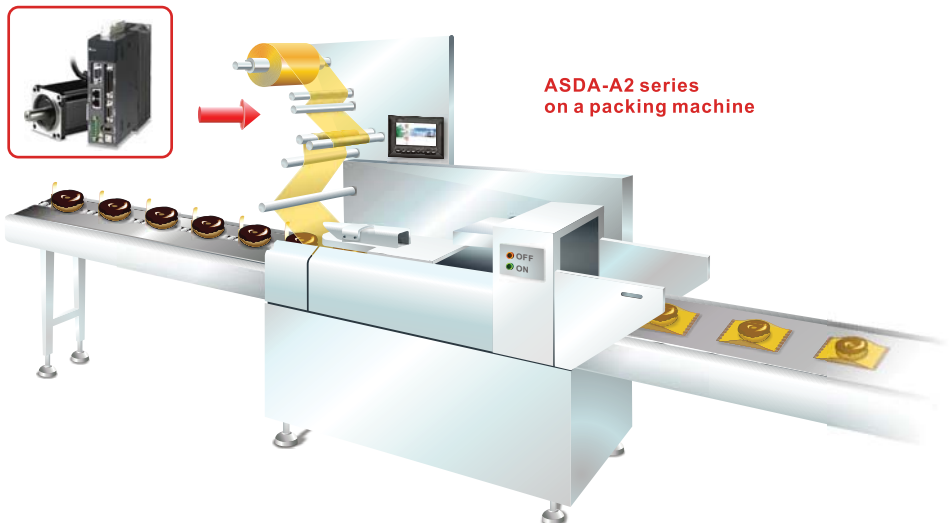
Full-Closed Control Function

- Reduces the effects of backlash and flexibility from the machine and ensures the accuracy of positioning.



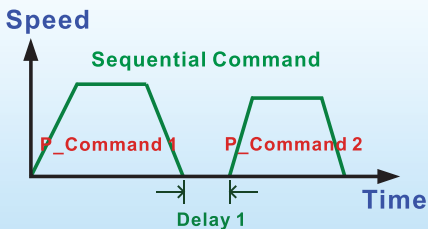
Electronic Cam (E-Cam) Function

- 720 points max. for E-Cam outline.
- Smooth interpolation between points can be completed automatically to yield a flexible programming.
- ASDA-Soft configuration software supported.
- Easy to use for flying shear, rotary cut, and other cam applications.

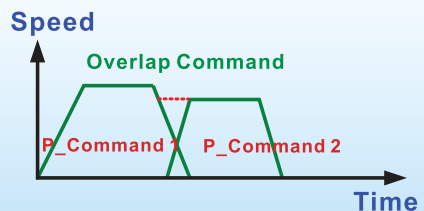


Versatile PR Mode

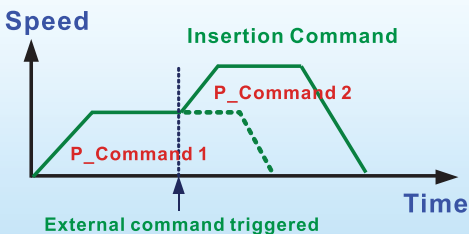
- ASDA-Soft configuration software supported.
- New sub-modes supported, not traditional point-to-point control.
- 64 procedures can be applied.
- Motion profile can be changed instantaneously.
- 35 Homing modes / Jump mode / Write parameter mode / Constant speed mode / Position control mode supported.



A command is executed only when the previous command is completed.



The second command is executed after the delay time or during the deceleration period.



Insertion changes the command executed at the moment it is inserted.



ASDA-A2 Series Features

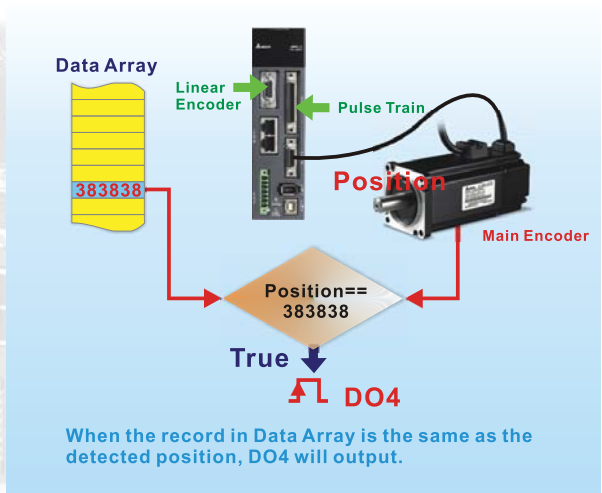
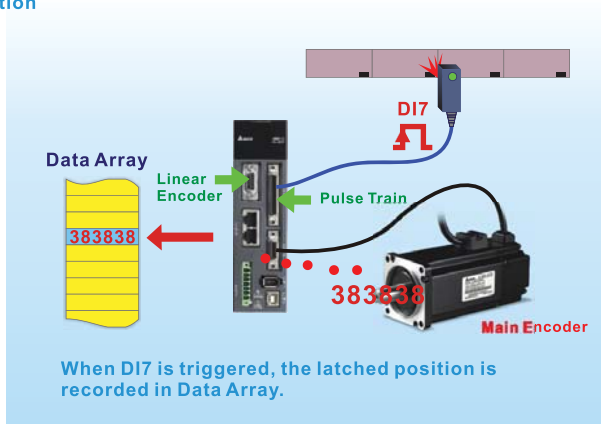
Capture and Compare Functions

Capture - Position Latch Function

- Latches the coordinate value on the reference axis.
- Response time is less than 5us.
- It can be used to do mark tracing.
- Maximum 800 records

Compare - Position Detection Function

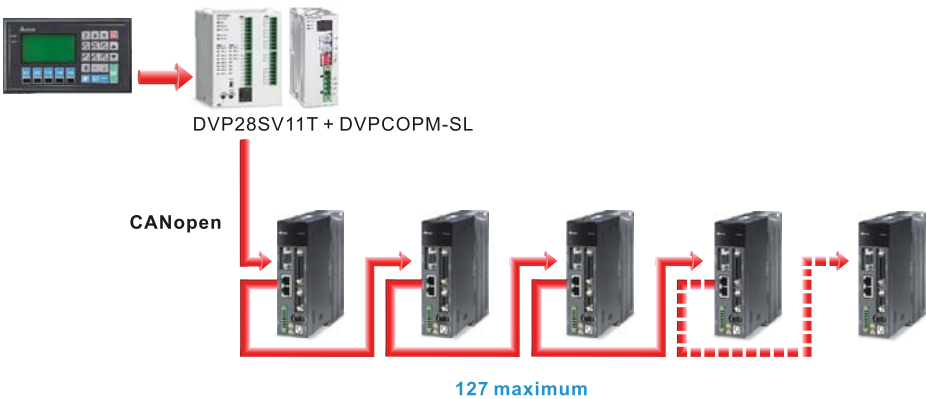
- Detects the location on the reference axis.
- Response time is less than 5us.
- It can be used for CCD camera applications.
- Maximum 800 records



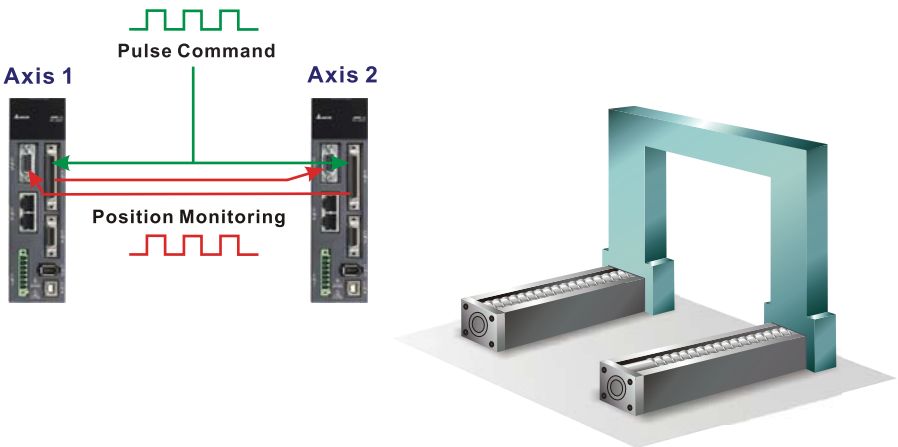
Supports CANopen Protocol

- Up to 1Mbps Communication rate.
- Supports DS301 and DS402 standard.
- With the aid of Delta's PLC, it can save on wiring and establish a Delta fieldbus system configuration.
- Capable of reading and writing servo drive parameters in any mode through CANopen communication.

Delta High-speed Communication Network



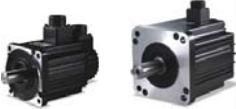
Integrated Gantry Control



Product Line-up

220V Series

Servo Drives								
	100W	0.2kW	0.4kW	0.75kW	1.0kW	1.5kW	2kW	3kW
	ASD-A2-0121-□	ASD-A2-0221-□	ASD-A2-0421-□	ASD-A2-0721-□	ASD-A2-1021-□	ASD-A2-1521-□	ASD-A2-2023-□	ASD-A2-3023-□

Servo Motors								
	ECMA-C10401□S	ECMA-C10602□S	ECMA-C10604□S ECMA-C10804□S ECMA-E11305□S ECMA-G11303□S	ECMA-C10807□S ECMA-G11306□S ECMA-C10907□S	ECMA-C11010□S ECMA-E11310□S ECMA-G11309□S ECMA-C10910□S	ECMA-E11315□S	ECMA-C11020□S ECMA-E11320□S ECMA-E11820□S	ECMA-E11830□S ECMA-F11830□S

		
4.5kW	5.5kW	7.5kW
ASD-A2-4523-□	ASD-A2-5523-□	ASD-A2-7523-□

		
ECMA-F11845□S	ECMA-F11855□3	ECMA-F11875□3

1. The boxes (□) at the ends of the servo drive model names are for optional configurations.
For the actual model name, please refer to the model explanation of the servo drive.
2. The boxes (□) in the servo motor model names are for optional configurations (keyway, brake and oil seal).

Product Line-up

220V Series

Servo Drives		
	11kW	15kW
	ASD-A2-1B23-□	ASD-A2-1F23-□

Servo Motors		
	ECMA-F1221B□3	ECMA-F1221F□S

1. The boxes (□) at the ends of the servo drive model names are for optional configurations.
For the actual model name, please refer to the model explanation of the servo drive.

2. The boxes (□) in the servo motor model names are for optional configurations (keyway, brake and oil seal).

Product Line-up

400V Series

Servo Drives						
	750W	1000W	1500W	2000W	3000W	4500W
	ASD-A2-0743-□	ASD-A2-1043-□	ASD-A2-1543-□	ASD-A2-2043-□	ASD-A2-3043-□	ASD-A2-5543-□

Servo Motors	  			   		
	ECMA-J10807□S	ECMA-K11310□S	ECMA-K11315□S	ECMA-K11320□S	ECMA-L11830□S	ECMA-L11845□S

1. The boxes (□) at the ends of the servo drive model names are for optional configurations.
 For the actual model name, please refer to the model explanation of the servo drive.
 2. The boxes (□) in the servo motor model names are for optional configurations (keyway, brake and oil seal).

Product Line-up

400V Series

Servo Drives			
	7.5kW	11kW	15kW
	ASD-A2-7543-□	ASD-A2-1B43-□	ASD-A2-1F43-□

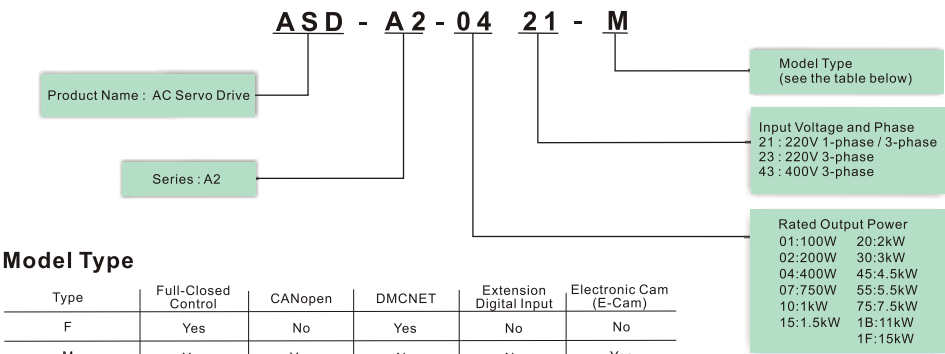
Servo Motors			
	ECMA-L11875□3	ECMA-L1221B□3	ECMA-L1221F□S

1. The boxes (□) at the ends of the servo drive model names are for optional configurations.
For the actual model name, please refer to the model explanation of the servo drive.

2. The boxes (□) in the servo motor model names are for optional configurations (keyway, brake and oil seal).

Model Explanation

ASDA-A2 Series Servo Drives

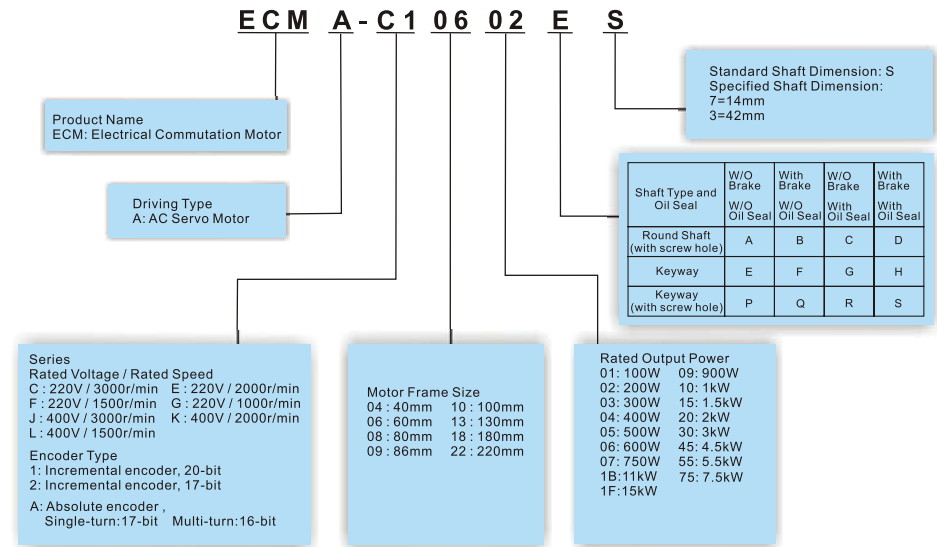


Model Type

F: For DMCNET
M: Support CANopen

U: Without CANopen
L: Without E-Cam

ECMA Series Servo Motors



Servo Motor Features

ECMA series servo motors are permanent AC servo motors, capable of combining with 200 to 230V ASDA-A2 220V series AC servo drives from 100W to 15kW and 380V to 480V ASDA-A2 400V series AC servo drives from 750W to 15kW.

For the 220V series, there are 40mm, 60mm, 80mm, 86mm, 100mm, 130mm, 180mm and 220mm eight kinds of frame sizes available. The motor speed is from 1000 r/min to 5000 r/min and the torque output is from 1.92 N-m to 224 N-m.

For the 400V series, there are 80mm, 130mm, 180mm and 220mm three kinds of frame sizes available. The motor speed is from 1500 r/min to 5000 r/min and the torque output is from 2.39 N-m to 224 N-m. In terms of optional configurations, ECMA series provides brake and oil seal to fully support our customers' needs. It also offers two different shaft selections, round shaft and keyway, for various applications.



Servo Motor Specifications

- Low Inertia Series(Incremental)

220V Series

ECMA Series	C104	C106		C108		C109		C110	
	01	02	04	04	07	07	10	10	20
Rated output power (kW)	0.1	0.2	0.4	0.4	0.75	0.75	1.0	1.0	2.0
Rated torque (N-m) ^{*1}	0.32	0.64	1.27	1.27	2.39	2.39	3.18	3.18	6.37
Maximum torque (N-m)	0.96	1.92	3.82	3.82	7.16	7.14	8.78	9.54	19.11
Rated speed (r/min)	3000					3000		3000	
Maximum speed (r/min)	5000					3000		5000	
Rated current (A)	0.90	1.55	2.6	2.6	5.1	3.66	4.25	7.3	12.05
Maximum current (A)	2.70	4.65	7.8	7.24	15.3	11	12.37	21.9	36.15
Power rating (kW/s)	27.7	22.4	57.6	22.1	48.4	29.6	38.6	38.1	90.6
Rotor moment of inertia (x10 ⁻³ kg-m ²)	0.037	0.177	0.277	0.68	1.13	1.93	2.62	2.65	4.45
Mechanical time constant (ms)	0.75	0.80	0.53	0.73	0.62	1.72	1.20	0.74	0.61
Torque constant-KT (N-m/A)	0.36	0.41	0.49	0.49	0.47	0.65	0.75	0.44	0.53
Voltage constant-KE (mV/(r/min))	13.6	16	17.4	18.5	17.2	27.5	24.2	16.8	19.2
Armature resistance (Ohm)	9.30	2.79	1.55	0.93	0.42	1.34	0.897	0.20	0.13
Armature inductance (mH)	24.0	12.07	6.71	7.39	3.53	7.55	5.7	1.81	1.50
Electrical time constant (ms)	2.58	4.3	4.3	7.96	8.36	5.66	6.35	9.3	11.4
Insulation class	Class A (UL), Class B (CE)								
Insulation resistance	100MΩ, DC 500V								
Insulation strength	AC 1500 V, 60 seconds								
Weight (kg) (without brake)	0.5	1.2	1.6	2.1	3.0	2.9	3.8	4.3	6.2
Weight (kg) (with brake)	0.8	1.5	2.0	2.9	3.8	3.69	5.5	4.7	7.2
Max. radial shaft load (N)	78.4	196	196	245	245	245	245	490	490
Max. thrust shaft load (N)	39.2	68	68	98	98	98	98	98	98
Power rating (kW/s) (with brake)	25.6	21.3	53.8	22.1	48.4	29.3	37.9	30.4	82
Rotor moment of inertia (x10 ⁻³ kg-m ²) (with brake)	0.04	0.192	0.30	0.73	1.18	1.95	2.67	3.33	4.95
Mechanical time constant (ms) (with brake)	0.81	0.85	0.57	0.78	0.65	1.74	1.22	0.93	0.66
Brake holding torque [Nt-m (min)]	0.3	1.3	1.3	2.5	2.5	2.5	2.5	8	8
Brake power consumption (at 20°C) [W]	7.2	6.5	6.5	8.2	8.2	8.2	8.2	18.5	18.5
Brake release time [ms (Max)]	5	10	10	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	25	70	70	70	70	70	70	70	70
Vibration grade (μm)	15								
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)								
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)								
Operating humidity	20 to 90%RH (non-condensing)								
Storage humidity	20 to 90%RH (non-condensing)								
Vibration capacity	2.5G								
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))								
Approvals	 								

Footnote:

*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-__04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-__10 : 300mm x 300mm x 12mm

ECMA-__13 : 400mm x 400mm x 20mm

ECMA-__18 : 550mm x 550mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180

Servo Motor Specifications

- Medium / High Inertia Series (Incremental)

220V Series

Model: ECMA Series	E113			
	05	10	15	20
Rated output power (kW)	0.5	1.0	1.5	2.0
Rated torque (N-m) ^{*1}	2.39	4.77	7.16	9.55
Maximum torque (N-m)	7.16	14.32	21.48	28.65
Rated speed (r/min)	2000			
Maximum speed (r/min)	3000			
Rated current (A)	2.9	5.6	8.3	11.01
Maximum current (A)	8.7	16.8	24.81	33
Power rating (kW/s)	7.0	27.1	45.9	62.5
Rotor moment of inertia (x10 ⁻⁴ kg-m ²) (without brake)	8.17	8.41	11.18	14.59
Mechanical time constant (ms)	1.91	1.51	1.11	0.96
Torque constant-KT (N-m/A)	0.83	0.85	0.87	0.87
Voltage constant-KE (mV/(r/min))	30.9	31.9	31.8	31.8
Armature resistance (Ohm)	0.57	0.47	0.26	0.174
Armature inductance (mH)	7.39	5.99	4.01	2.76
Electrical time constant (ms)	12.96	12.88	15.31	15.86
Insulation class	Class A (UL), Class B (CE)			
Insulation resistance	100MΩ , DC 500V			
Insulation strength	AC 1500 V, 60 seconds			
Weight (kg) (without brake)	6.8	7	7.5	7.8
Weight (kg) (with brake)	8.2	8.4	8.9	9.2
Max. radial shaft load (N)	490	490	490	490
Max. thrust shaft load (N)	98	98	98	98
Power rating (kW/s) (with brake)	6.4	24.9	43.1	59.7
Rotor moment of inertia (x10 ⁻⁴ kg-m ²) (with brake)	8.94	9.14	11.90	15.88
Mechanical time constant (ms) (with brake)	2.07	1.64	1.19	1.05
Brake holding torque [Nt-m (min)]	10.0	10.0	10.0	10.0
Brake power consumption (at 20°C) [W]	19.0	19.0	19.0	19.0
Brake release time [ms (Max)]	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70
Vibration grade (μm)	15			
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)			
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)			
Operating humidity	20 to 90%RH (non-condensing)			
Storage humidity	20 to 90%RH (non-condensing)			
Vibration capacity	2.5G			
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))			
Approvals	 			

Footnote:

*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-__04 / 06/ 08 : 250mm x 250mm x 6mm

ECMA-__10 : 300mm x 300mm x 12mm

ECMA-__13 : 400mm x 400mm x 20mm

ECMA-__18 : 550mm x 550mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180

Servo Motor Specifications

- Medium / High Inertia Series (Incremental)

220V Series

Model: ECMA Series	E118		G113		
	20	30	03	06	09
Rated output power (kW)	2.0	3.0	0.3	0.6	0.9
Rated torque (N·m) ^{*1}	9.55	14.32	2.86	5.73	8.59
Maximum torque (N·m)	28.65	42.97	8.59	17.19	21.48
Rated speed (r/min)	2000		1000		
Maximum speed (r/min)	3000		2000		
Rated current (A)	11.22	16.1	2.5	4.8	7.5
Maximum current (A)	33.66	48.3	7.44	14.49	22.5
Power rating (kW/s)	26.3	37.3	10.0	39.0	66.0
Rotor moment of inertia (x10 ⁻⁴ kg·m ²) (without brake)	34.68	54.95	8.17	8.41	11.18
Mechanical time constant (ms)	1.62	1.06	1.84	1.40	1.07
Torque constant-KT (N·m/A)	0.85	0.89	1.15	1.19	1.15
Voltage constant-KE (mV/(r/min))	31.4	32	42.5	43.8	41.6
Armature resistance (Ohm)	0.119	0.052	1.06	0.82	0.43
Armature inductance (mH)	2.84	1.38	14.29	11.12	6.97
Electrical time constant (ms)	23.87	26.39	13.55	13.55	16.06
Insulation class	Class A (UL), Class B (CE)				
Insulation resistance	100MΩ, DC 500V				
Insulation strength	AC 1500 V, 60 seconds				
Weight (kg) (without brake)	13.5	18.5	6.8	7	7.5
Weight (kg) (with brake)	17.5	22.5	8.2	8.4	8.9
Max. radial shaft load (N)	1176	1470	490	490	490
Max. thrust shaft load (N)	490	490	98	98	98
Power rating (kW/s) (with brake)	24.1	35.9	9.2	35.9	62.1
Rotor moment of inertia (x10 ⁻⁴ kg·m ²) (with brake)	37.86	57.06	8.94	9.14	11.9
Mechanical time constant (ms) (with brake)	1.77	1.10	2.0	1.51	1.13
Brake holding torque [N·m (min)]	25.0	25.0	10.0	10.0	10.0
Brake power consumption (at 20°C) [W]	20.4	20.4	19.0	19.0	19.0
Brake release time [ms (Max)]	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70
Vibration grade (μm)	15				
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)				
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)				
Operating humidity	20 to 90%RH (non-condensing)				
Storage humidity	20 to 90%RH (non-condensing)				
Vibration capacity	2.5G				
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))				
Approvals	 				

Footnote:

*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-__04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-__10 : 300mm x 300mm x 12mm

ECMA-__13 : 400mm x 400mm x 20mm

ECMA-__18 : 550mm x 550mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180

Servo Motor Specifications

- Medium / Medium-High Inertia Series (Incremental)

220V Series

Model: ECMA Series	F118				F122	
	30	45	55	75	1B	1F
Rated output power (kW)	3.0	4.5	5.5	7.5	11	15
Rated torque (N-m) ^{*1}	19.10	28.65	35.01	47.74	70	95.4
Maximum torque (N-m)	57.29	71.62	87.53	119.36	175	224.0
Rated speed (r/min)	1500					
Maximum speed (r/min)	3000				2000	
Rated current (A)	19.4	32.5	40.0	47.5	51.8	61.5
Maximum current (A)	58.2	81.3	100.0	118.8	129.5	145.7
Power rating (kW/s)	66.4	105.5	122.9	159.7	148.9	164.6
Rotor moment of inertia (x10 ⁻³ kg-m ²) (without brake)	54.95	77.75	99.78	142.7	329	553
Mechanical time constant (ms)	1.28	0.92	0.96	0.63	1.36	1.23
Torque constant-KT (N-m/A)	0.98	0.88	0.88	1.01	1.35	1.55
Voltage constant-KE (mV/(r/min))	35.0	32.0	31.0	35.5	49	55.65
Armature resistance (Ohm)	0.077	0.032	0.025	0.015	0.026	0.018
Armature inductance (mH)	1.27	0.89	0.60	0.40	0.64	0.45
Electrical time constant (ms)	16.5	27.8	24.0	26.7	24.77	24.51
Insulation class	Class A (UL), Class B (CE)					
Insulation resistance	100MΩ, DC 500V					
Insulation strength	AC 1500 V, 60 seconds					
Weight (kg) (without brake)	18.5	23.5	30.5	37.0	56.4	86.4
Weight (kg) (with brake)	22.5	29	36	46	-	-
Max. radial shaft load (N)	1470	1470	1764	1764	3300	3300
Max. thrust shaft load (N)	490	490	588	588	1100	1100
Power rating (kW/s) (with brake)	63.9	101.8	119.4	156.6	-	-
Rotor moment of inertia (x10 ⁻³ kg-m ²) (with brake)	57.06	80.65	102.70	145.55	-	-
Mechanical time constant (ms) (with brake)	1.33	0.96	0.99	0.64	-	-
Brake holding torque [Nt-m (min)]	25.0	25.0	25.0	25.0	115	115
Brake power consumption (at 20°C) [W]	20.4	20.4	20.4	20.4	28.8	28.8
Brake release time [ms (Max)]	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70	70
Vibration grade (μm)	15					
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)					
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)					
Operating humidity	20 to 90%RH (non-condensing)					
Storage humidity	20 to 90%RH (non-condensing)					
Vibration capacity	2.5G					
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))					
Approvals	 					

Footnote:

*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-__04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-__10 : 300mm x 300mm x 12mm

ECMA-__13 : 400mm x 400mm x 20mm

ECMA-__18 : 550mm x 550mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180

Servo Motor Specifications

- Medium / Low Inertia Series (Incremental)

400V Series

Model: ECMA Series	J108	K113		
	07	10	15	20
Rated output power (kW)	0.75	1.0	1.5	2.0
Rated torque (N-m) ^{*1}	2.39	4.77	7.16	9.55
Maximum torque (N-m)	7.16	14.32	21.48	28.65
Rated speed (r/min)	3000	2000		
Maximum speed (r/min)	5000	3000		
Rated current (A)	3.07	3.52	5.02	6.66
Maximum current (A)	9.5	10.56	15.06	19.98
Power rating (kW/s)	50.4	27.1	45.9	62.5
Rotor moment of inertia (x10 ⁻⁴ kg-m ²) (without brake)	1.13	8.41	11.18	14.59
Mechanical time constant (ms)	0.66	1.80	1.24	1.04
Torque constant-KT (N-m/A)	0.78	1.35	1.43	1.43
Voltage constant-KE (mV/(r/min))	28.24	53.2	55	55
Armature resistance (Ohm)	1.22	1.47	0.83	0.57
Armature inductance (mH)	10.68	17.79	11.67	8.29
Electrical time constant (ms)	8.75	12.04	14.04	14.39
Insulation class	---			
Insulation resistance	100MΩ, DC 500V			
Insulation strength	AC 1800 V, 60 seconds			
Weight (kg) (without brake)	3.0	7.0	7.5	7.8
Weight (kg) (with brake)	3.8	8.4	8.9	9.2
Max. radial shaft load (N)	245	490	490	490
Max. thrust shaft load (N)	98	98	98	98
Power rating (kW/s) (with brake)	48.4	24.9	43.1	59.7
Rotor moment of inertia (x10 ⁻⁴ kg-m ²) (with brake)	1.18	9.14	11.90	15.88
Mechanical time constant (ms) (with brake)	0.65	1.96	1.32	1.13
Brake holding torque [Nt-m (min)]	2.5	10.0	10.0	10.0
Brake power consumption (at 20°C) [W]	8.5	19.0	19.0	19.0
Brake release time [ms (Max)]	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70
Vibration grade (μm)	15			
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)			
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)			
Operating humidity	20 to 90%RH (non-condensing)			
Storage humidity	20 to 90%RH (non-condensing)			
Vibration capacity	2.5G			
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))			
Approvals	 			

Footnote:

*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-___08 : 250mm x 250mm x 6mm

ECMA-___13 : 400mm x 400mm x 20mm

ECMA-___18 : 550mm x 550mm x 30mm

Material type : Aluminum F80, F130, F180

Servo Motor Specifications

- Medium / High Inertia Series (Incremental)

400V Series

Model: ECMA Series	L118				L122	
	30	45	55	75	1B	1F
Rated output power (kW)	3.0	4.5	5.5	7.5	11	15
Rated torque (N-m) ^{*1}	19.10	28.65	35.01	47.74	70	95.4
Maximum torque (N-m)	57.29	71.62	87.53	119.36	175	224.0
Rated speed (r/min)	1500					
Maximum speed (r/min)	3000				2000	
Rated current (A)	11.53	20.8	22.37	27.3	30.9	36.7
Maximum current (A)	34.6	52	56	68.3	77.25	86.17
Power rating (kW/s)	66.4	105.5	122.9	159.7	148.9	164.6
Rotor moment of inertia (x10 ⁻⁴ kg-m ²) (without brake)	54.95	77.75	99.78	142.7	329	553
Mechanical time constant (ms)	1.11	0.94	0.88	0.77	1.29	1.06
Torque constant-KT (N-m/A)	1.66	1.38	1.56	1.75	2.27	2.6
Voltage constant-KE (mV/(r/min))	64.4	53	58.9	66.4	87	97
Armature resistance (Ohm)	0.21	0.09	0.07	0.06	0.073	0.046
Armature inductance (mH)	4.94	2.36	2.2	1.7	1.87	1.34
Electrical time constant (ms)	23.97	28.07	27.6	28.29	25.34	29.13
Insulation class	-----				Class A (UL), Class B (CE)	
Insulation resistance	100MΩ , DC 500V					
Insulation strength	AC 1800 V, 50Hz, 60 seconds				AC 1500 V, 50Hz, 60 seconds	
Weight (kg) (without brake)	18.5	23.5	30.5	37.0	56.4	86.4
Weight (kg) (with brake)	22.5	29	36	46	-	-
Max. radial shaft load (N)	1470	1470	1764	1764	3300	3300
Max. thrust shaft load (N)	490	490	588	588	1100	1100
Power rating (kW/s) (with brake)	63.9	101.8	119.4	156.6	-	-
Rotor moment of inertia (x10 ⁻⁴ kg-m ²) (with brake)	57.06	80.65	102.70	145.55	-	-
Mechanical time constant (ms) (with brake)	1.33	0.96	0.99	0.64	-	-
Brake holding torque [Nt-m (min)]	25.0	25.0	25.0	25.0	115	115
Brake power consumption (at 20°C) [W]	20.4	20.4	20.4	20.4	28.8	28.8
Brake release time [ms (Max)]	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70	70
Vibration grade (μ m)	15					
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)					
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)					
Operating humidity	20 to 90%RH (non-condensing)					
Storage humidity	20 to 90%RH (non-condensing)					
Vibration capacity	2.5G					
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))					
Approvals					In the process of application to CE and UL certifications.	

Footnote:

*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-__04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-__10 : 300mm x 300mm x 12mm

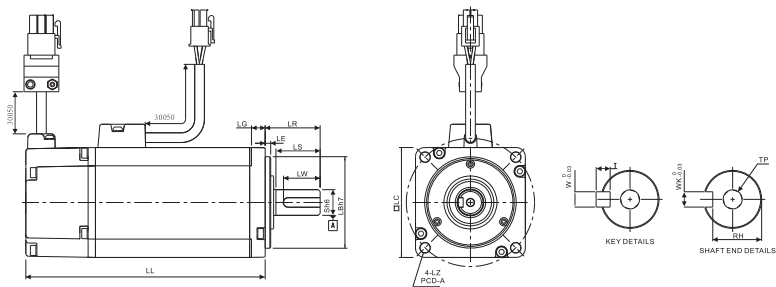
ECMA-__13 : 400mm x 400mm x 20mm

ECMA-__18 : 550mm x 550mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180

Servo Motor Dimensions

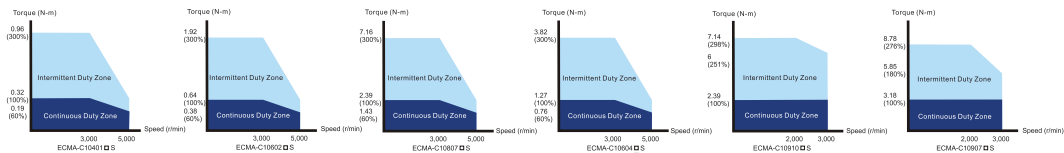
220V Series
Frame Size 86mm and below (Units: mm)



Model	C10401□S	C10602□S	C10604□S	C10804□7	C10807□S	C10907□S	C10910□S
LC	40	60	60	80	80	86	86
LZ	4.5	5.5	5.5	6.6	6.6	6.6	6.6
LA	46	70	70	90	90	100	100
S	8 ^(+0 -0.009)	14 ^(+0 -0.011)	14 ^(+0 -0.011)	14 ^(+0 -0.011)	19 ^(+0 -0.013)	16 ^(+0 -0.011)	16 ^(+0 -0.011)
LB	30 ^(+0 -0.021)	50 ^(+0 -0.025)	50 ^(+0 -0.025)	70 ^(+0 -0.030)	70 ^(+0 -0.030)	80 ^(+0 -0.030)	80 ^(+0 -0.030)
LL (W/O Brake)	100.6	105.5	130.7	112.3	138.3	130.2	153.2
LL (With Brake)	136.6	141.6	166.8	152.8	178	161.3	184.3
LS (W/O Oil Seal)	20	27	27	27	32	30	30
LS (With Oil Seal)	20	24	24	24.5	29.5	30	30
LR	25	30	30	30	35	35	35
LE	2.5	3	3	3	3	3	3
LG	5	7.5	7.5	8	8	8	8
LW	16	20	20	20	25	20	20
RH	6.2	11	11	11	15.5	13	13
WK	3	5	5	5	6	5	5
W	3	5	5	5	6	5	5
T	3	5	5	5	6	5	5
TP	M3 Depth 8	M4 Depth 15	M4 Depth 15	M4 Depth 15	M6 Depth 20	M5 Depth 15	M5 Depth 15

 **NOTE** 1) Dimensions are in millimeters.
2) Dimensions of the servo motors may be revised without prior notice.
3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

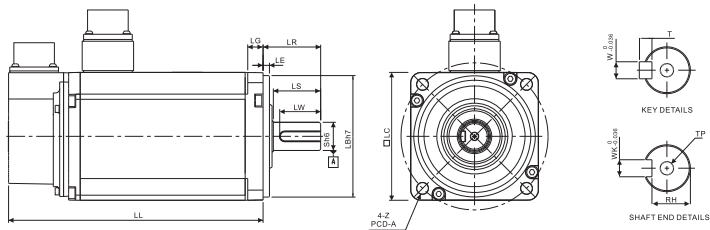
Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

220V Series

Frame Size 100mm and 130mm (Units: mm)



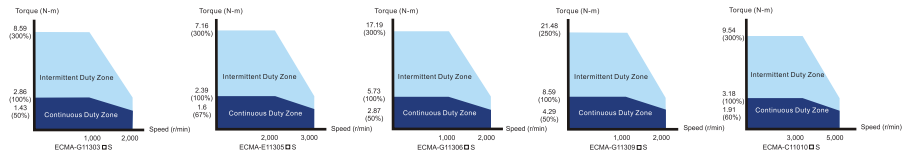
Model	G11303□S	E11305□S	G11306□S	G11309□S	C11010□S
LC	130	130	130	130	100
LZ	9	9	9	9	9
LA	145	145	145	145	115
S	$22^{(+0}_{-0.013)}$	$22^{(+0}_{-0.013)}$	$22^{(+0}_{-0.013)}$	$22^{(+0}_{-0.013)}$	$22^{(+0}_{-0.013)}$
LB	$110^{(+0}_{-0.035)}$	$110^{(+0}_{-0.035)}$	$110^{(+0}_{-0.035)}$	$110^{(+0}_{-0.035)}$	$95^{(+0}_{-0.035)}$
LL (W/O Brake)	147.5	147.5	147.5	163.5	153.3
LL (With Brake)	183.5	183.5	183.5	198	192.5
LS	47	47	47	47	37
LR	55	55	55	55	45
LE	6	6	6	6	5
LG	11.5	11.5	11.5	11.5	12
LW	36	36	36	36	32
RH	18	18	18	18	18
WK	8	8	8	8	8
W	8	8	8	8	8
T	7	7	7	7	7
TP	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20



NOTE

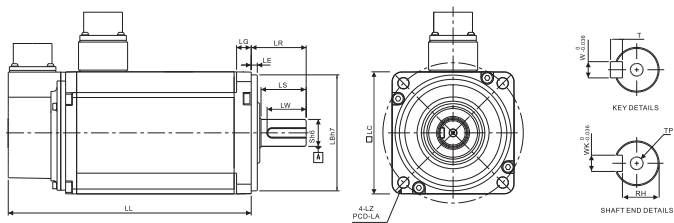
- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

220V Series
Frame Size 100mm and 130mm (Units: mm)



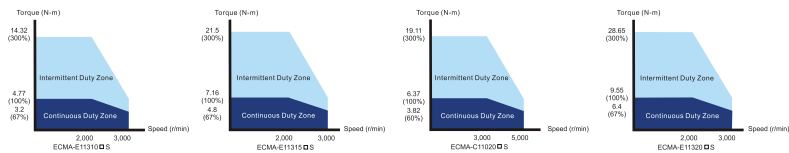
Model	E11310□S	E11315□S	C11020□S	E11320□S
LC	130	130	100	130
LZ	9	9	9	9
LA	145	145	115	145
S	22 (+0 -0.013)	22 (+0 -0.013)	22 (+0 -0.013)	22 (+0 -0.013)
LB	110 (+0 -0.035)	110 (+0 -0.035)	95 (+0 -0.035)	110 (+0 -0.035)
LL (W/O Brake)	147.5	167.5	199	187.5
LL (With Brake)	183.5	202	226	216
LS	47	47	37	47
LR	55	55	45	55
LE	6	6	5	6
LG	11.5	11.5	12	11.5
LW	36	36	32	36
RH	18	18	18	18
WK	8	8	8	8
W	8	8	8	8
T	7	7	7	7
TP	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20



NOTE

- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

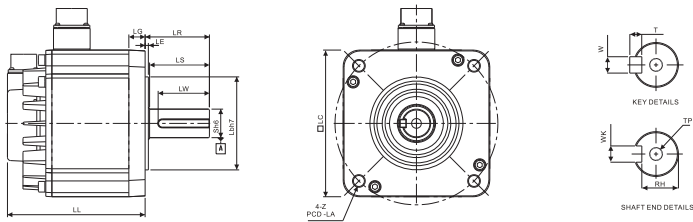
Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

220V Series

Frame Size 180mm (Units: mm)



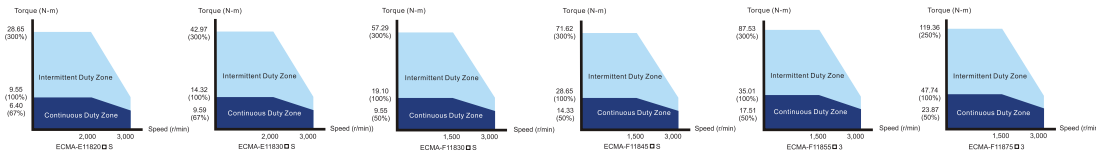
Model	E11820□S	E11830□S	F11830□S	F11845□S	F11855□3	F11875□3
LC	180	180	180	180	180	180
LZ	13.5	13.5	13.5	13.5	13.5	13.5
LA	200	200	200	200	200	200
S	35 ^(+0/-0.016)	35 ^(+0/-0.016)	35 ^(+0/-0.016)	35 ^(+0/-0.016)	42 ^(+0/-0.016)	42 ^(+0/-0.016)
LB	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)
LL (W/O Brake)	169	202.1	202.1	235.3	279.7	342.0
LL (With Brake)	203.1	235.3	235.3	279.3	311.7	376.1
LS	73	73	73	73	108.5	108.5
LR	79	79	79	79	113	113
LE	4	4	4	4	4	4
LG	20	20	20	20	20	20
LW	63	63	63	63	90	90
RH	30	30	30	30	37	37
WK	10 ^{0/-0.036}	10 ^{0/-0.036}	10 ^{0/-0.036}	10 ^{0/-0.036}	12 ^{0/-0.043}	12 ^{0/-0.043}
W	10 ^{0/-0.036}	10 ^{0/-0.036}	10 ^{0/-0.036}	10 ^{0/-0.036}	12 ^{0/-0.043}	12 ^{0/-0.043}
T	8	8	8	8	8	8
TP	M12 Depth 25	M12 Depth 25	M12 Depth 25	M12 Depth 25	M16 Depth 32	M16 Depth 32



NOTE

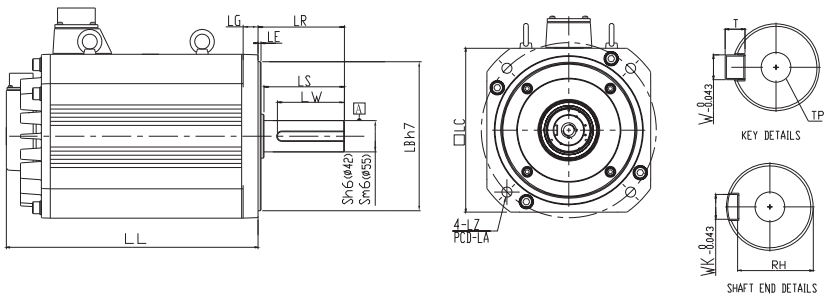
- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes () in the model names are for optional configurations(keyway, brake and oil seal).

Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

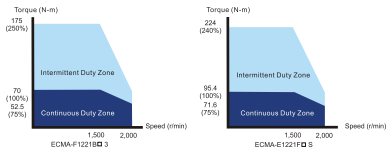
220V Series
 Frame Size 220mm and above (Units: mm)



Model	F1221B□3	F1221F□S
LC	220	220
LZ	13.5	13.5
LA	235	235
S	42 ($\begin{smallmatrix} +0 \\ -0.016 \end{smallmatrix}$)	55 ($\begin{smallmatrix} +0.03 \\ -0.011 \end{smallmatrix}$)
LB	200 ($\begin{smallmatrix} +0 \\ -0.046 \end{smallmatrix}$)	200 ($\begin{smallmatrix} +0 \\ -0.046 \end{smallmatrix}$)
LL (W/O Brake)	338	457
LL (With Brake)	-	-
LS	108	108
LR	116	116
LE	4	4
LG	20	20
LW	90	90
RH	37	49
WK	12	16
W	12	16
T	8	10
TP	M16 Depth 32	M20 Depth 40

- NOTE**
- 1) Dimensions are in millimeters.
 2) Dimensions of the servo motors may be revised without prior notice.
 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

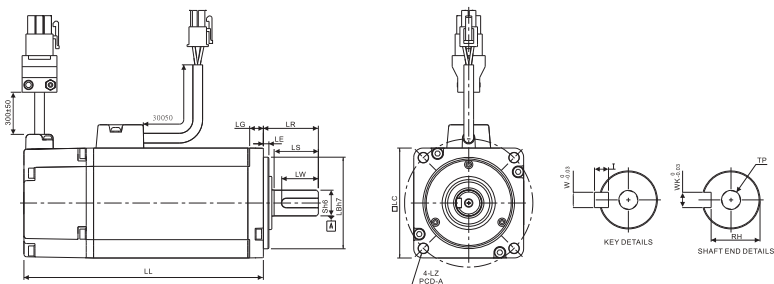
Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

400V Series

Frame Size 80mm and below (Units: mm)



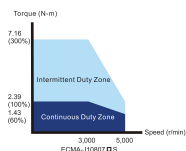
Model	J10807□□S
LC	80
LZ	6.6
LA	90
S	19(⁺⁰ _{-0.013})
LB	70(⁺⁰ _{-0.030})
LL (W/O Brake)	138.3
LL (With Brake)	178
Ls (W/O Oil Seal)	32
Ls (With Oil Seal)	29.5
LR	35
LE	3
LG	8
LW	25
RH	15.5
WK	6
W	6
T	6
TP	M6 Depth 20



NOTE

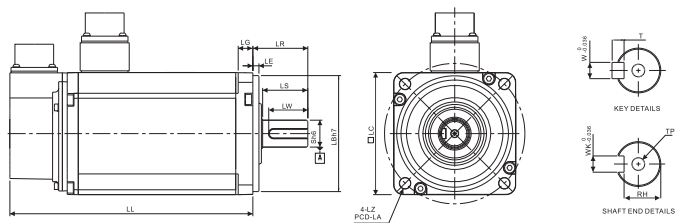
- 1) Dimensions are in millimeters.
2) Dimensions of the servo motors may be revised without prior notice.
3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

400V Series
Frame Size 130mm (Units: mm)



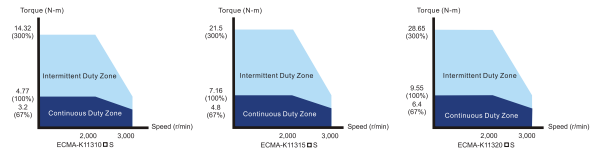
Model	K11310□S	K11315□S	K11320□S
LC	130	130	130
LZ	9	9	9
LA	145	145	145
S	22 (+0/-0.013)	22 (+0/-0.013)	22 (+0/-0.013)
LB	110 (+0/-0.035)	110 (+0/-0.035)	110 (+0/-0.035)
LL (W/O Brake)	147.5	167.5	187.5
LL (With Brake)	183.5	202	216
LS	47	47	47
LR	55	55	55
LE	6	6	6
LG	11.5	11.5	11.5
LW	36	36	36
RH	18	18	18
WK	8	8	8
W	8	8	8
T	7	7	7
TP	M6 Depth 20	M6 Depth 20	M6 Depth 20



NOTE

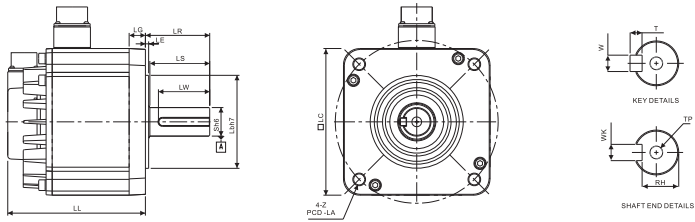
- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

400V Series
Frame Size 180mm and above (Units: mm)

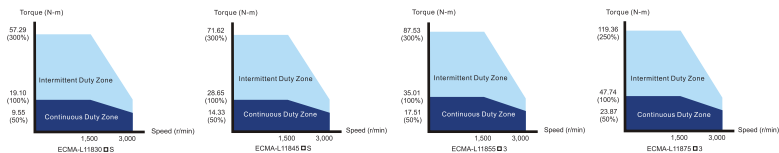


Model	L11830□S	L11845□S	L11855□3	L11875□3
LC	180	180	180	180
LZ	13.5	13.5	13.5	13.5
LA	200	200	200	200
S	35 ^(+0/-0.016)	35 ^(+0/-0.016)	42 ^(+0/-0.016)	42 ^(+0/-0.016)
LB	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)	114.3 ^(+0/-0.035)
LL (W/O Brake)	202.1	235.3	279.7	342.0
LL (With Brake)	235.3	279.3	311.7	376.1
LS	73	73	108.5	108.5
LR	79	79	113	113
LE	4	4	4	4
LG	20	20	20	20
LW	63	63	90	90
RH	30	30	37	37
WK	10 ^{0/-0.036}	10 ^{0/-0.036}	12 ^{0/-0.043}	12 ^{0/-0.043}
W	10 ^{0/-0.036}	10 ^{0/-0.036}	12 ^{0/-0.043}	12 ^{0/-0.043}
T	8	8	8	8
TP	M12 Depth 25	M12 Depth 25	M16 Depth 32	M16 Depth 32



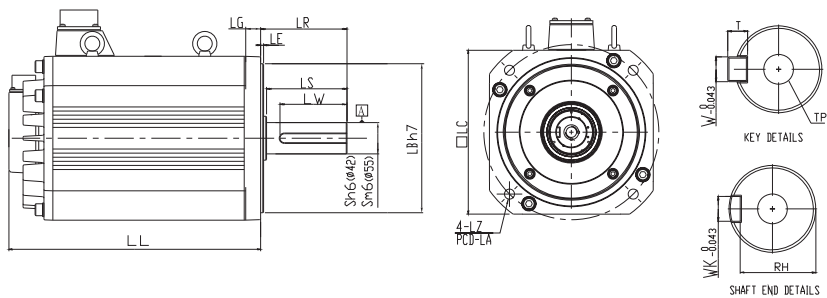
- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

Speed-Torque Curves (T-N Curves)



Servo Motor Dimensions

400V Series
Frame Size 400mm and above (Units: mm)



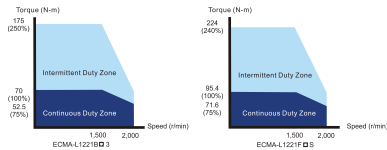
Model	L1221B□3	L1221F□S
LC	220	220
LZ	13.5	13.5
LA	235	235
S	42 ($+0$ -0.016)	55 ($+0.03$ -0.011)
LB	200 ($+0$ -0.046)	200 ($+0$ -0.046)
LL (W/O Brake)	338	457
LL (With Brake)	-	-
LS	108	108
LR	116	116
LE	4	4
LG	20	20
LW	90	90
RH	37	49
WK	12	16
W	12	16
T	8	10
TP	M16 Depth 32	M20 Depth 40



NOTE

- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

Speed-Torque Curves (T-N Curves)



Part Names and Functions

● LED Display / Operation Panel / Charge LED

■ LED Display

The 5 digit, 7 segment LED displays the servo status or fault codes.

■ Operation Panel

Function keys used to perform status display, monitor and diagnostic, function and parameter setting.

Function Keys:

MODE : Press this key to select/ change mode

SHIFT : Press this key to shift cursor to the left

UP : Press this key to increase values on the display

DOWN : Press this key to decrease values on the display

SET : Press this key to store data

■ Charge LED

A lit LED indicates that either power is connected to the servo drive or a residual charge is present in the drive's internal power components.

Operation Panel

Charge LED

LED Display

● *Full-Closed Control Interface

- Used to connect linear scale and encoder for controlling A, B, Z phase signals.

● I/O Interface

- Used to connect Delta's DVP series PLC or other external controllers for controlling I/O signals.

● * High-speed Communication Port

- Used to connect CANopen networks.
- 1-in/1-out communication ports offer easy serial connection.
- CANbus interface, supporting motion modes for CANopen DS402 implementation.

● Motor Encoder Interface

- Used to connect the encoder of the servo motor

● * Extension Digital Input Connection Port

- Used to connect a removable digital input terminal block. Max. 6 digital inputs can be added.

● Serial Communication Port

- Used to connect PLC, HMI, and other controllers for RS-485 / RS-232 serial communication.

● USB Connection Port

- Used to connect personal computers or notebooks.
- Ver 1.1 USB is equipped as standard.
- Direct connectivity to personal computers or notebooks, capable of accessing data through ASDA-Soft configuration software.
- Monitor speed upon software is up to 1Mbps.



- Internal & External Regenerative Resistor Terminal / Control Circuit Terminal / Main Circuit Terminal

- Internal & External Regenerative Resistor Terminal

1. When using an external resistor, connect it to P $\oplus$ and C $\ominus$, and ensure an open circuit between P $\oplus$ and D.
2. When using an internal resistor, ensure the circuit is closed between P $\oplus$ and D, and the circuit is open between P $\oplus$ and C. (Note: Please refer to the table of regenerative resistor specifications for the models with a built-in regenerative resistor.)

3. When using an external braking unit, connect it to P $\oplus$ and $\ominus$, and ensure an open circuit between P $\oplus$ and D, and P $\oplus$ and C

- Control Circuit Terminal (L1C, L2C or DC24V, DC0V)

220V Series: L1C, L2C are used to connect 200~230Vac, 50/60Hz single-phase or three-phase power supply.

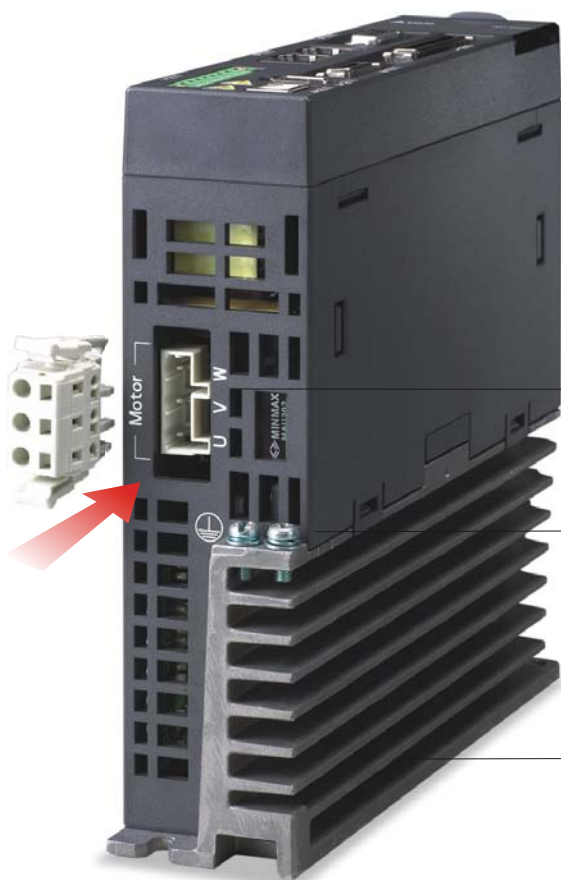
400V Series: DC24V, DC0V are used to connect 24Vdc $\pm 10\%$ power supply.

- Main Circuit Terminal (R, S, T)

220V Series: Used to connect 200~230Vac, 50/60Hz commercial power supply.

400V Series: Used to connect 380~480Vac, 50/60Hz commercial power supply.

- When using an external braking unit, connect it to P $\oplus$ and $\ominus$.



- Servo Motor Output (U, V, W)

- Used to connect servo motor. Never connect the output terminal to main circuit power as the AC drive may be damaged beyond repair if incorrect cables are connected to the output terminals.

- Ground Terminal

- Used to connect grounding wire of power supply and servo motor.

- Heatsink

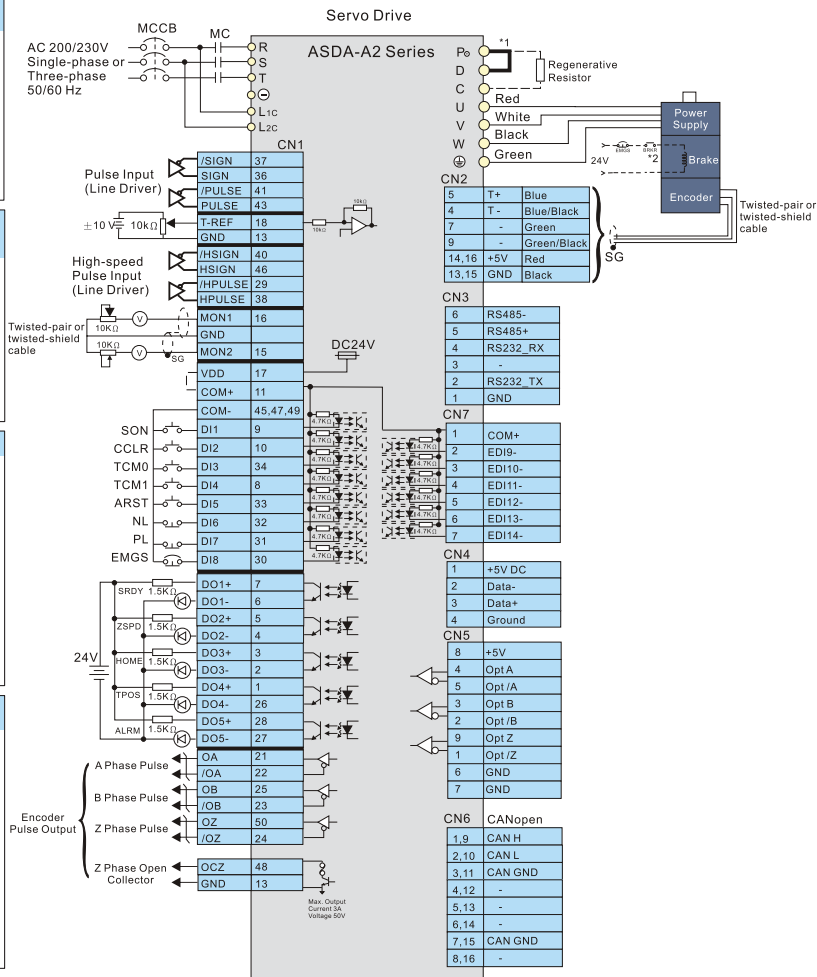
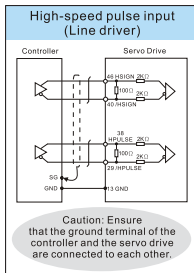
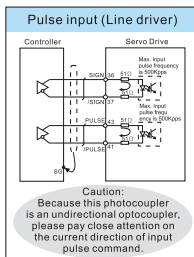
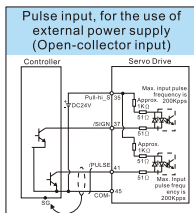
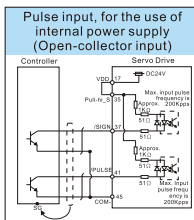
- Used to secure servo drive and for heat dissipation.

Please note:
*This is a Delta optional part.

Standard Connection Examples

220V Series

Position (PT) Control Mode (for Pulse Command Input)

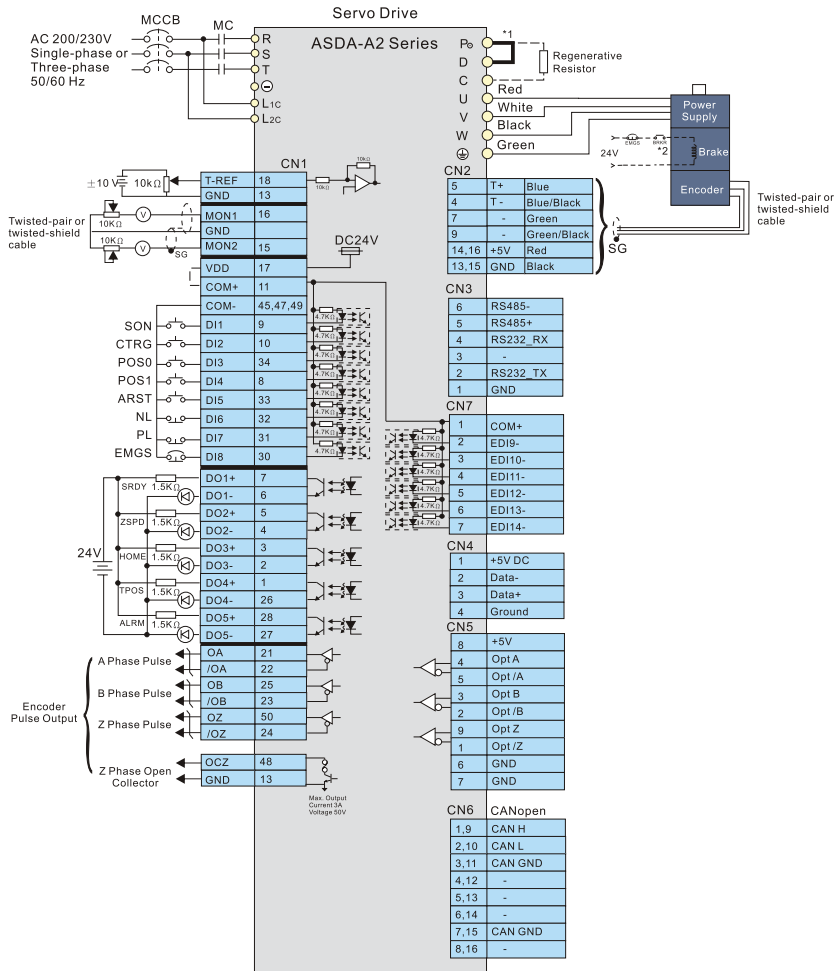


Please note:

*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.

*2 The brake oil has no polarity.

220V Series
Position (PR) Control Mode (for Internal Procedure Control)

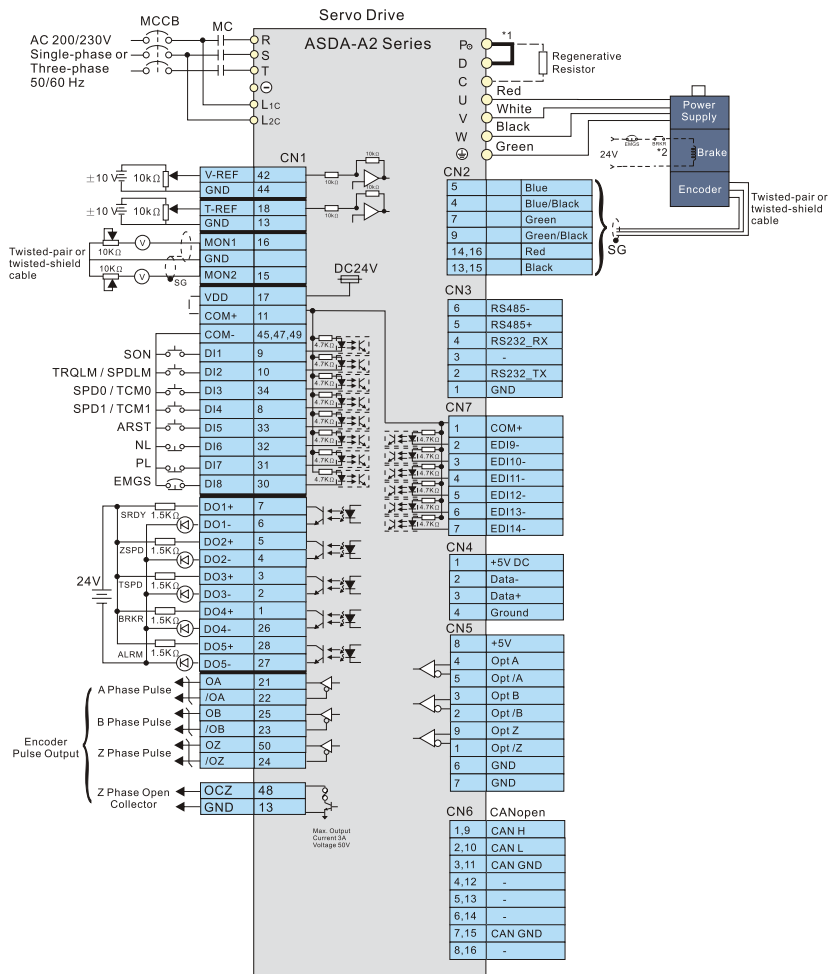


Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

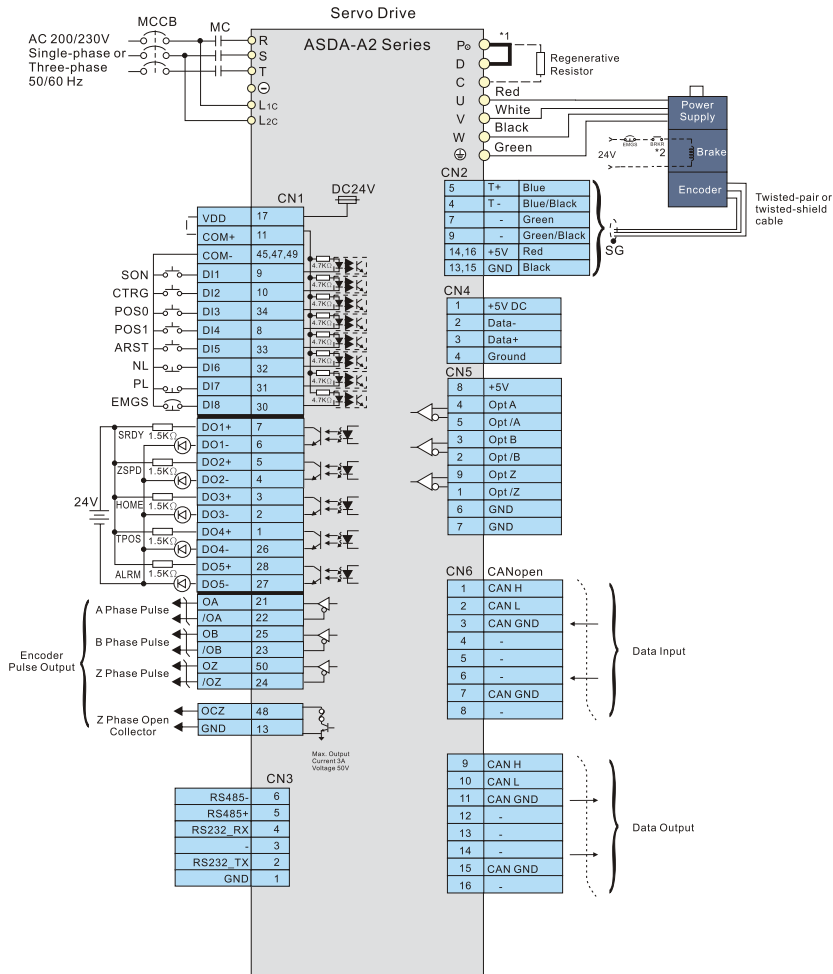
Standard Connection Examples

220V Series

Speed(S), Torque(T) Control Mode (for Analog Voltage Input and Internal Parameter Setting)



220V Series
CANopen Communication Mode (for ASDA-A2-M Series)

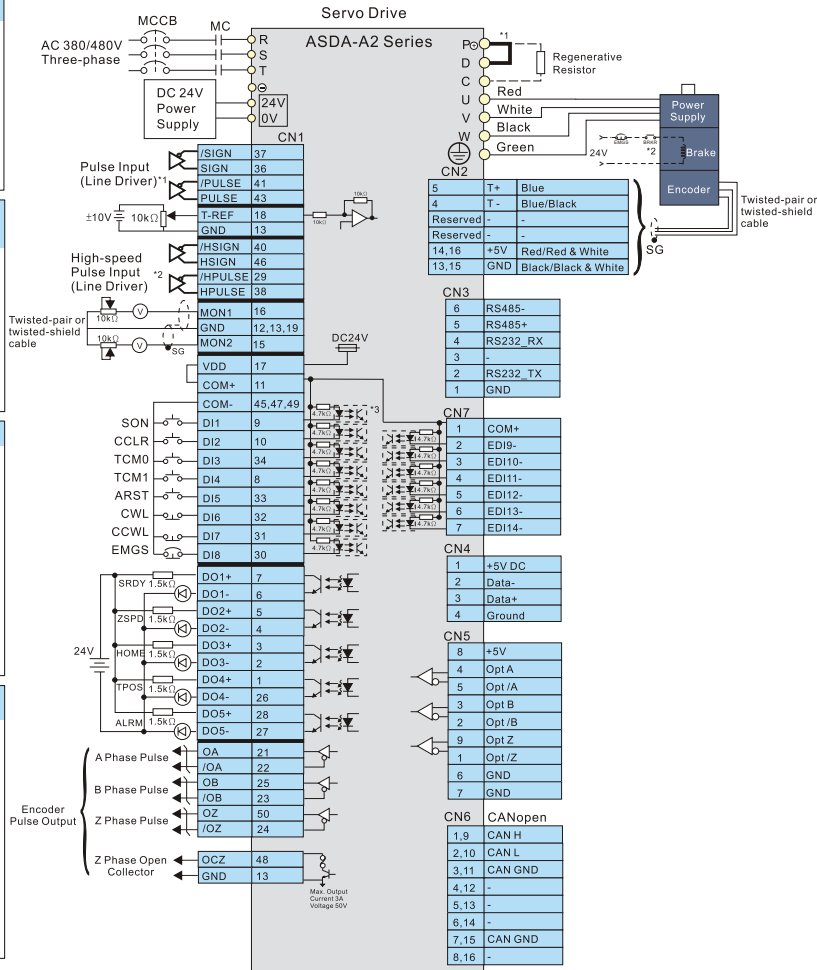
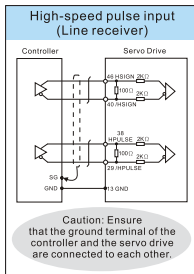
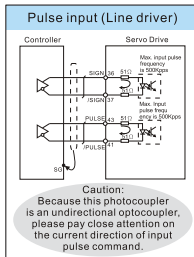
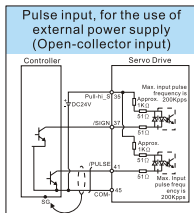
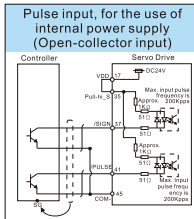


Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

Standard Connection Examples

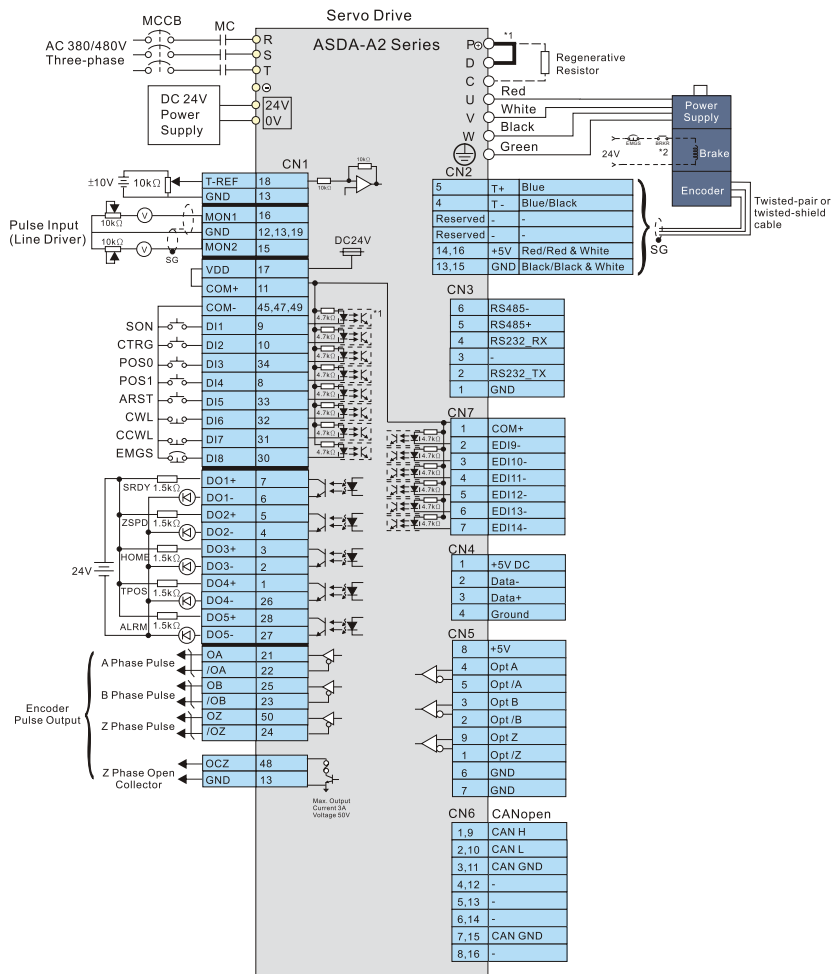
400V Series

Position (PT) Control Mode (for Pulse Command Input)



400V Series

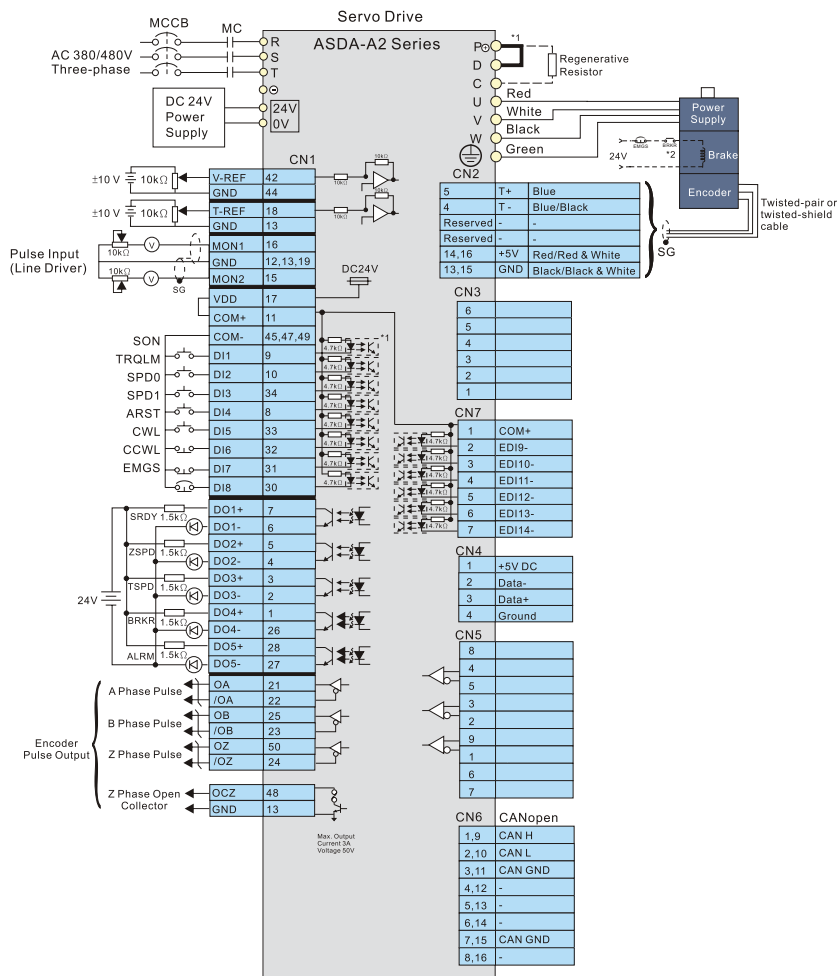
Position (PR) Control Mode (for Internal Procedure Control)



Standard Connection Examples

400V Series

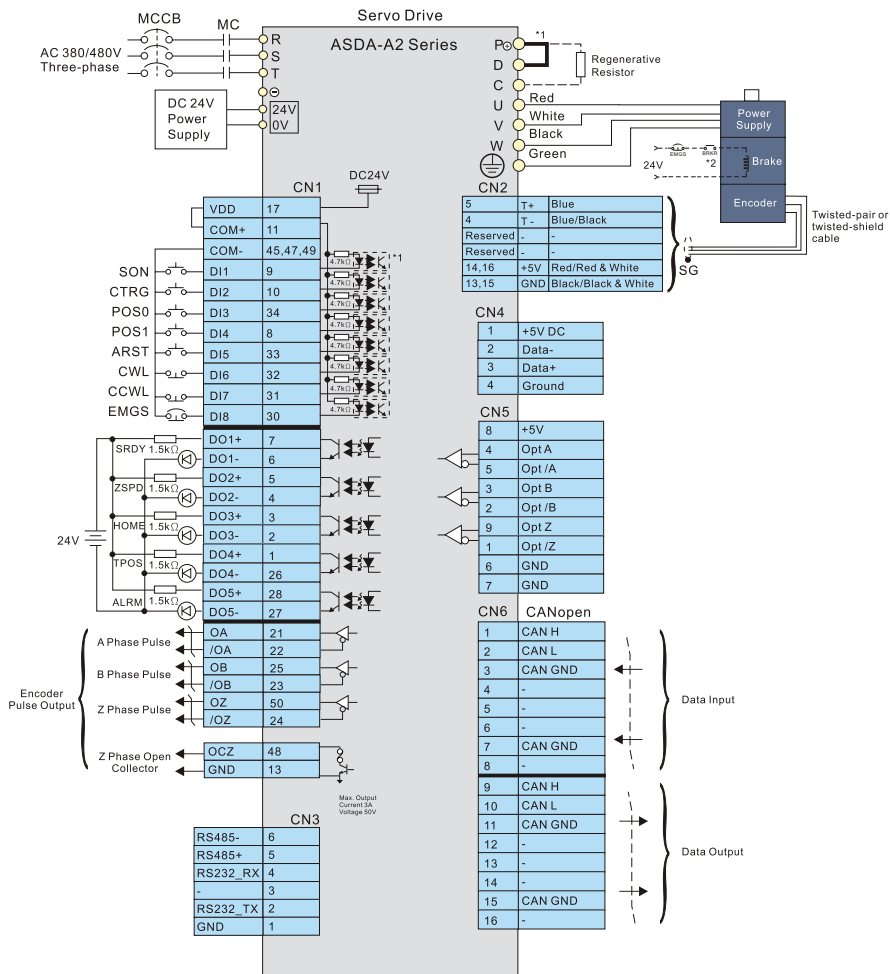
Speed(S), Torque(T) Control Mode (for Analog Voltage Input and Internal Parameter Setting)



Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

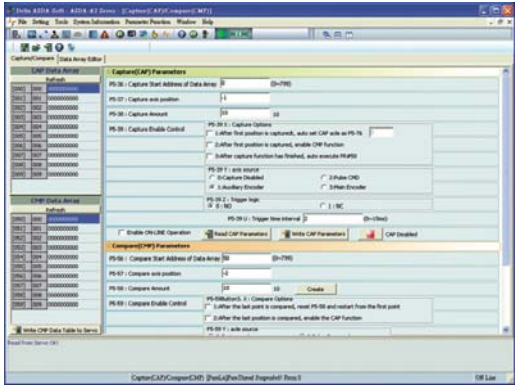
220V Series

CANopen Communication Mode (for ASDA-A2-M Series)

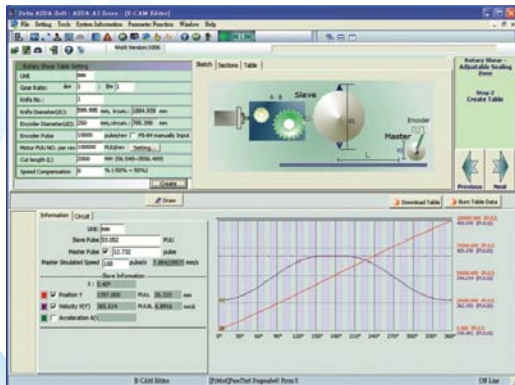


Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

ASDA-Soft Configuration Software

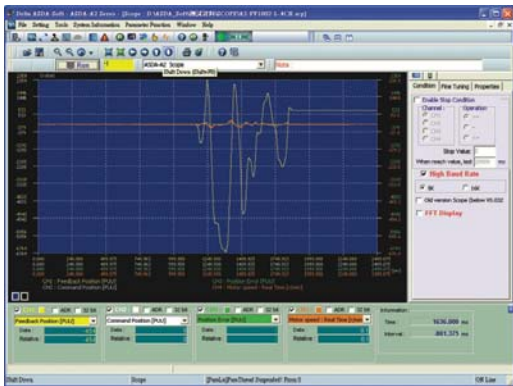


- Strong CAPTURE and COMPARE functions for position latch and detection help you complete system configuration quickly.

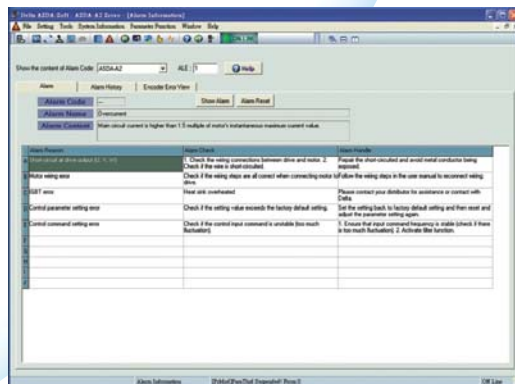


- User-friendly E-Cam editing interface is provided for designing E-Cam outlines and curves freely. In addition, quick settings for flying shear and rotary cut applications are offered.

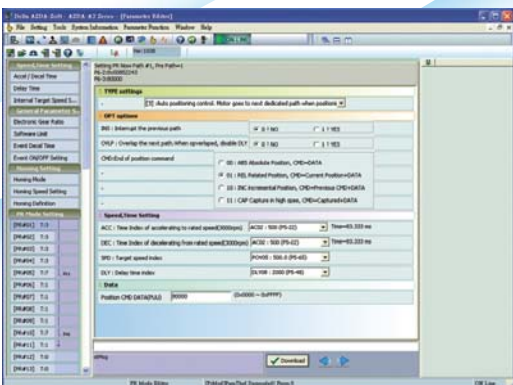




- Versatile on-line monitoring function, similar to a digital oscilloscope is able to quickly record the status and data of each axis. Real-time monitoring is easy.



- Convenient alarm display function is capable of troubleshooting the system easily and recommending timely corrective actions .



- Easy-to-use editing interface is designed for new and enhanced PR control mode. Homing, point-to-point and other motion control functions for multi-axis positioning control are easily achieved.

Optional Accessories

● Quick Connectors

- Used for 100W to 300W servo drives
- One operating lever is provided for wire to terminal block insertion.



● Power Cables

- 3m and 5m standard cables are available.
- Customized service is offered to meet the needs of customers.
- Two types are selectable: with brake and without brake.



● Encoder Cables

- 3m and 5m standard cables are available.
- Customized service is offered to meet the needs of customers.



● RS-232 Communication Cables

- Connects ASDA-A2 to PLC, HMI, and other controllers via RS-232 communication.
- Standard cable length is 3m.





● Terminal Block Modules

- Easy installation and wiring
- 0.5m connection cable is provided.
Easy to reduce the space required.
- Easy to expand system's I/O configuration.

● Regenerative Resistors

- For selecting a regenerative resistor, please refer to the table of regenerative resistor specifications on page 70.

● USB Communication Cables (for PC)

- Connects ASDA-A2 to a PC (via ASDA-Soft configuration software)
- USB1.1 is equipped as standard.

● CANopen Accessories

- Delta's TAP-CN03 distribution box connects ASDA-A2 to Delta's PLC CAN Master.
- CANopen communication cable is provided. Standard cable length is 0.5m and 1m.

● RS-485 Connectors

- Used to connect multiple ASDA-A2 series products by RS-485 interface through Modbus serial communication.

Servo Drive Specifications

220V Series

Model: ASDA-A2 Series			100W	200W	400W	750W	1kW	2kW	1.5kW	3kW	4.5kW	5.5kW	7.5kW	11kW	15kW		
			01	02	04	07	10	20	15	30	45	55	75	1B	1F		
Power supply	Phase / Voltage		Three-phase / Single-phase 220VAC									Three-phase 220VAC					
	Permissible Voltage Range		Three-phase / Single-phase 200~230VAC · -15%~10%									Three-phase 200~230VAC · -15%~10%					
	Continuous Output Current		0.9 Arms	1.55 Arms	2.6 Arms	5.1 Arms	7.3 Arms	8.3 Arms	13.4 Arms	19.4 Arms	32.5 Arms	40 Arms	47.5 Arms	54.4 Arms	70 Arms		
Cooling System			Natural Air Circulation				Fan Cooling										
Encoder Resolution / Feedback Resolution			Incremental : 20-bit (1280000 p/rev) : Absolute : 17-bit														
Control of Main Circuit			SVPWM(Space Vector Pulse Width Modulation) Control														
Tuning Modes			Auto / Manual														
Dynamic Brake			None				Built-in				External						
Position Control Mode	Max. Input Pulse Frequency		Max. 500Kpps / 4Mpps (Line driver), Max. 200Kpps (Open collector)														
	Pulse Type		Pulse + Direction, A phase + B phase, CCW pulse + CW pulse														
	Command Source		External pulse train (PT mode) / Internal parameters (PR mode)														
	Smoothing Strategy		Low-pass and P-curve filter														
	Electronic Gear		Electronic gear N/M multiple N: 1~32767, M: 1:32767 (1/50<N/M<25600)														
	Torque Limit Operation		Set by parameters														
	Feed Forward Compensation		Set by parameters														
Speed Control Mode	Analog Input Command	Voltage Range	0~±10 VDC														
		Input Resistance	10K Ω														
		Time Constant	2.2 μs														
		Speed Control Range ^{*1}	1:5000								1:3000		1:2000				
	Command Source	External analog signal / Internal parameters															
	Smoothing Strategy	Low-pass and S-curve filter															
	Torque Limit Operation	Set by parameters or via analog input															
Frequency Response Characteristic	Maximum 1kHz																
Torque Control Mode	Speed Accuracy ^{*2} (at rated rotation speed)		0.01% or less at 0 to 100% load fluctuation														
			0.01% or less at ±10% power fluctuation														
			0.01% or less at 0°C to 50°C ambient temperature fluctuation														
	Analog Input Command	Voltage Range	0~±10 VDC														
		Input Resistance	10KΩ														
		Time Constant	2.2 μs														
		Command Source	External analog signal / Internal parameters														
Smoothing Strategy	Low-pass filter																
Speed Limit Operation	Set by parameters or via analog input																
Analog Monitor Output	Monitor signal can set by parameters (Output voltage range: ±8V)																
Digital Inputs/Outputs	Inputs		Servo on, Reset, Gain switching, Pulse clear, Zero speed CLAMP, Command input reverse control, Command triggered, Speed/Torque limit enabled, Position command selection, Motor stop, Speed position selection, Position / Speed mode switching, Speed / Torque mode switching, Torque / Position mode switching, PT / PR command switching, Emergency stop, Forward / Reverse inhibit limit, Reference "Home" sensor, Forward / Reverse operation torque limit, Move to "Home", Electronic Cam (E-Cam), Forward / Reverse JOG input, Event trigger PR command, Electronic gear ratio (Numerator) selection and Pulse inhibit input														
			Outputs		Encoder signal output (A, B, Z Line Driver and Z Open Collector)												
					Servo ready, Servo on, At Zero speed, At Speed reached, At Positioning completed, At Torques limit, Servo alarm (Servo fault) activated, Electromagnetic brake control, Homing completed, Output overload warning, Servo warning activated, Position command overflow, Forward / Reverse software limit, Internal position command completed, Capture operation completed output., Motion control completed output., Master position of E-Cam (Electronic Cam)												
Protective Functions			Overcurrent, Overvoltage, Undervoltage, Motor overheated, Regeneration error, Overload, Overspeed, Abnormal pulse control command, Excessive deviation, Encoder error, Adjustment error, Emergency stop activated, Reverse/ Forward limit switch error, Position excessive deviation of full-close control loop, Serial communication error, Input power phase loss, Serial communication time out, short circuit protection of U, V, W, and CN1, CN2, CN3 terminals														
Communication Interface			RS-232 / RS-485 / CANopen / USB / DMCNET														
Environment	Installation Site	Indoor location (free from direct sunlight), no corrosive liquid and gas (far away from oil mist, flammable gas, dust)															
	Altitude	Altitude 1000m or lower above sea level															
	Atmospheric Pressure	86kPa~106kPa															
	Operating Temperature	0°C ~ 55°C(If operating temperature is above 45 °C, forced cooling will be required)															
	Storage Temperature	-20°C ~65°C															
	Humidity	0~90% RH (non-condensing)															
	Vibration	9.80665m/s ² (1G) less than 20Hz, 5.88m/ s ² (0.6G) 20 to 50Hz															
	IP Rating	IP20															
Power System	TN System ^{*3}																
Approvals			  									IEC / EN 61800-5-1, UL508C					

Footnote: ^{*1} Rated rotation speed: When full load, speed ratio is defined as the minimum speed (the motor will not pause).

^{*2} When command is rated rotation speed, the speed fluctuation rate is defined as: (Empty load rotation speed / Full load rotation speed) / Rated rotation speed

^{*3} TN system: A power distribution system having one point directly earthed, the exposed conductive parts of the installation being connected to that points by protective earth conductor.

400V Series

Model: ASDA-A2 Series			750W	1kW	1.5kW	20kW	3kW	4.5kW	5.5kW	7.5kW	11kW	15kW
			07	10	15	20	30	45	55	75	1B	1F
Control Power	Input Voltage		24VDC ±10%									
	Input Current		0.89A				1.18A			1.66A		
	Input Power		21.4W				28.2W			39.85W		
Permissible Voltage Range			Three-phase 380~480VAC ±10%									
Continuous Output Current			3.07 Arms	3.52 Arms	5.02 Arms	6.66 Arms	11.9 Arms	20 Arms	22.37 Arms	30 Arms	28.1 Arms	38.2 Arms
Cooling System			Fan Cooling									
Encoder Resolution / Feedback Resolution			Incremental : 20-bit (1280000 p/rev) : Absolute : 17-bit									
Control of Main Circuit			SVPWM (Space Vector Pulse Width Modulation) Control									
Tuning Modes			Auto / Manual									
Position Control Mode	Dynamic Brake		Built-in					External				
	Max. Input Pulse Frequency		Max. 500Kpps / 4Mpps (Line driver), Max. 200Kpps (Open collector)									
	Pulse Type		Pulse + Direction, A phase + B phase, CCW pulse + CW pulse									
	Command Source		External pulse train (PT mode) / Internal parameters (PR mode)									
	Smoothing Strategy		Low-pass and P-curve filter									
	Electronic Gear		Electronic gear N/M multiple N: 1~32767, M: 1:32767 (1/50~N/M<25600)									
	Torque Limit Operation		Set by parameters									
	Feed Forward Compensation		Set by parameters									
Speed Control Mode	Analog Input Command	Voltage Range	0~±10 VDC									
		Input Resistance	10K Ω									
		Time Constant	2.2 μs									
	Speed Control Range ^{*1}		1:5000					1:3000				
	Command Source		External analog signal / Internal parameters									
	Smoothing Strategy		Low-pass and S-curve filter									
	Torque Limit Operation		Set by parameters or via analog input									
Torque Control Mode	Frequency Response Characteristic		Maximum 1kHz									
	Speed Accuracy ^{*2} (at rated rotation speed)		0.01% or less at 0 to 100% load fluctuation									
			0.01% or less at ±10% power fluctuation									
			0.01% or less at 0 oC to 50 oC ambient temperature fluctuation									
			0~±10 VDC									
Digital Inputs/Outputs	Analog Input Command	Input Resistance	10KΩ									
		Time Constant	2.2 μs									
	Command Source		External analog signal / Internal parameters									
	Smoothing Strategy		Low-pass filter									
	Speed Limit Operation		Set by parameters or via analog input									
Analog Monitor Output			Monitor signal can set by parameters (Output voltage range: ±8V)									
Inputs			Servo on, Reset, Gain switching, Pulse clear, Zero speed CLAMP, Command input reverse control, Command triggered, Speed/Torque limit enabled, Position command selection, Motor stop, Speed position selection, Position / Speed mode switching, Speed / Torque mode switching, Torque / Position mode switching, PT / PR command switching, Emergency stop, Forward / Reverse inhibit limit, Reference "Home" sensor, Forward / Reverse operation torque limit, Move to "Home", Electronic cam, Forward / Reverse JOG input, Event trigger PR command, Electronic gear ratio (Numerator) selection and Pulse inhibit input									
Outputs			Encoder signal output (A, B, Z Line Driver and Z Open Collector)									
Protective Functions			Servo ready, Servo on, At Zero speed, At Speed reached, At Positioning completed, At Torques limit, Servo alarm (Servo fault) activated, Electromagnetic brake control, Homing completed, Output overload warning, Servo warning activated, Position command overflow, Forward / Reverse software limit, Internal position command completed, Capture operation completed output, Motion control completed output, Master position of E-Cam (Electronic Cam)									
Communication Interface			RS-232 / RS-485 / CANopen / USB / DMCNET									
Environment	Installation Site		Indoor location (free from direct sunlight), no corrosive liquid and gas (far away from oil mist, flammable gas, dust)									
	Altitude		Altitude 1000m or lower above sea level									
	Atmospheric Pressure		86kPa~106kPa									
	Operating Temperature		0°C ~ 55 °C(If operating temperature is above 45 °C, forced cooling will be required)									
	Storage Temperature		-20°C ~65°C									
	Humidity		0~90% RH (non-condensing)									
	Vibration		9.80665m/s ² (1G) less than 20Hz, 5.88m/ s ² (0.6G) 20 to 50Hz									
IP Rating			IP20									
Power System			TN System ^{*3}									
Approvals			CE IEC / EN 61800-5-1, UL508C									

Footnote: ^{*1} Rated rotation speed: When full load, speed ratio is defined as the minimum speed (the motor will not pause).

^{*2} When command is rated rotation speed, the speed fluctuation rate is defined as:
(Empty load rotation speed / Full load rotation speed) / Rated rotation speed

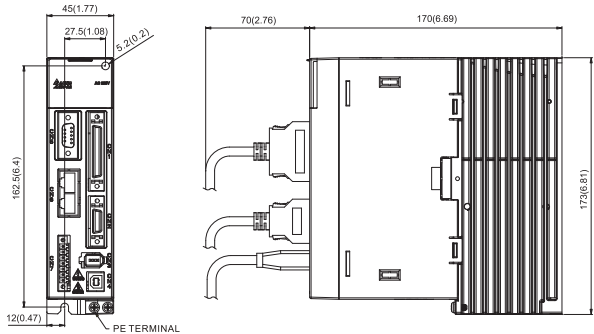
^{*3} TN system: A power distribution system having one point directly earthed, the exposed conductive parts of the installation being connected to that points by protective earth conductor.

Servo Drive Dimensions

220V Series

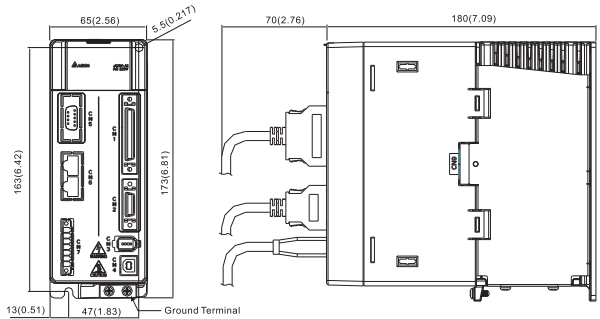
100W / 200W / 400W

Weight
1.5 (3.3)



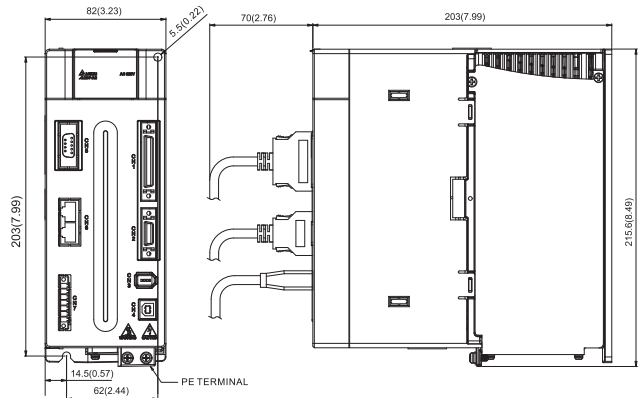
750W / 1.0kW / 1.5kW

Weight
2.0 (4.4)



2.0kW / 3.0kW

Weight
2.89 (6.36)



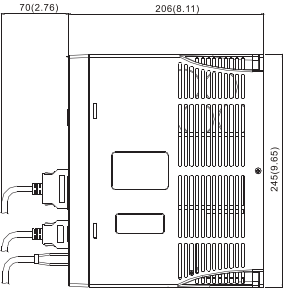
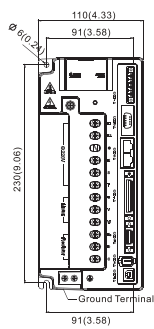
NOTE

- 1) Other accessories for ASDA-A2 series will be increased gradually.
- 2) Accessories images shown here may differ from actual product appearance. Please refer to the actual product appearance.

220V Series

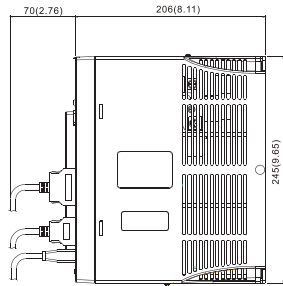
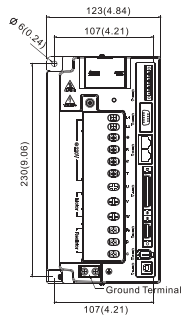
4.5kW

Weight
4.4 (10.0)



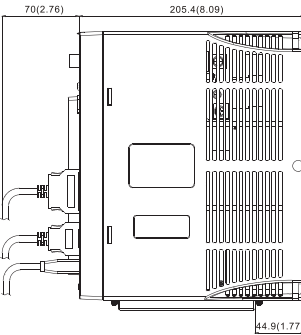
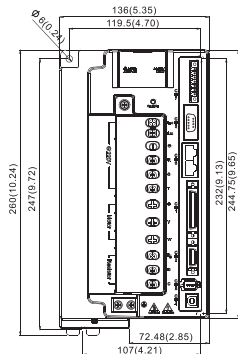
5.5kW

Weight
5.5 (12.1)



7.5kW

Weight
5.9 (13)



NOTE

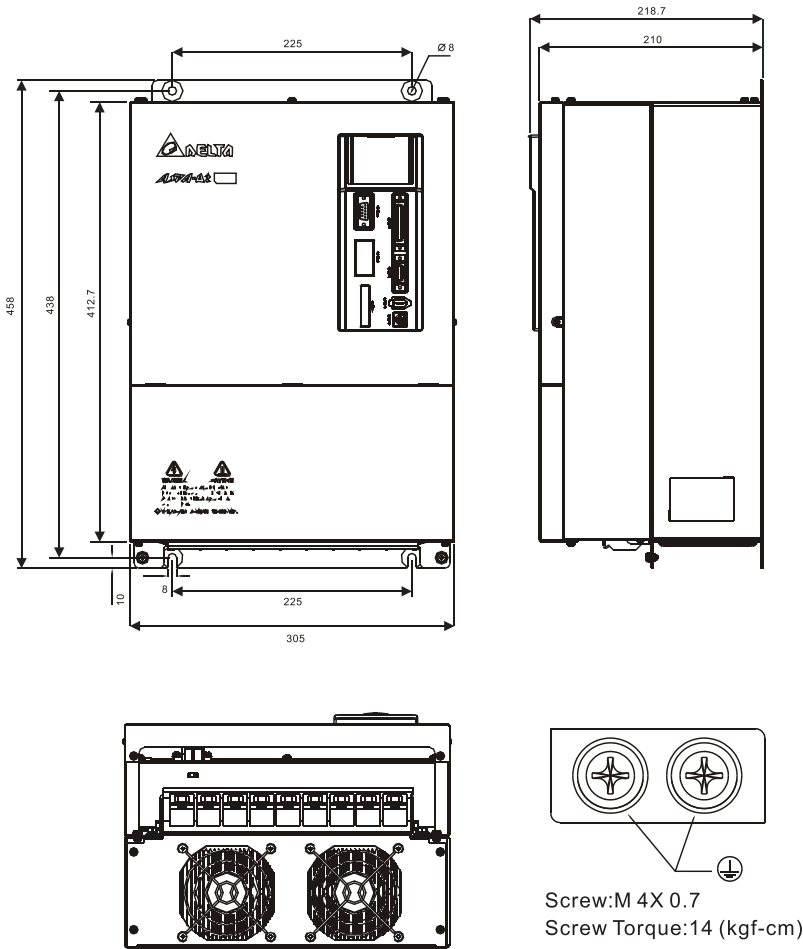
- 1) Other accessories for ASDA-A2 series will be increased gradually.
- 2) Accessories images shown here may differ from actual product appearance. Please refer to the actual product appearance.

Servo Drive Dimensions

220V Series

11kW / 15kW

Weight
20 (44)

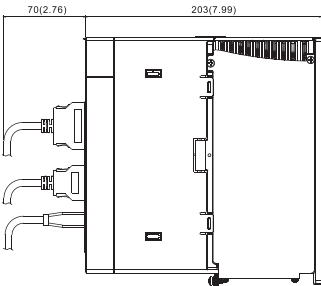
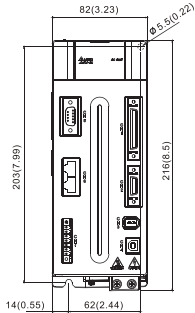


- NOTE**
- 1) Dimensions are in millimeters (inches); Weights are in kilograms (kg) and (pounds (lbs)).
 - 2) Actual measured values are in metric units. Dimensions and weights in (imperial units) are for reference only.
 - 3) The servo drive images shown here may differ from actual product appearance. Please refer to the actual product appearance.
 - 4) Dimensions and weights of the servo drive may be revised without prior notice.

400V Series

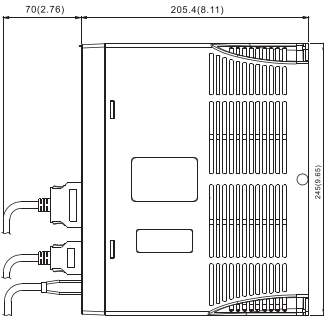
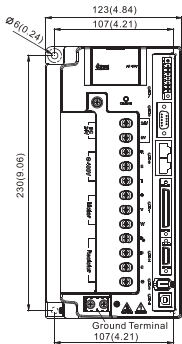
750W / 1.0kW / 1.5kW

Weight
2.89(6.36)



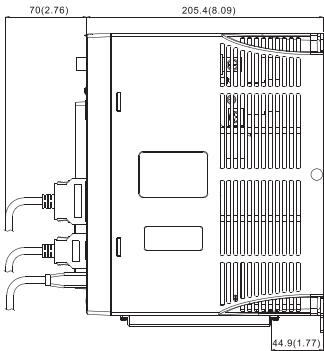
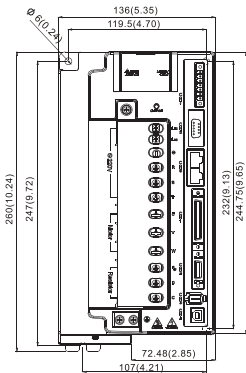
2.0kW / 3.0kW /
4.5kW/5.5kW

Weight
5.5 (12.1)



7.5kW

Weight
5.5 (12.1)



NOTE

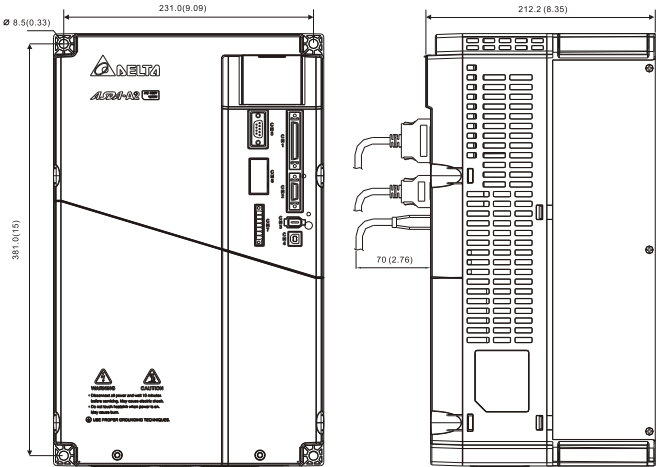
- 1) Other accessories for ASDA-A2 series will be increased gradually.
- 2) Accessories images shown here may differ from actual product appearance. Please refer to the actual product appearance.

Servo Drive Dimensions

400V Series

11kW / 15kW

Weight
8.5 (18.7)



NOTE

- 1) Dimensions are in millimeters (inches); Weights are in kilograms (kg) and (pounds (lbs)).
- 2) Actual measured values are in metric units. Dimensions and weights in (imperial units) are for reference only.
- 3) The servo drive images shown here may differ from actual product appearance. Please refer to the actual product appearance.
- 4) Dimensions and weights of the servo drive may be revised without prior notice.



Optional Cables and Connectors

Power Connectors

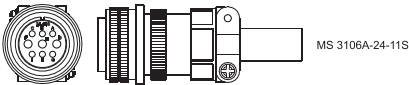
ASDBCAPW0000

Title	Part No.	Manufacturer
Housing	C4201H00-2*2PA	JOWLE
Terminal	C4201TOP-2	JOWLE

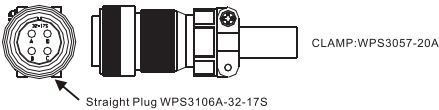
ASDBCAPW0100

Title	Part No.	Manufacturer
Housing	C4201H00-2*3PA	JOWLE
Terminal	C4201TOP-2	JOWLE

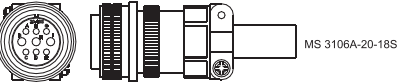
ASD-CAPW2000



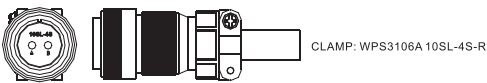
ASD-CAPW4000



ASD-CAPW1000

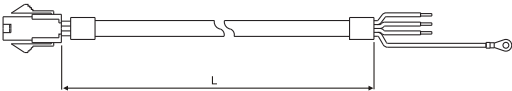


ASD-CNBR1000



Power Cables

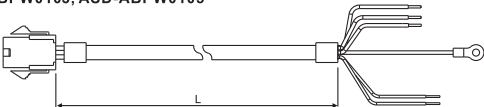
ASD-ABPW0003, ASD-ABPW0005



Title	Part No.	Manufacturer
Housing	C4201H00-2*2PA	JOWLE
Terminal	C4201TOP-2	JOWLE

Item	Part No.	L	
		mm	inch
1	ASD-ABPW0003	3000 ±100	118±4
2	ASD-ABPW0005	5000±100	197±4

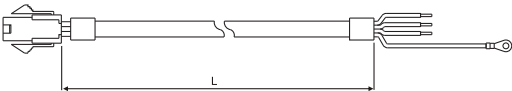
ASD-ABPW0103, ASD-ABPW0105



Title	Part No.	Manufacturer
Housing	C4201H00-2*3PA	JOWLE
Terminal	C4201TOP-2	JOWLE

Item	Part No.	L	
		mm	inch
1	ASD-ABPW0103	3000±100	118±4
2	ASD-ABPW0105	5000±100	197±4

ASD-A2PW2003, ASD-A2PW2005



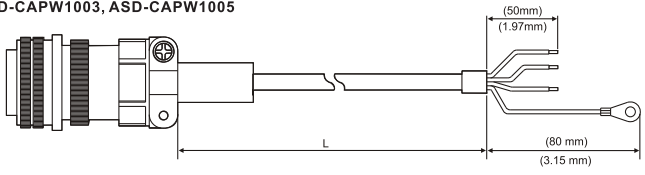
Title	Part No.	Manufacturer
Housing	50-36-1735	Molex
Terminal	39-00-0040	Molex

Item	Part No.	L	
		mm	inch
1	ASD-A2PW2003	3000 ±100	118±4
2	ASD-A2PW2005	5000±100	197±4

Optional Cables and Connectors

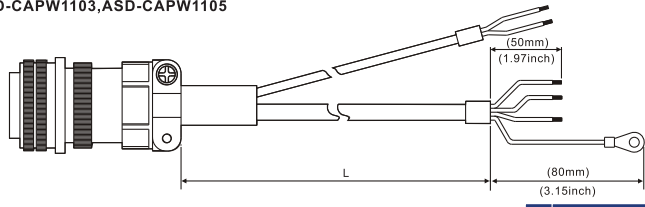
- Power Cables

ASD-CAPW1003, ASD-CAPW1005



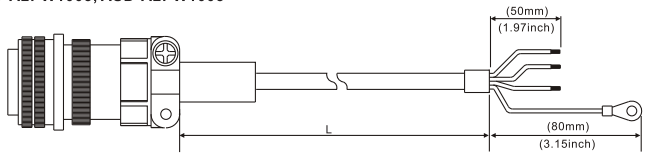
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW1003	3106A-20-18S	3000±100	118±4
2	ASD-CAPW1005	3106A-20-18S	5000±100	197±4

ASD-CAPW1103, ASD-CAPW1105



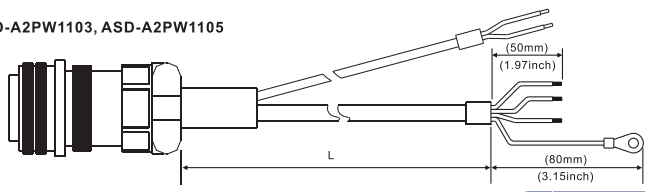
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW1103	3106A-20-18S	3000±100	118±4
2	ASD-CAPW1105	3106A-20-18S	5000±100	197±4

ASD-A2PW1003, ASD-A2PW1005



Item	Part No.	Straight	L	
			mm	inch
1	ASD-A2PW1003	3106A-20-18S	3000±100	118±4
2	ASD-A2PW1005	3106A-20-18S	5000±100	197±4

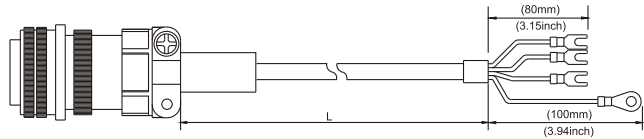
ASD-A2PW1103, ASD-A2PW1105



Item	Part No.	Straight	L	
			mm	inch
1	ASD-A2PW1103	3106A-20-18S	3000±100	118±4
2	ASD-A2PW1105	3106A-20-18S	5000±100	197±4

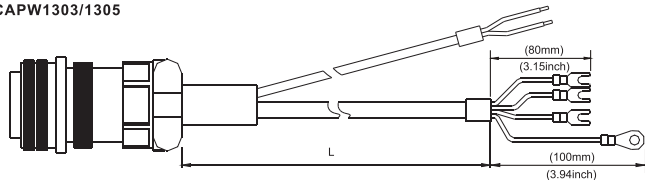
● Power Cables

ASD-CAPW1203/1205



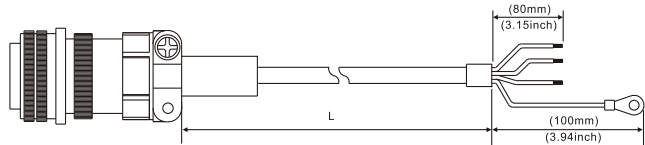
Item	Part No.	Straight	L	
			mm	inc
1	ASD-CAPW1203	3106A-20-18S	3000±100	118±4
2	ASD-CAPW1205	3106A-20-18S	5000±100	197±4

ASD-CAPW1303/1305



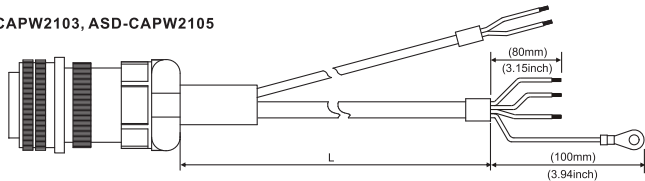
Item	Part No.	Straight	L	
			mm	inc
1	ASD-CAPW1303	3106A-20-18S	3000±100	118±4
2	ASD-CAPW1305	3106A-20-18S	5000±100	197±4

ASD-CAPW2003, ASD-CAPW2005



Item	Part No.	Straight	L	
			mm	inc
1	ASD-CAPW2003	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2005	3106A-24-11S	5000±100	197±4

ASD-CAPW2103, ASD-CAPW2105

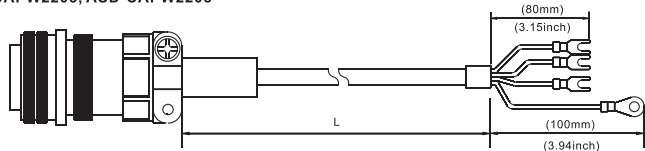


Item	Part No.	Straight	L	
			mm	inc
1	ASD-CAPW2103	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2105	3106A-24-11S	5000±100	197±4

Optional Cables and Connectors

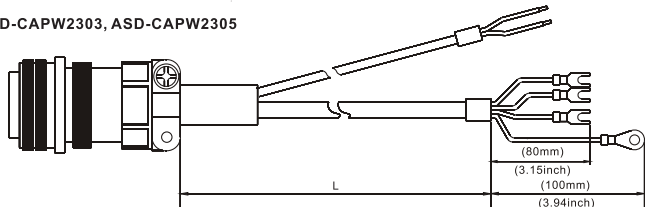
- Power Cables

ASD-CAPW2203, ASD-CAPW2205



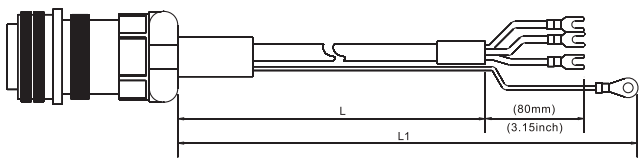
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW2203	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2205	3106A-24-11S	5000±100	197±4

ASD-CAPW2303, ASD-CAPW2305



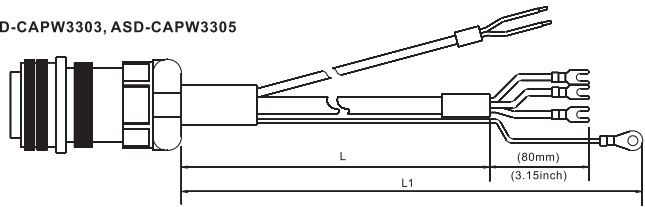
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW2303	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2305	3106A-24-11S	5000±100	197±4

ASD-CAPW3203, ASD-CAPW3205



Item	Part No.	Straight	L		L1	
			mm	inch	mm	inch
1	ASD-CAPW3203	MS 3106-24-11S	3000±100	118±4	3100±100	122±0.4
2	ASD-CAPW3205	MS 3106-24-11S	5000±100	197±4	5100±100	201±0.4

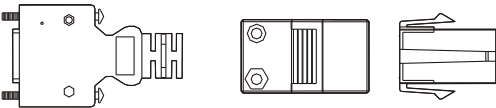
ASD-CAPW3303, ASD-CAPW3305



Item	Part No.	Straight	L		L1	
			mm	inch	mm	inch
1	ASD-CAPW3303	MS 3106-24-11S	3000±100	118±4	3100±100	122±0.4
2	ASD-CAPW3305	MS 3106-24-11S	5000±100	197±4	5100±100	201±0.4

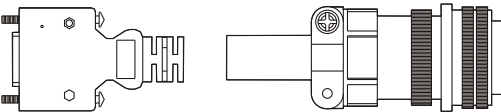
● Encoder Connectors

ASD-ABEN0000



Title		Part No.	Manufacturer
MOTOR SIDE	Housing	AMP(1-172161-9)	AMP
	Terminal	AMP(170359-3)	AMP
	CLAMP	DELTA(34703237XX)	DELTA
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

ASD-CAEN1000



Title		Part No.	Manufacturer
MOTOR SIDE		3106A-20-29S	-----
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

● Incremental Encoder Cables

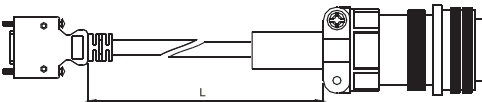
ASD-ABEN0003, ASD-ABEN0005



Title		Part No.	Manufacturer
MOTOR SIDE	Housing	AMP(1-172161-9)	AMP
	Terminal	AMP(170359-3)	AMP
	CLAMP	DELTA(34703237XX)	DELTA
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

Item	Part No.	L	
		mm	inch
1	ASD-ABEN0003	3000±100	118±4
2	ASD-ABEN0005	5000±100	197±4

ASD-CAEN1003, ASD-CAEN1005



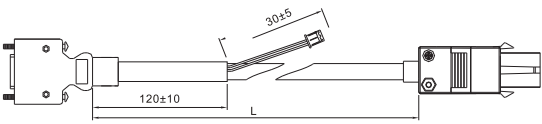
Title		Part No.	Manufacturer
MOTOR SIDE		3106A-20-29S	-----
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAEN1003	3106A-20-29S	3000±100	118±4
2	ASD-CAEN1005	3106A-20-29S	5000±100	197±4

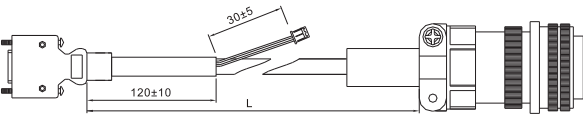
Optional Cables and Connectors

Absolute Encoder Cables

ASD-A2EB0003, ASD-A2EB0005



ASD-A2EB1003, ASD-A2EB1005



Title		Part No.	Manufacturer
MOTOR SIDE	Housing	AMP(1-172161-9)	AMP
	Terminal	AMP(170359-3)	AMP
	CLAMP	DELTA(34703237XX)	DELTA
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

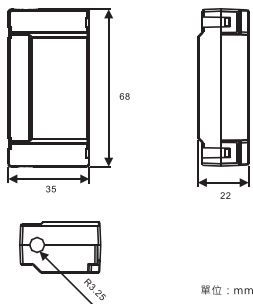
Item	Part No.	L	
		mm	inch
1	ASD-A2EB0003	3000±100	118±4
2	ASD-A2EB0005	5000±100	197±4

Title		Part No.	Manufacturer
MOTOR SIDE		3106A-20-29S	-
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

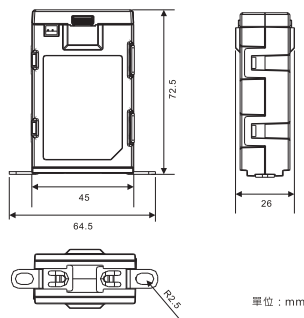
Item	Part No.	L	
		mm	inch
1	ASD-A2EB1003	3000±100	118±4
2	ASD-A2EB1005	5000±100	197±4

Battery Box For An Absolute Encoder

Single Battery Box
ASD-MDBT0100



Dual Battery Box
ASD-MDBT0200

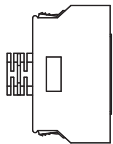


Battery
ASD-CLBT0100



I/O Signal Connector (CN1)

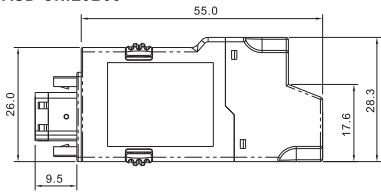
ASD-CNSC0050



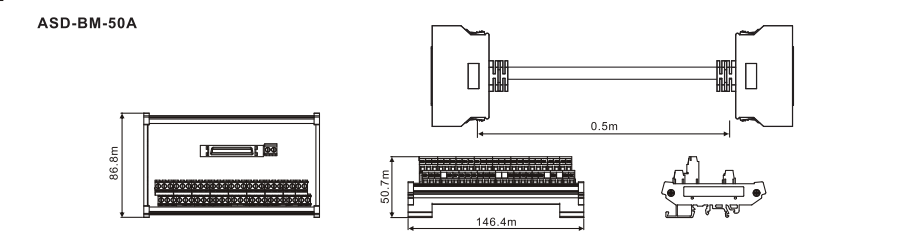
Vendor Name	Vendor P/N
3M TAIWAN LTD	10150-3000PE
3M TAIWAN LTD	10350-52A0-008

RS-485 Connector

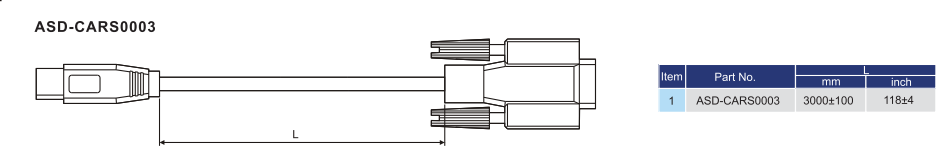
ASD-CNIE0B06



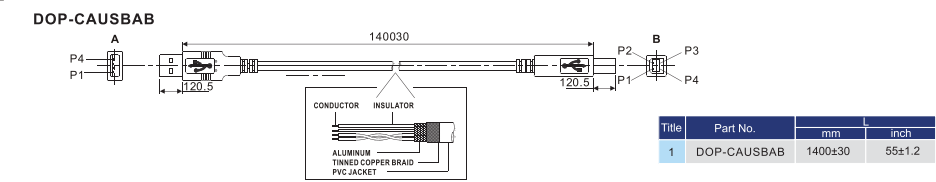
● Terminal Block Module



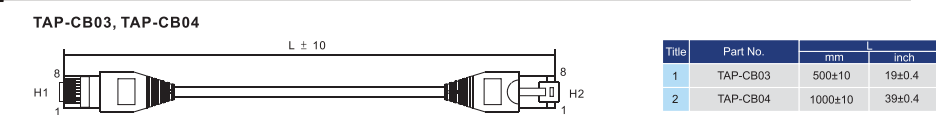
● RS-232 Communication Cable



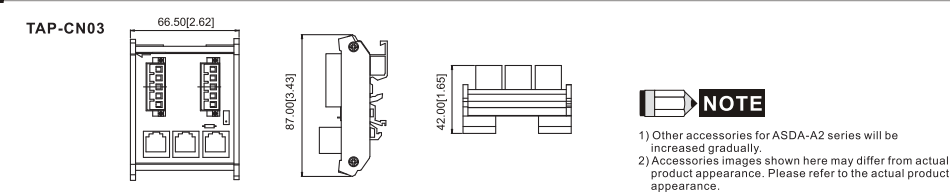
● Communication Cable between Drive and Computer (for PC)



● CANopen Communication Cable



● CANopen Distribution Box



Servo Drive, Servo Motor and Accessories Combinations

220V Series

100W Servo Drive and 100W Low Inertia Servo Motor

Servo Drive	ASD-A2-0121-□
Low Inertia Servo Motor	ECMA-C10401□S
Power-Cables(Without Brake)	ASD-ABPW000X
Power Connectors (Without Brake)	ASDBCAPW0000
Power-Cables(With Brake)	ASD-ABPW010X
Power Connectors (With Brake)	ASDBCAPW0100
Incremental Encoder Cables	ASD-ABEN000X
Absolute Encoder Cables	ASD-A2EB000X
Encoder Connectors	ASD-ABEN0000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

200W Servo Drive and 200W Low Inertia Servo Motor

Servo Drive	ASD-A2-0221-□
Low Inertia Servo Motor	ECMA-C10602□S
Power-Cables(Without Brake)	ASD-ABPW000X
Power Connectors (Without Brake)	ASDBCAPW0000
Power-Cables(With Brake)	ASD-ABPW010X
Power Connectors (With Brake)	ASDBCAPW0100
Incremental Encoder Cables	ASD-ABEN000X
Absolute Encoder Cables	ASD-A2EB000X
Encoder Connectors	ASD-ABEN0000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

400W Servo Drive and 400W Low Inertia Servo Motor

Servo Drive	ASD-A2-0421-□
Low Inertia Servo Motor	ECMA-C10604□S ECMA-C10804□7
Power-Cables(Without Brake)	ASD-ABPW000X
Power Connectors (Without Brake)	ASDBCAPW0000
Power-Cables(With Brake)	ASD-ABPW010X
Power Connectors (With Brake)	ASDBCAPW0100
Incremental Encoder Cables	ASD-ABEN000X
Absolute Encoder Cables	ASD-A2EB000X
Encoder Connectors	ASD-ABEN0000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

400W Servo Drive and 500W Medium Inertia Servo Motor

Servo Drive	ASD-A2-0421□
Medium Inertia Servo Motor	ECMA-E11305□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

400W Servo Drive and 300W High Inertia Servo Motor

Servo Drive	ASD-A2-0421□
High Inertia Servo Motor	ECMA-G11303□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

750W Servo Drive and 750W Low Inertia Servo Motor

Servo Drive	ASD-A2-0721□
Low Inertia Servo Motor	ECMA-C10807□S ECMA-C10907□S
Power-Cables(Without Brake)	ASD-ABPW000X
Power Connectors (Without Brake)	ASDBCAPW0000
Power-Cables(With Brake)	ASD-ABPW010X
Power Connectors (With Brake)	ASDBCAPW0100
Incremental Encoder Cables	ASD-ABEN000X
Absolute Encoder Cables	ASD-A2EB000X
Encoder Connectors	ASD-ABEN0000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)



Servo Drive, Servo Motor and Accessories Combinations

220V Series

750W Servo Drive and 600W High Inertia Servo Motor

Servo Drive	ASD-A2-0721-□
High Inertia Servo Motor	ECMA-G11306□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

1kW Servo Drive and 1kW Low Inertia Servo Motor

Servo Drive	ASD-A2-1021-□
Low Inertia Servo Motor	ECMA-C11010□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

1kW Servo Drive and 1kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1021-□
Medium Inertia Servo Motor	ECMA-E11310□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

1kW Servo Drive and 900W High Inertia Servo Motor

Servo Drive	ASD-A2-1021-□
High Inertia Servo Motor	ECMA-G11309□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

1.5kW Servo Drive and 1.5kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1521-□
Medium Inertia Servo Motor	ECMA-G11315□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

2kW Servo Drive and 2kW Low Inertia Servo Motor

Servo Drive	ASD-A2-2023-□
Low Inertia Servo Motor	ECMA-C11020□S
Power-Cables(Without Brake)	ASD-A2PW100X
Power-Cables(With Brake)	ASD-A2PW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

Servo Drive, Servo Motor and Accessories Combinations

220V Series

2kW Servo Drive and 2kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-2023-□
Medium Inertia Servo Motor	ECMA-E11320□S
Power-Cables(Without Brake)	ASD-A2PW100X
Power-Cables(With Brake)	ASD-A2PW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

2kW Servo Drive and 2kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-2023-□
Medium Inertia Servo Motor	ECMA-E11820□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW210X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

3kW Servo Drive and 3kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-3023-□
Medium Inertia Servo Motor	ECMA-E11830□S
Power-Cables(Without Brake)	ASD-CAPW200X
Power-Cables(With Brake)	ASD-CAPW210X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

3kW Servo Drive and 3kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-3023-□
Medium-High Inertia Servo Motor	ECMA-F11830-□S
Power-Cables(Without Brake)	ASD-CAPW200X
Power-Cables(With Brake)	ASD-CAPW210X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

4.5kW Servo Drive and 4.5kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-4523-□
Medium-High Inertia Servo Motor	ECMA-F11845-□S
Power-Cables(Without Brake)	ASD-CAPW320X
Power-Cables(With Brake)	ASD-CAPW330X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

5.5kW Servo Drive and 5.5kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-5523-□
Medium-High Inertia Servo Motor	ECMA-F11855-□S
Power-Cables(Without Brake)	-
Power-Cables(With Brake)	-
Power Connectors	ASD-CAPW4000
Brake Cables	ASD-CNBR1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

Servo Drive, Servo Motor and Accessories Combinations

220V Series

7.5kW Servo Drive and 7.5kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-7523-□
Medium-High Inertia Servo Motor	ECMA-F11875□S
Power-Cables(Without Brake)	-
Power-Cables(With Brake)	-
Power Connectors	ASD-CAPW4000
Brake Cables	ASD-CNBR1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

11kW and 15kW models will be available soon For the available models and related optional accessories, please visit our website at : www.delta.com.tw/ia , or please consult our local distributors.

400V Series

750W Servo Drive and 750W Low Inertia Servo Motor

Servo Drive	ASD-A2-0743-□
Low Inertia Servo Motor	ECMA-J10807□S
Power-Cables(Without Brake)	ASD-A2PW200X
Power Connectors (Without Brake)	ASDBCAPW0000
Power-Cables(With Brake)	ASD-ABPW010X
Power Connectors (With Brake)	ASDBCAPW0100
Incremental Encoder Cables	ASD-ABEN000X
Absolute Encoder Cables	ASD-A2EB000X
Encoder Connectors	ASD-ABEN0000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

1kW Servo Drive and 1kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1043-□
Medium Inertia Servo Motor	ECMA-K11310□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

400V Series

1.5kW Servo Drive and 1.5kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1543-□
Medium Inertia Servo Motor	ECMA-K11315□S
Power-Cables(Without Brake)	ASD-CAPW100X
Power-Cables(With Brake)	ASD-CAPW110X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

2kW Servo Drive and 2kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-2043-□
Medium Inertia Servo Motor	ECMA-K11320□S
Power-Cables(Without Brake)	ASD-CAPW120X
Power-Cables(With Brake)	ASD-CAPW130X
Power Connectors	ASD-CAPW1000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

3kW Servo Drive and 3kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-3043-□
Medium-High Inertia Servo Motor	ECMA-K11830□S
Power-Cables(Without Brake)	ASD-CAPW220X
Power-Cables(With Brake)	ASD-CAPW230X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

Servo Drive, Servo Motor and Accessories Combinations

400V Series

4.5kW Servo Drive and 4.5kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-4543-□
Medium-High Inertia Servo Motor	ECMA-L11845□S
Power-Cables(Without Brake)	ASD-CAPW220X
Power-Cables(With Brake)	ASD-CAPW230X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

5.5kW Servo Drive and 5.5kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-5543-□
Medium-High Inertia Servo Motor	ECMA-L11855□3
Power-Cables(Without Brake)	ASD-CAPW220X
Power-Cables(With Brake)	ASD-CAPW230X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

7.5kW Servo Drive and 7.5kW Medium-High Inertia Servo Motor

Servo Drive	ASD-A2-7543-□
Medium-High Inertia Servo Motor	ECMA-L11875□3
Power-Cables(Without Brake)	ASD-CAPW320X
Power-Cables(With Brake)	ASD-CAPW330X
Power Connectors	ASD-CAPW2000
Incremental Encoder Cables	ASD-CAEN100X
Absolute Encoder Cables	ASD-A2EB100X
Encoder Connectors	ASD-CAEN1000

(X=3 indicates that the cable length is 3m; X=5 indicates that the cable length is 5m)

11kW and 15kW models will be available soon For the available models and related optional accessories, please visit our website at : www.delta.com.tw/ia , or please consult our local distributors.

Other Accessories (for ASDA-A2 series all models)	
Description	Delta Part Number
50Pin I/O signal connector (CN1)	ASD-CNSC0050
Terminal Block Module	ASD-BM-50A
RS-232 Communication Cable	ASD-CARS0003
Communication Cable between Drive and Computer(for PC)	DOP-CAUSBAB
CANopen Communication Cable	TAP-CB03 / TAP-CB04
CANopen Distribution Box	TAP-CN03
RS-485 Connector	ASD-CNIE0B06
Regenerative Resistor 400W 40Ω	BR400W040
Regenerative Resistor 1kW 20Ω	BR1K0W020
Regenerative Resistor 3kW 10Ω	BR1K5W005



Safety Information

Global Standards	ASDA-A2 series is designed to fully comply with demanding international standards, i.e. IEC and EN, etc. for all fields of industrial automation technology.	
EMC standard	EN61000-4-6	Level 3
	EN61000-4-3	Level 3
	EN61000-4-2	Level 2 and Level 3
	EN61000-4-4	Level 3
	EN61000-4-8	Level 4
	EN61000-4-5	Level 3
Conducted & Radiated Emissions	Complies with EN550011 Class A Group 1, with external EMC filter	
CE Marking	CE recognized. Complies with Directive 2006/95/EC of the European Parliament and EMC Directive 2004/108/EC.	
UL Approval	UL (U.S.), cUL (Canada) recognized.	
Test Standard	IEC/EN50178, IEC/EN60529	
	IP20	
Vibration	1G less than 20Hz, 0.6G 20 to 50Hz. Complies with IEC/EN50178	
Shock	15gn 11ms. Complies with IEC/EN600028-2-27	
Pollution Degree	Degree 2. Complies with IEC/EN61800-5-1	



Regenerative Resistor Specifications

220V Series

Servo Drive (kW)	Specifications of Built-in Regenerative Resistors		Min. Allowable Resistance (Ohm)
	Resistance (parameter P1-52) (Ohm)	Capacity (parameter P1-53) (Watt)	
0.1	-	-	30Ω
0.2	-	-	30Ω
0.4	40Ω	40W	30Ω
0.75	40Ω	60W	20Ω
1.0	40Ω	60W	20Ω
1.5	40Ω	60W	20Ω
2.0	20Ω	100W	10Ω
3.0	20Ω	100W	10Ω
4.5	20Ω	100W	10Ω
5.5	-	-	8Ω
7.5	-	-	5Ω
11	-	-	5Ω
15	-	-	3Ω

Note:

- 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
- When the fault, ALE05 (Regeneration Error) occurs, please increase the regenerative resistor capacity or decrease the regenerative resistor resistance (the regenerative resistor resistance should not be less than the minimum allowable resistance listed in the above table.)
- If the situation is not improved after increasing the regenerative resistor capacity or decreasing the regenerative resistor resistance, please purchase regenerative resistor module.
- When combining multiple small-capacity regenerative resistors in parallel to increase the regenerative resistor capacity, make sure that the total resistance value of the regenerative resistors should not be less than the minimum allowable resistance listed in the above table.

400V Series

Servo Drive (kW)	Specifications of Built-in Regenerative Resistors		Min. Allowable Resistance (Ohm)
	Resistance (parameter P1-52) (Ohm)	Capacity (parameter P1-53) (Watt)	
0.75	80Ω	100W	60Ω
1.0	80Ω	100W	60Ω
1.5	80Ω	100W	40Ω
2.0	-	-	40Ω
3.0	-	-	30Ω
4.5	-	-	20Ω
5.5	-	-	20Ω
7.5	-	-	15Ω
11	-	-	15Ω
15	-	-	10Ω

Note:

- 750W ~ 1.5kW servo drives provide a built-in regenerative resistor.
- When the fault, ALE05 (Regeneration Error) occurs, please increase the regenerative resistor capacity or decrease the regenerative resistor resistance (the regenerative resistor resistance should not be less than the minimum allowable resistance listed in the above table.)
- If the situation is not improved after increasing the regenerative resistor capacity or decreasing the regenerative resistor resistance, please purchase regenerative resistor module.
- When combining multiple small-capacity regenerative resistors in parallel to increase the regenerative resistor capacity, make sure that the total resistance value of the regenerative resistors should not be less than the minimum allowable resistance listed in the above table.



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*We reserve the right to change the information in this catalogue without prior notice.