DELTA ELECTRONICS, INC.

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*Slight variations in appearance and specifications may exist between the catalogue and the actual product.
We reserve the right to change the information in this catalogue without prior notice.

ASDA-A2_C_EN_20110215

DELTA ELECTRONICS, INC.

ASDA-A2

Delta ASDA-A2 AC Servo System

www.delta.com.tw/industrialautomation

Call 1(800)985-6929 for Sales deltaacdrives.com sales@deltaacdrives.com

Introduction to the ASDA-A2 Series

ASDA-A2

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 and the high-speed PC monitoring function (similar to a digital oscilloscope), etc. 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

NEW 400V SERIES!

Table of Contents

Introduction to the 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.

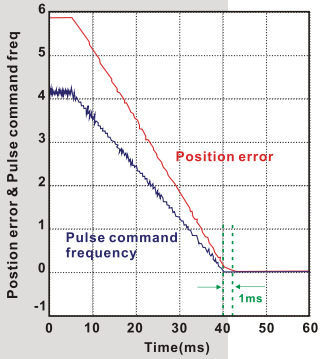
■ Absolute encoder supported. Motor position will not get lost when power is cut off.

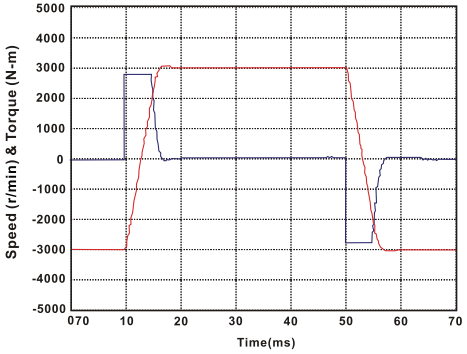
● High Responsiveness

■ Up to 1kHz frequency response.

■ Settling time below 1ms.

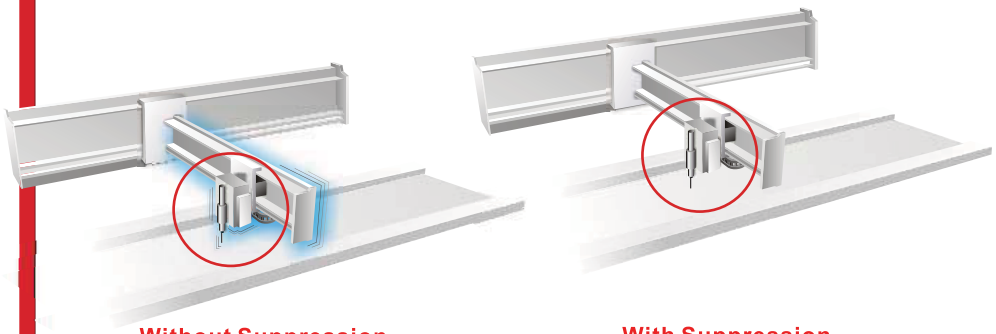
■ 7ms acceleration time for speeds from -3000r/min to 3000r/min with an empty load!
(Note: The test record of a 400W motor with 60mm frame size)





● Excellent Suppression Functions

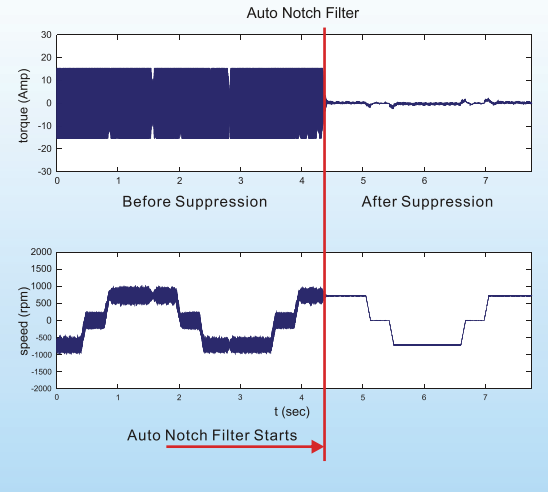
■ Vibration Suppression (Low Frequency)
Two vibration suppression filters are provided for long arm system to minimize the vibration at machine edges effectively.



Without Suppression

With Suppression

■ Resonance Suppression (High Frequency)
Two auto notch filters and one manual notch filter are provided to suppress mechanical resonance efficiently.

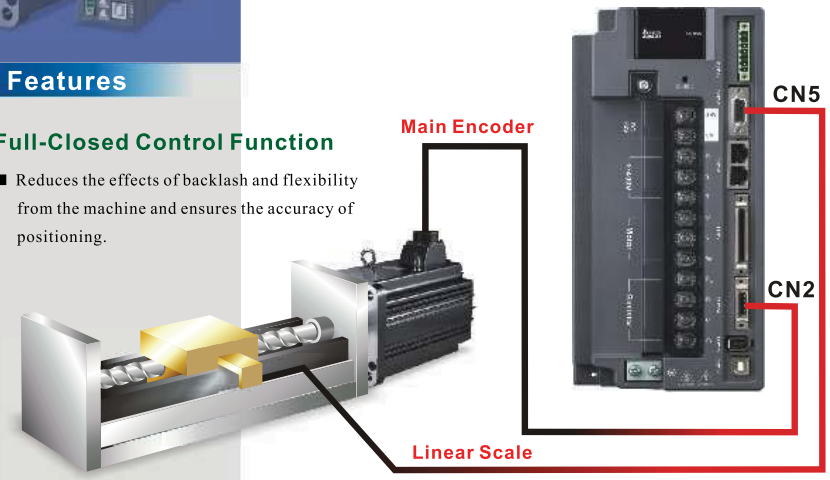


Introduction to the ASDA-A2 Series

Features

● Full-Closed Control Function

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

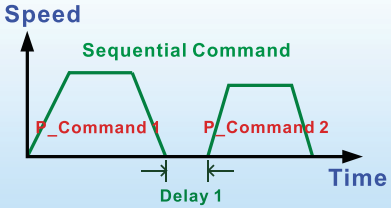


● Electronic Cam (E-Cam) Function

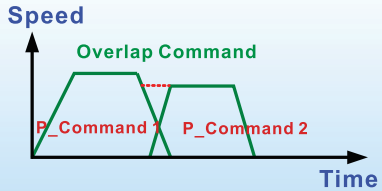
■ 720 points max. for E-Cam outline.
■ Smooth interpolation between points can be completed automatically to yield a flexible programming.
■ ASDA-Soft configuration software supported.
■ Easy to use for flying shear, rotary cut, and other cam applications.

● Versatile PR Mode

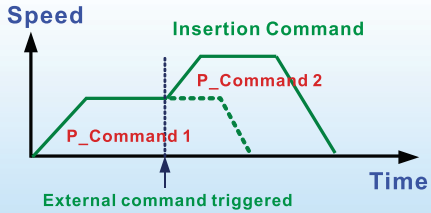
■ ASDA-Soft configuration software supported.
■ New sub-modes supported, not traditional point-to-point control.
■ 64 procedures can be applied.
■ Motion profile can be changed instantaneously.
■ 35 Homing modes / Jump mode / Write parameter mode / Constant speed mode / Position control mode supported.



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.

Introduction to the ASDA-A2 Series

Features

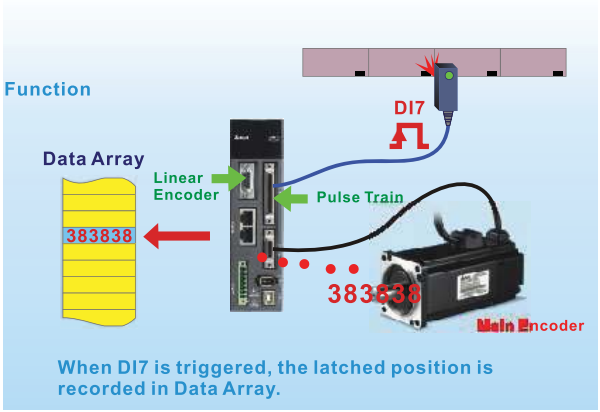
Capture and Compare Functions

Capture - Position Latch Function

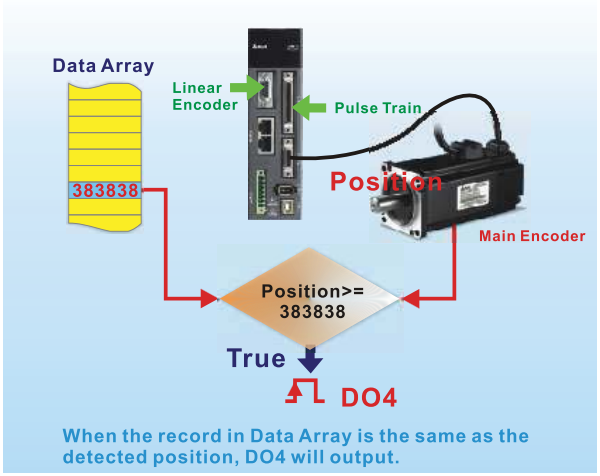
- Latches the coordinate value on the reference axis.
- Response time is less than 5us.
- It can be used to do mark tracing.
- Maximum 800 records

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



When DI7 is triggered, the latched position is recorded in Data Array.

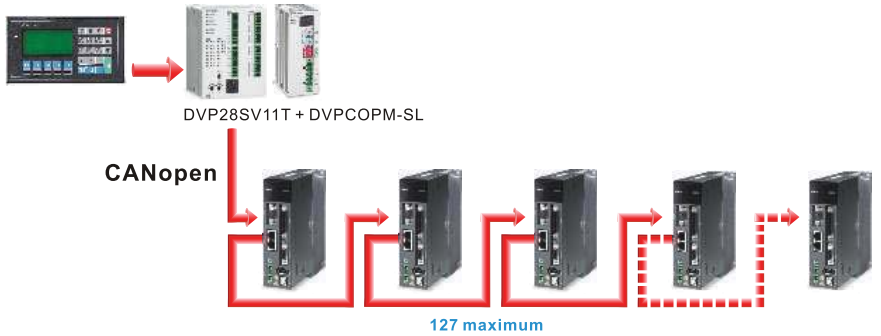


When the record in Data Array is the same as the detected position, DO4 will output.

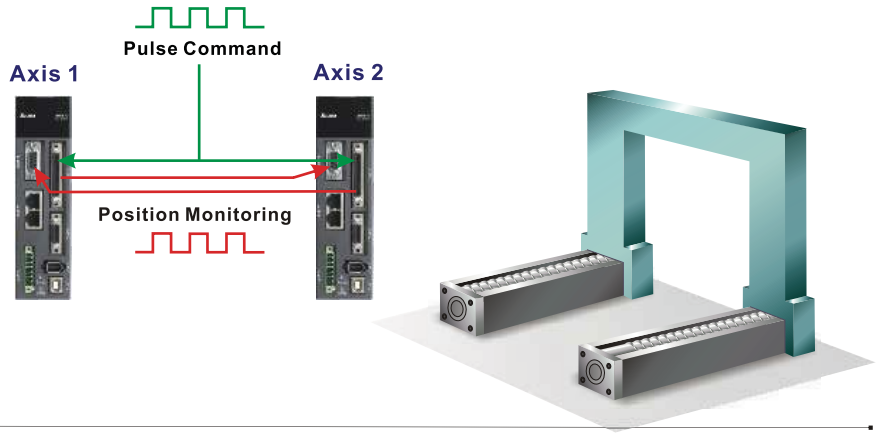
Supports CANopen Protocol

- 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



Introduction to the ASDA-A2 Series

Product Line-up

220V Series

★ ASDA-A2 200V 11kW and 15kW models will be available soon.

Servo Drive






100W	0.2kW	0.4kW	0.75kW	1.0kW	1.5kW	2kW	3kW	4.5kW	5.5kW	7.5kW
ASD-A2-0121-□	ASD-A2-0221-□	ASD-A2-0421-□	ASD-A2-0721-□	ASD-A2-1021-□	ASD-A2-1521-□	ASD-A2-2023-□	ASD-A2-3023-□	ASD-A2-4523-□	ASD-A2-5523-□	ASD-A2-7523-□

Servo Drive











ECMA-C10401□S	ECMA-C10602□S	ECMA-C10604□S ECMA-C10804□7 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	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).

Introduction to the ASDA-A2 Series

ASDA-A2

Product Line-up

400V Series

★ ASDA-A2 400V 7.5kW, 11kW and 15kW models will be available soon.
The models above 15kW are in the process of development.

Servo Drive

750W	1000W	1500W	2000W	3000W	4500W	5500W
ASD-A2-0743-□	ASD-A2-1043-□	ASD-A2-1543-□	ASD-A2-2043-□	ASD-A2-3043-□	ASD-A2-4543-□	ASD-A2-5543-□

Servo Drive

ECMA-J10807□S	ECMA-K11310□S	ECMA-K11315□S	ECMA-K11320□S	ECMA-L11830□S	ECMA-L11845□S	ECMA-L11855□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

ASD - A2 - 04 21 - M

- ASD: Product Name : AC Servo Drive
- A2: Series : A2
- 04: Rated Output Power
  - 01:100W 20:2kW
  - 02:200W 30:3kW
  - 04:400W 45:4.5kW
  - 07:750W 55:5.5kW
  - 10:1kW 75:7.5kW
  - 15:1.5kW 1B:11kW
  - 1F:15kW
- 21: Input Voltage and Phase
  - 21 : 220V 1-phase / 3-phase
  - 23 : 220V 3-phase
  - 43 : 400V 3-phase
- M: Model Type (see the table below)

● Model Type

Type	Full-Closed Control	CANopen	DMCNET	Extension Digital Input	Electronic Cam (E-Cam)
F	Yes	No	Yes	No	No
M	Yes	Yes	No	No	Yes
U	Yes	No	No	Yes	Yes
L	Yes	No	No	No	No

F: For DMCNET U: Without CANopen
M: Support CANopen L: Without E-Cam

● ECMA Series Servo Motors

ECM A - C1 06 02 E S

- ECM: Product Name
  ECM: Electrical Commutation Motor
- A: Driving Type
  A: AC Servo Motor
- C1: Series
  Rated Voltage / Rated Speed
  C : 220V / 3000r/min E : 220V / 2000r/min
  F : 220V / 1500r/min G : 220V / 1000r/min
  J : 400V / 3000r/min K : 400V / 2000r/min
  L : 400V / 1500r/min
  Sensor Type
  1: Incremental encoder, 20-bit
  A: Absolute encoder (available soon)
- 06: Motor Frame Size
  04 : 40mm 10 : 100mm
  06 : 60mm 13 : 130mm
  08 : 80mm 18 : 180mm
  09 : 86mm
- 02: Rated Output Power
  01: 100W 09: 900W
  02: 200W 10: 1kW
  03: 300W 15: 1.5kW
  04: 400W 20: 2kW
  05: 500W 30: 3kW
  06: 600W 45: 4.5kW
  07: 750W 55: 5.5kW
  1B:11kW 75: 7.5kW
  1F:15kW
- E: Shaft Type and Oil Seal

Shaft Type and Oil Seal	W/O Brake W/O Oil Seal	With Brake W/O Oil Seal	W/O Brake With Oil Seal	With Brake With Oil Seal
Round Shaft (with screw hole)	A	B	C	D
Keyway	E	F	G	H
Keyway (with screw hole)	P	Q	R	S

- S: Standard Shaft Dimension: S
  Specified Shaft Dimension:
  7=14mm
  3=42mm

ECMA Series Servo Motors

ASDA-A2

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 7.5kW and 380V to 480V ASDA-A2 400V series AC servo drives from 750W to 5.5kW.

For the 220V series, there are 40mm, 60mm, 80mm, 86mm, 100mm, 130mm and 180mm seven 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 119.36 N-m.

For the 400V series, there are 80mm, 130mm and 180mm 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 119.36 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.

Specifications - Low Inertia Series

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 ($x10^{-4}$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 (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	CE, cULus								

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

ECMA Series Servo Motors

ASDA-A2

Specifications - Medium / High Inertia Series

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 ($\times 10^{-4}$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 ($\times 10^{-4}$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	CE, cULus			

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

Specifications - Medium / High Inertia Series

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 ($\times 10^{-4}$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 ($\times 10^{-4}$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 [Nt-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	CE, cULus				

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

ECMA Series Servo Motors

ASDA-A2

Specifications - Medium / Medium-High Inertia Series

220V Series

Model: ECMA Series	F118			
	30	45	55	75
Rated output power (kW)	3.0	4.5	5.5	7.5
Rated torque (N-m)*1	19.10	28.65	35.01	47.74
Maximum torque (N-m)	57.29	71.62	87.53	119.36
Rated speed (r/min)	1500			
Maximum speed (r/min)	3000			
Rated current (A)	19.4	32.5	40.0	47.5
Maximum current (A)	58.2	81.3	100.0	118.8
Power rating (kW/s)	66.4	105.5	122.9	159.7
Rotor moment of inertia ($\times 10^{-4}$kg.m^2)(without brake)	54.95	77.75	99.78	142.7
Mechanical time constant (ms)	1.28	0.92	0.96	0.63
Torque constant-KT (N-m/A)	0.98	0.88	0.88	1.01
Voltage constant-KE (mV/(r/min))	35.0	32.0	31.0	35.5
Armature resistance (Ohm)	0.077	0.032	0.025	0.015
Armature inductance (mH)	1.27	0.89	0.60	0.40
Electrical time constant (ms)	16.5	27.8	24.0	26.7
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	40.5
Weight (kg) (with brake)	22.5	29	36	46
Max. radial shaft load (N)	1470	1470	1764	1764
Max. thrust shaft load (N)	490	490	588	588
Power rating (kW/s) (with brake)	63.9	101.8	119.4	156.6
Rotor moment of inertia ($\times 10^{-4}$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
Brake power consumption (at 20°C) [W]	20.4	20.4	20.4	20.4
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	CE, cULus			

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

Specifications - Medium / Low Inertia Series

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 ($\times 10^{-4}$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 ($\times 10^{-4}$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	CE, cULus			

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

ECMA Series Servo Motors

ASDA-A2

Specifications - Medium / High Inertia Series

400V Series

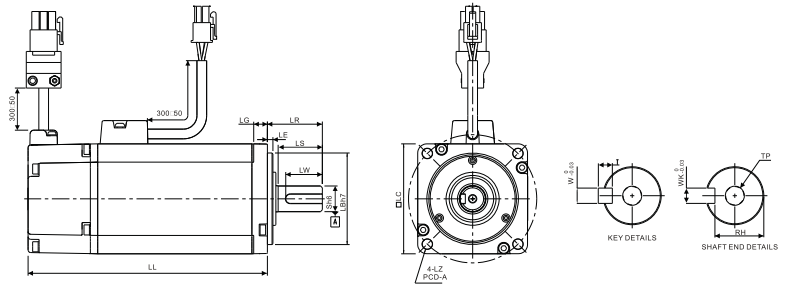
Model: ECMA Series	L118		
	30	45	55
Rated output power (kW)	3.0	4.5	5.5
Rated torque (N-m)*1	19.10	28.65	35.0
Maximum torque (N-m)	57.29	71.62	87.53
Rated speed (r/min)	1500		
Maximum speed (r/min)	3000		
Rated current (A)	11.9	20.0	22.37
Maximum current (A)	35.7	50	56
Power rating (kW/s)	66.4	105.5	122.9
Rotor moment of inertia ($\times 10^{-4}$kg.m^2)(without brake)	54.95	77.75	99.78
Mechanical time constant (ms)	1.11	0.92	0.88
Torque constant-KT (N-m/A)	1.66	1.43	1.50
Voltage constant-KE (mV/(r/min))	60.54	55.63	57.99
Armature resistance (Ohm)	0.19	0.09	0.07
Armature inductance (mH)	4.8	2.7	2.55
Electrical time constant (ms)	24.7	30	31.7
Insulation class	---		
Insulation resistance	100MΩ , DC 500V		
Insulation strength	AC 1800 V, 50Hz, 60seconds		
Weight (kg) (without brake)	18.5	23.5	30.5
Weight (kg) (with brake)	22.5	29	36
Max. radial shaft load (N)	1470	1470	1764
Max. thrust shaft load (N)	490	490	588
Power rating (kW/s) (with brake)	63.9	101.8	119.1
Rotor moment of inertia ($\times 10^{-4}$kg.m^2)(with brake)	57.06	80.65	102.70
Mechanical time constant (ms) (with brake)	1.16	0.95	0.91
Brake holding torque [Nt-m (min)]	25.0	40.0	55.0
Brake power consumption (at 20°C) [W]	20.4	15.1	21
Brake release time [ms (Max)]	10	10	10
Brake pull-in time [ms (Max)]	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	CE, cULus		

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: Aluminum F40~48

Dimensions

220V Series

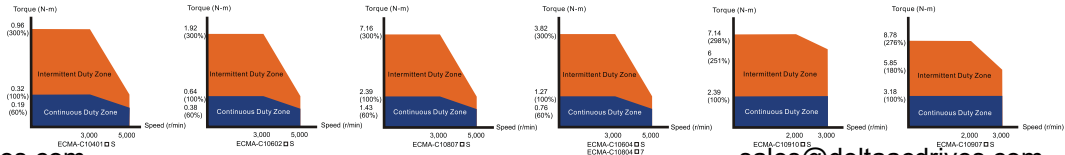
Frame Size 80mm and below (Units: mm)



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)



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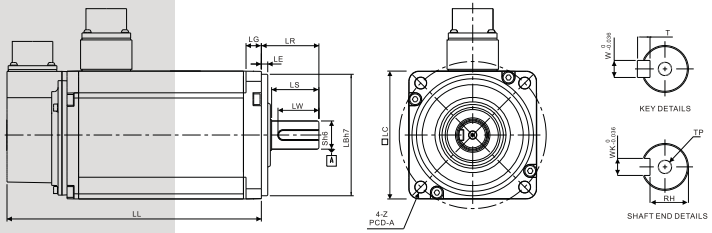
ECMA Series Servo Motors

ASDA-A2

Dimensions

220V Series

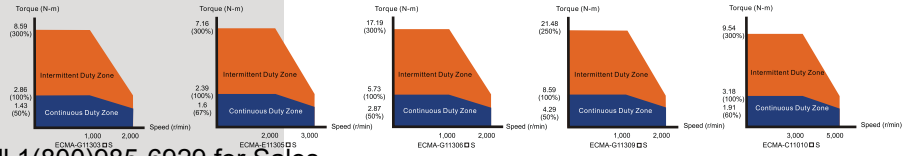
Frame Size 100mm and 130mm (Units: mm)



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).

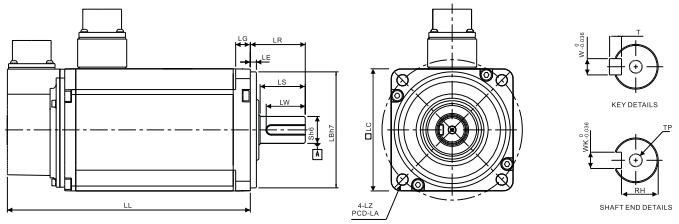
TSpeed-Torque Curves (T-N Curves)



Dimensions

220V Series

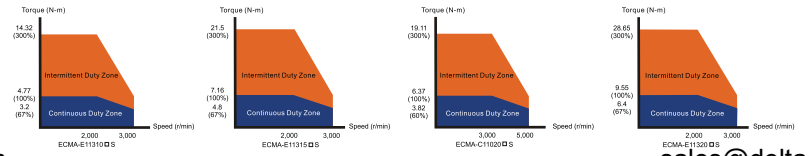
Frame Size 100mm and 130mm (Units: mm)



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)



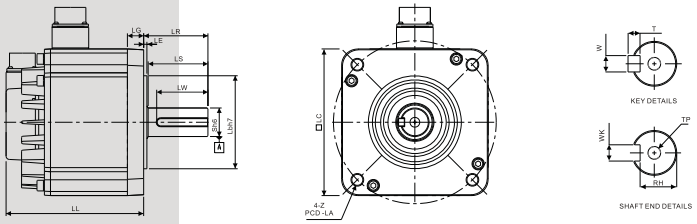
ECMA Series Servo Motors

ASDA-A2

Dimensions

220V Series

Frame Size 180mm (Units: mm)



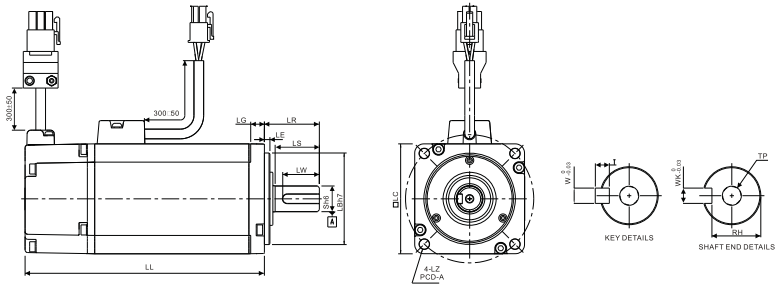
Model	E11820□S	E11830□S	F11830□S	F11845□S	F11855□3	F11875□3
LC	180	180	180	180	180	180
LZ	13.5	13.5	13.5	13.5	13.5	13.5
LA	200	200	200	200	200	200
S	35 $(^{+0}_{-0.016})$	35 $(^{+0}_{-0.016})$	35 $(^{+0}_{-0.016})$	35 $(^{+0}_{-0.016})$	42 $(^{+0}_{-0.016})$	42 $(^{+0}_{-0.016})$
LB	114.3 $(^{+0}_{-0.035})$	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 $_{-0.036}^{0}$	10 $_{-0.036}^{0}$	10 $_{-0.036}^{0}$	10 $_{-0.036}^{0}$	12 $_{-0.043}^{0}$	12 $_{-0.043}^{0}$
W	10 $_{-0.036}^{0}$	10 $_{-0.036}^{0}$	10 $_{-0.036}^{0}$	10 $_{-0.036}^{0}$	12 $_{-0.043}^{0}$	12 $_{-0.043}^{0}$
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).

Dimensions

400V Series

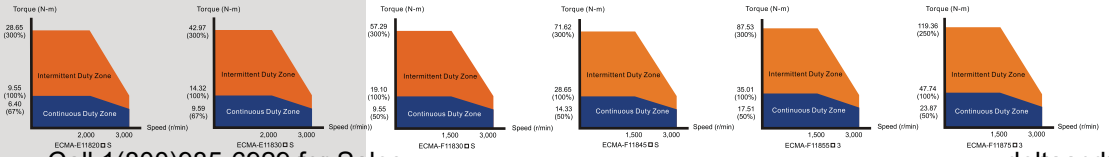
Frame Size 80mm and below (Units: mm)



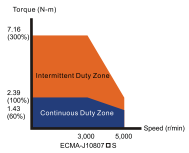
Model	J10807□S
LC	80
LZ	6.6
LA	90
S	19 $(^{+0}_{-0.013})$
LB	70 $(^{+0}_{-0.030})$
LL（W/O Brake）	138.3
LL（With Brake）	178
Ls（W/O Oil Seal）	32
Ls（With Oil Seal）	29.5
LR	35
LE	3
LG	8
LW	25
RH	15.5
WK	6
W	6
T	6
TP	M6 Depth 20

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).

TSpeed-Torque Curves (T-N Curves)



Speed-Torque Curves (T-N Curves)



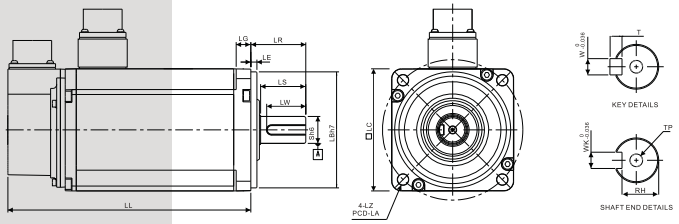
ECMA Series Servo Motors

ASDA-A2

Dimensions

400V Series

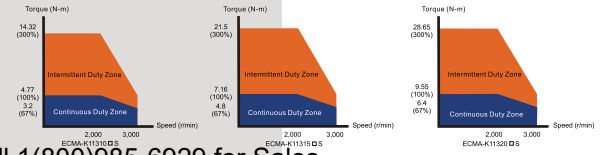
Frame Size 100mm and 130mm (Units: mm)



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).

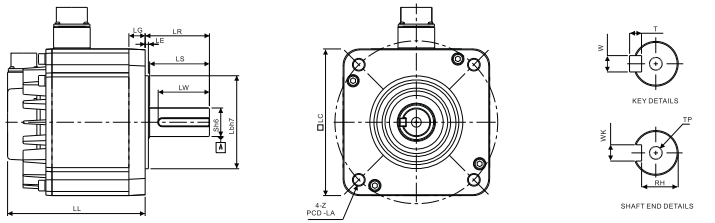
TSpeed-Torque Curves (T-N Curves)



Dimensions

400V Series

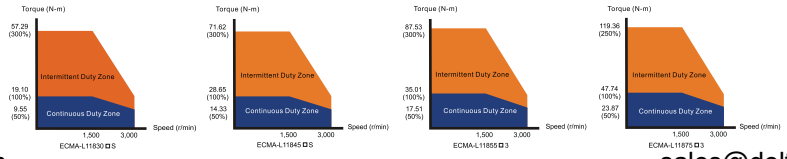
Frame Size 180mm (Units: mm)



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



ASDA-A2 Series Servo Drives

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.

● *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.

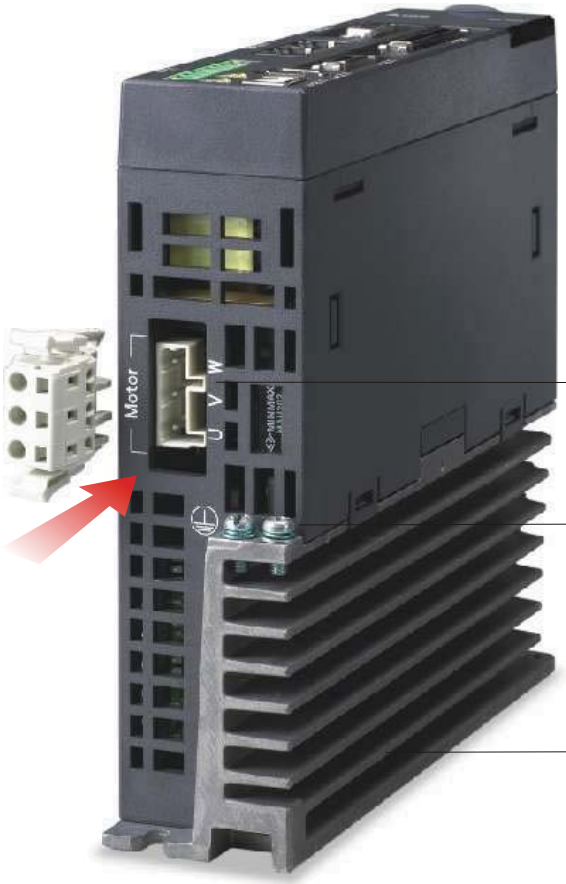
● Internal & External Regenerative Resistor Terminal / Control Circuit Terminal / Main Circuit Terminal

■ Internal & External Regenerative Resistor Terminal
1. When using an external resistor, connect it to P⊕ and C , and ensure an open circuit between P⊕ and D.
2. When using an internal resistor, ensure the circuit is closed between P⊕ and D, and the circuit is open between P⊕ 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⊕ and⊖ , and ensure an open circuit between P⊕ and D, and P⊕ 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 ±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⊕ and⊖ .



● 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.

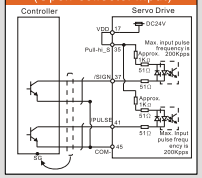
ASDA-A2 Series Servo Drives

Standard Connection Examples

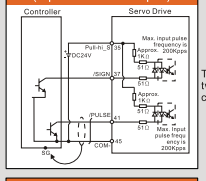
220V Series

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

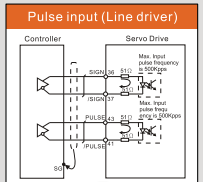
Pulse input, for the use of internal power supply (Open-collector input)



Pulse input, for the use of external power supply (Open-collector input)

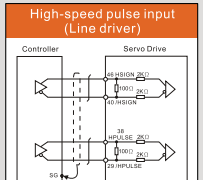


Pulse input (Line driver)

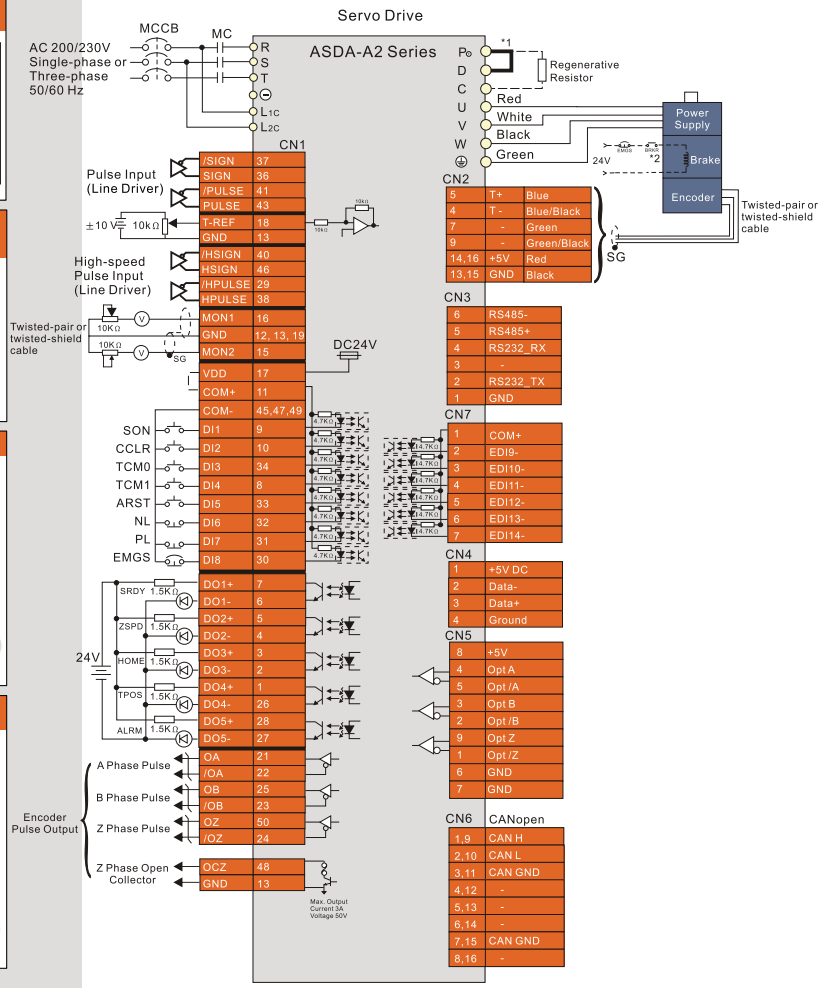


Caution: Because this photocoupler is an undirectional optocoupler, please pay close attention on the current direction of input pulse command.

High-speed pulse input (Line driver)



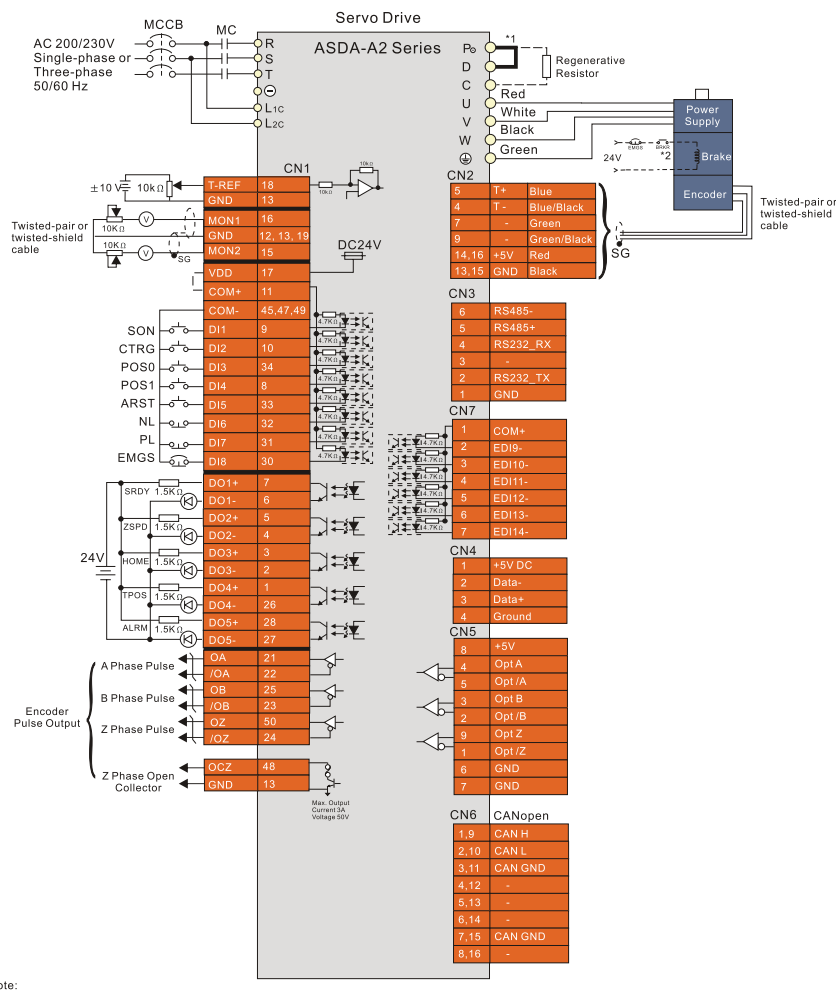
Caution: Ensure that the ground terminal of the controller and the servo drive are connected to each other.



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)**



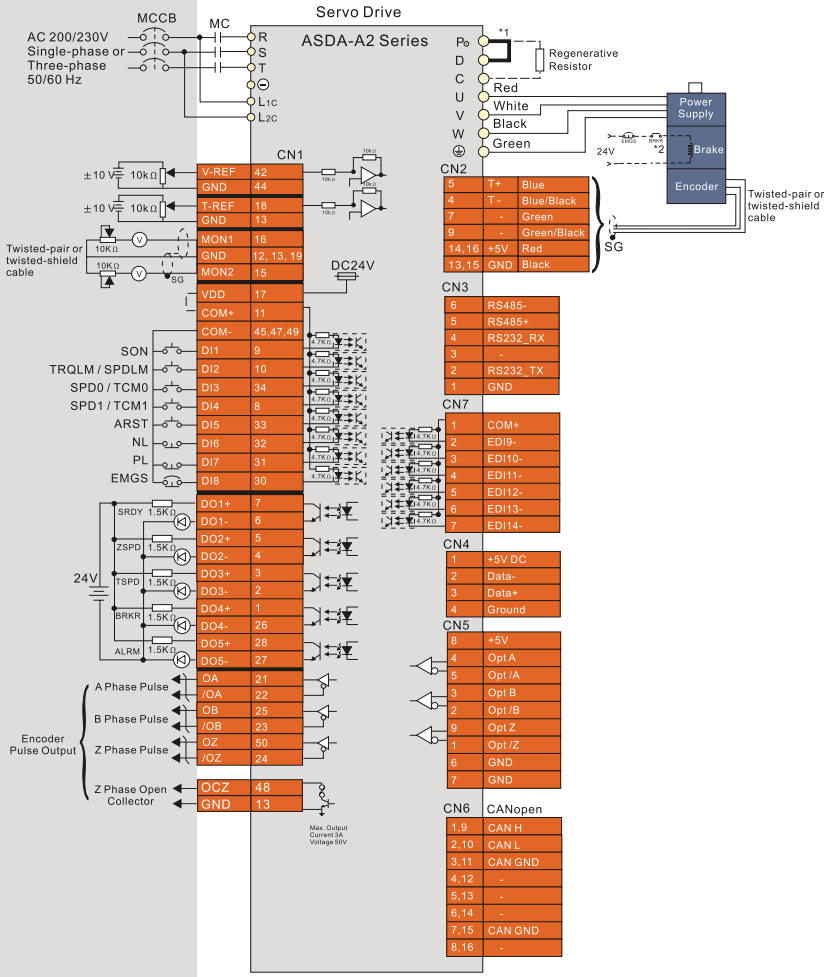
Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

ASDA-A2 Series Servo Drives

Standard Connection Examples

220V Series

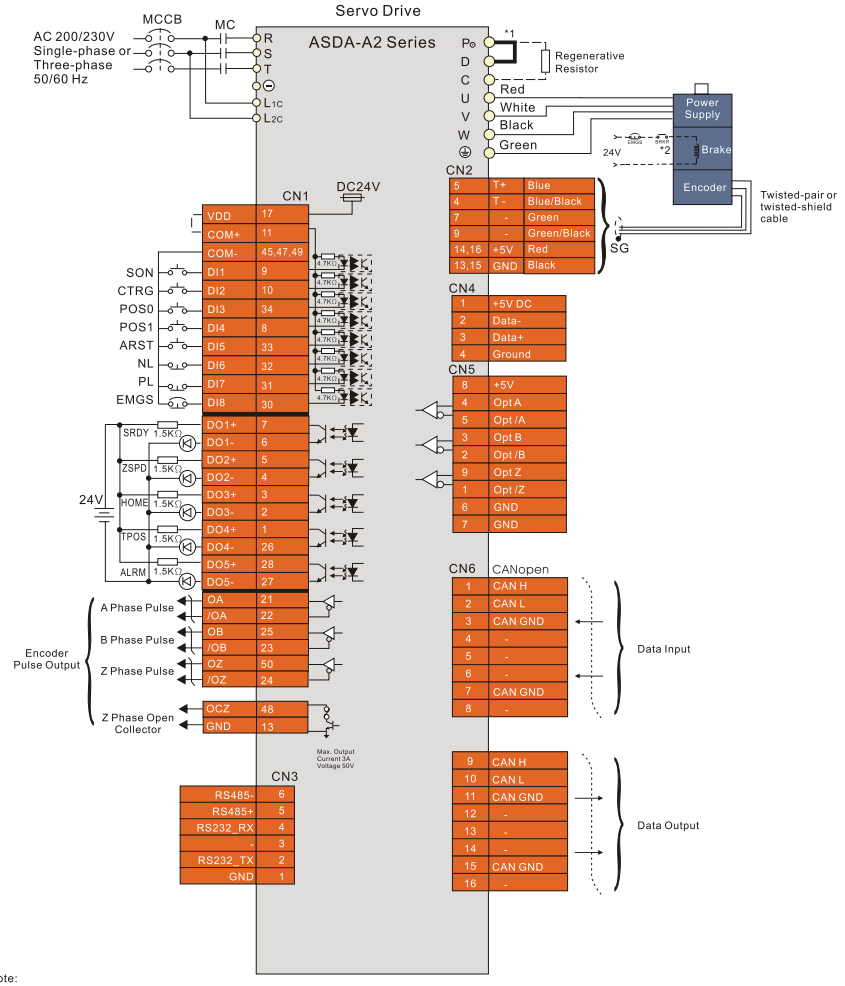
- **Speed(S), Torque(T) Control Mode (for Analog Voltage Input and Internal Parameter Setting)**



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.

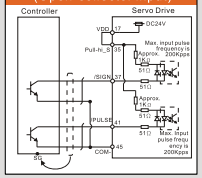
ASDA-A2 Series Servo Drives

Standard Connection Examples

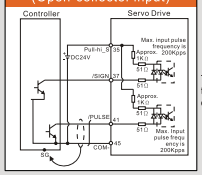
400V Series

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

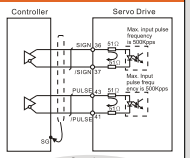
Pulse input, for the use of internal power supply (Open-collector input)



Pulse input, for the use of external power supply (Open-collector input)

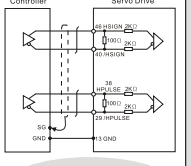


Pulse input (Line driver)

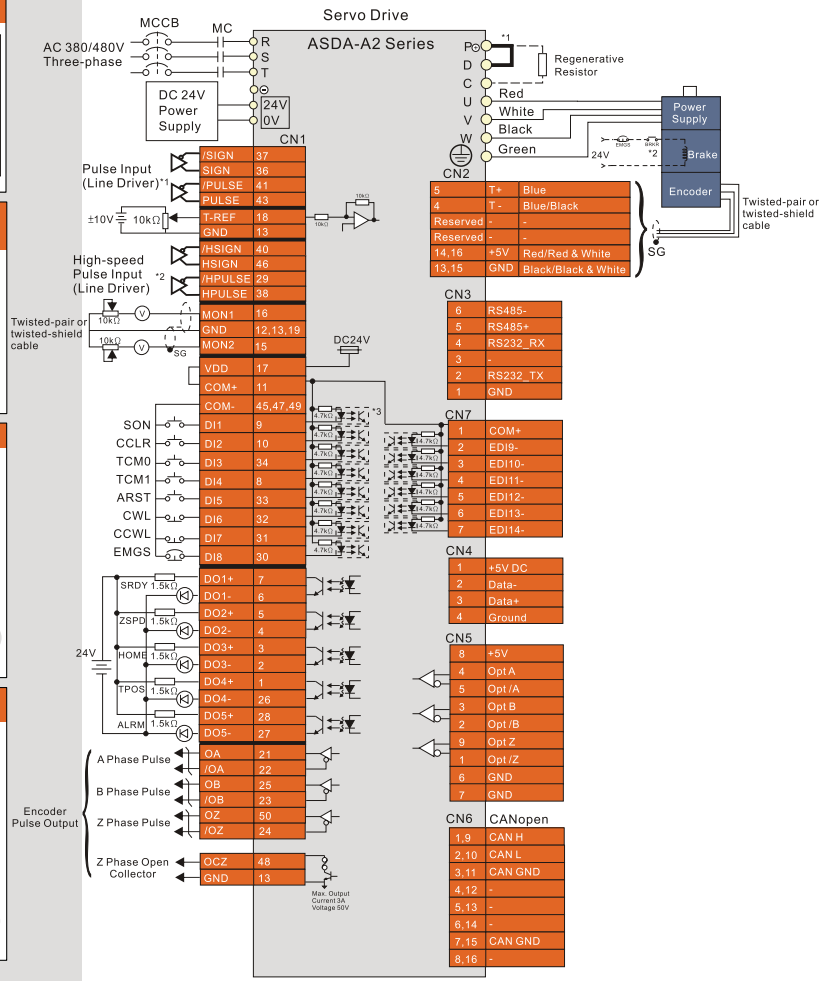


Caution: Because this photocoupler is an undirectional optocoupler, please pay close attention on the current direction of input pulse command.

High-speed pulse input (Line receiver)



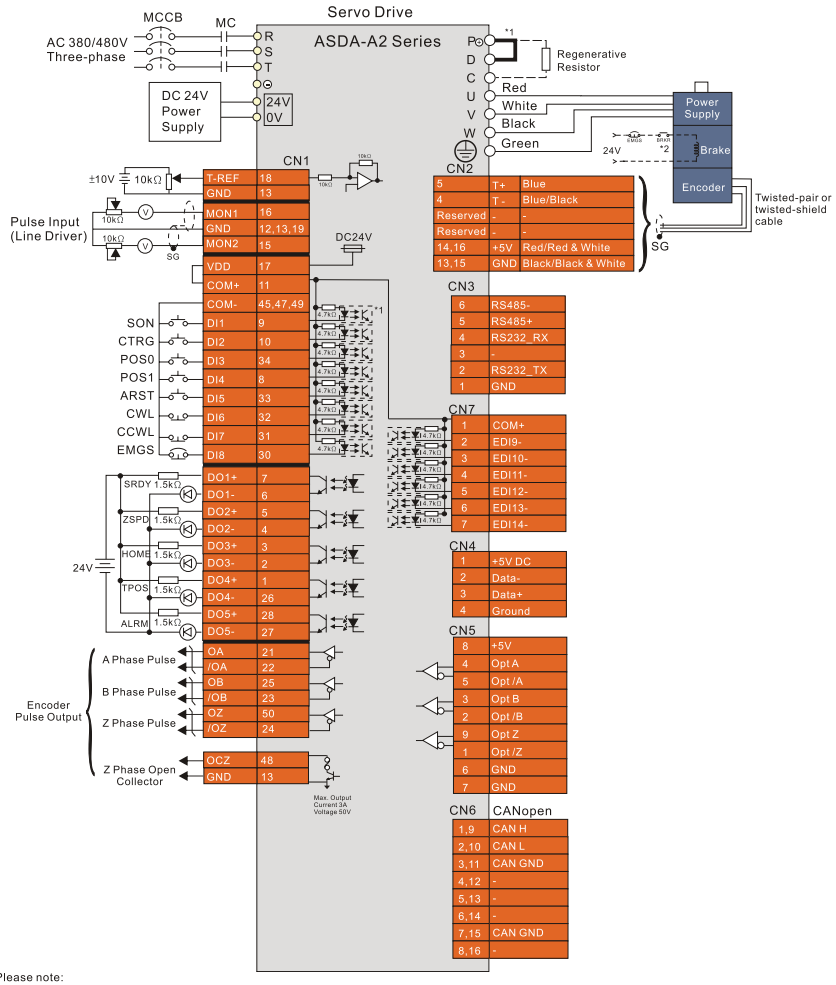
Caution: Ensure that the ground terminal of the controller and the servo drive are connected to each other.



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

400V Series

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

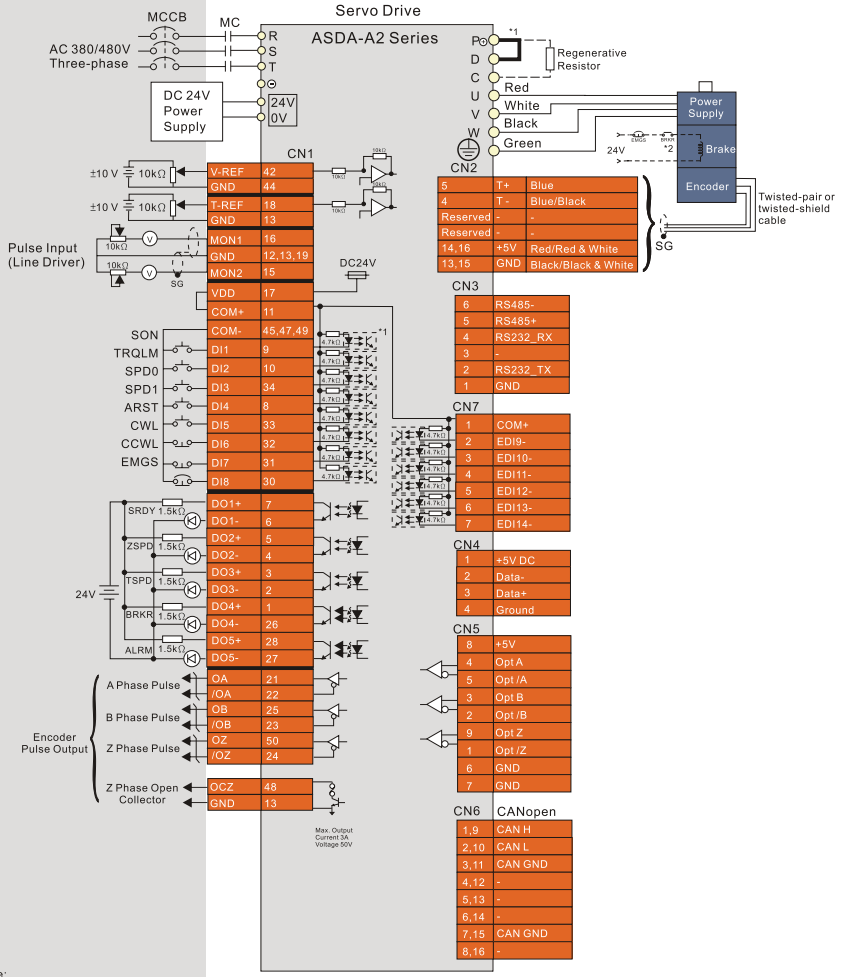


Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

Standard Connection Examples

400V Series

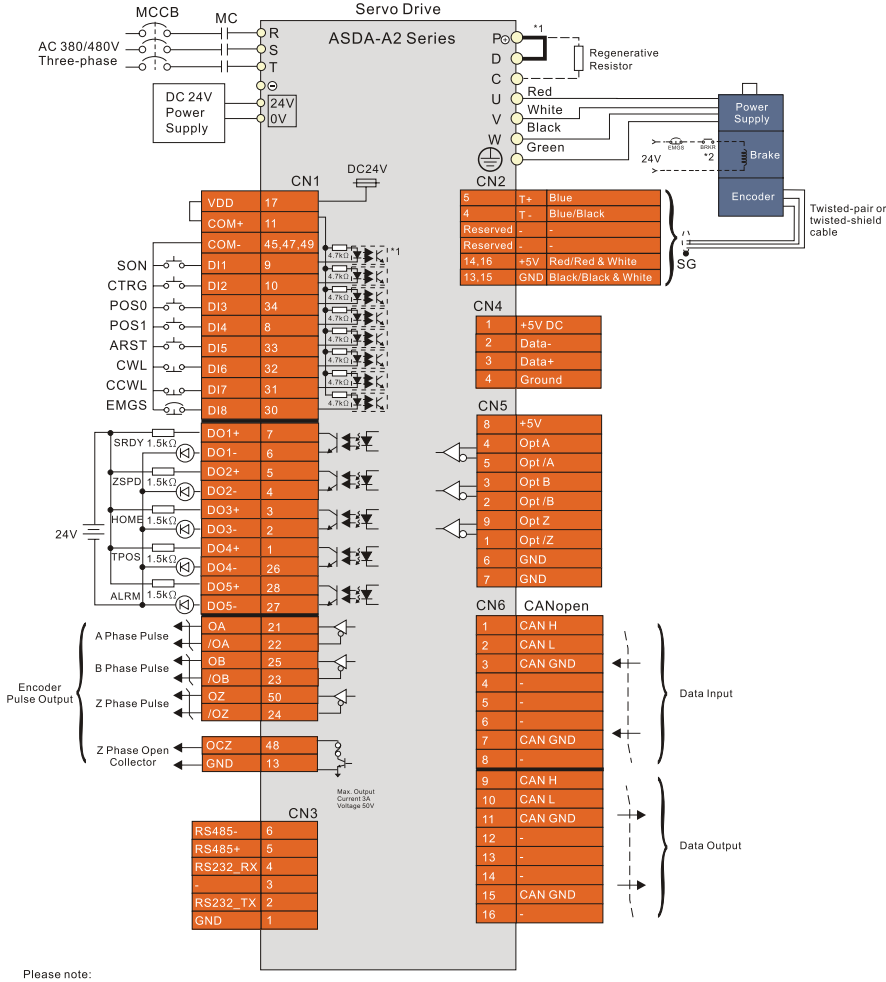
- **Speed(S), Torque(T) Control Mode (for Analog Voltage Input and Internal Parameter Setting)**



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

400V Series

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

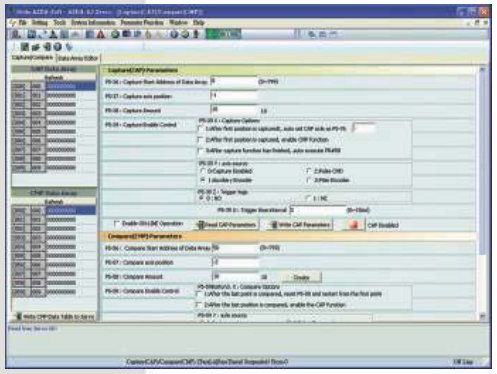


Please note:
*1 400W ~ 4.5kW servo drives provide a built-in regenerative resistor.
*2 The brake oil has no polarity.

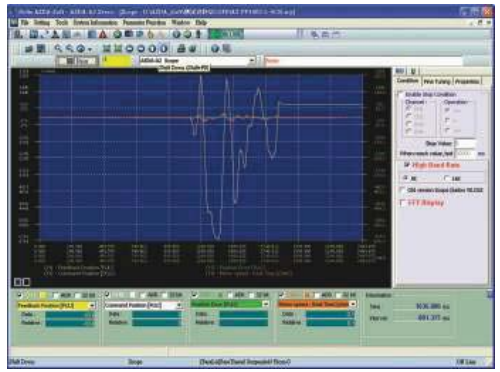
ASDA-SOFT Configuration Software

ASDA-A2

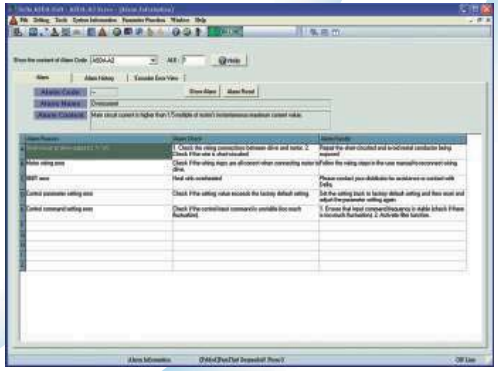
Features



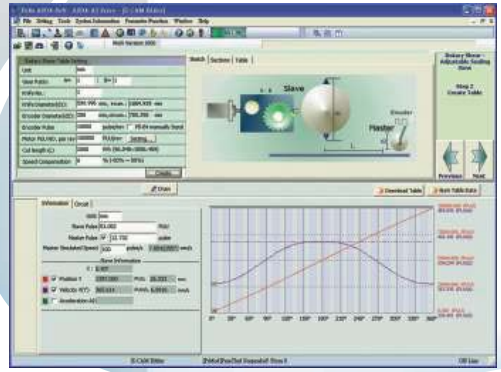
■ Strong CAPTURE and COMPARE functions for position latch and detection help you complete system configuration quickly.



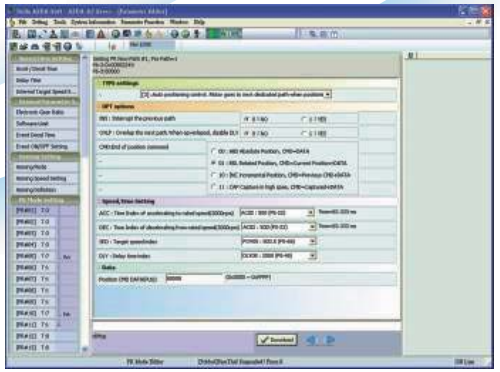
■ Versatile on-line monitoring function, similar to a digital oscilloscope is able to quickly record the status and data of each axis. Real-time monitoring is easy.



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



■ 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 .



■ 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.

ASDA-A2 Series Optional Accessories

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 62.

• 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.

ASDA-A2 Series Servo Drives

Specifications

220V Series

ASDA-A2 Series			100W	200W	400W	750W	1kW	1.5kW	2kW	3kW	4.5kW	5.5kW	7.5kW
			01	02	04	07	10	15	20	30	45	55	75
Power supply	Phase / Voltage		Thee-Phase or Single-Phase 220VAC						Thee-Phase 220VAC				
	Permissible Voltage Range		Thee-Phase or Single-Phase 200~230VAC, -15%~10%						Thee-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
Cooling System			Natural Air Circulation			Fan Cooling							
Encoder Resolution/Feedback Resolution			20-bit (1280000 p/rev)										
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 procedures (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										
	Analog Input Command	Voltage Range	0~±10 VDC										
		Input Resistance	10K Ω										
		Time Constant	2.2 μs										
Speed Control Mode	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										
	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°C to 50°C ambient temperature fluctuation										
Torque Control Mode	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, 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, Full-closed loop excessive deviation, 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										
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 to 90% (non-condensing)										
	Vibration		9.80665m/s² (1G) less than 20Hz, 5.88m/ s² (0.6G) 20 to 50Hz										
	IP Rating		IP20										
	Power System		TN System*3										
	Approvals		CE UL 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 point by a protective earth conductor.

400V Series

ASDA-A2 Series			750W	1kW	1.5kW	2kW	3kW	4.5kW	5.5kW
			07	10	15	20	30	45	55
Power supply	Phase / Voltage		24VDC, ±10%						
	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
Cooling System			Fan Cooling						
Encoder Resolution/Feedback Resolution			20-bit (1280000 p/rev)						
Control of Main Circuit			SVPWM (Space Vector Pulse Width Modulation) Control						
Tuning Modes			Auto / Manual						
Dynamic Brake			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 procedures (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						
	Analog Input Command	Voltage Range	0~±10 VDC						
		Input Resistance	10K Ω						
		Time Constant	2.2 μs						
Speed Control Mode	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						
	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°C to 50°C ambient temperature fluctuation						
Torque Control Mode	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, 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						
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/s² (1G) less than 20Hz, 5.88m/ s² (0.6G) 20 to 50Hz						
	IP Rating		IP20						
	Power System		TN System*3						
	Approvals		CE UL IEC / EN 61800-5-1						

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 point by a protective earth conductor.

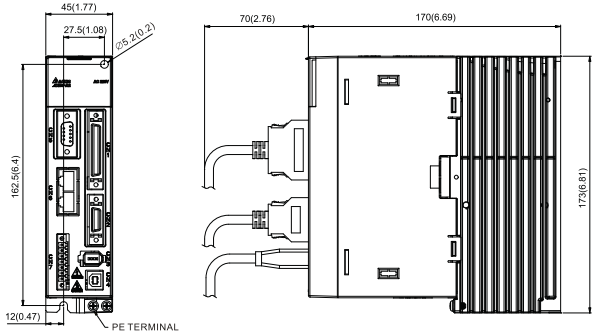
ASDA-A2 Series Servo Drives

Dimensions

220V Series

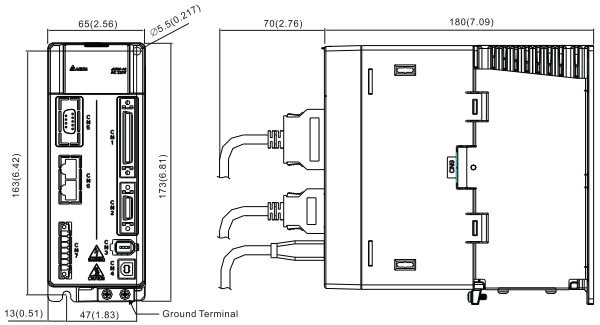
100W / 200W / 400W

Weight
1.5 (3.3)



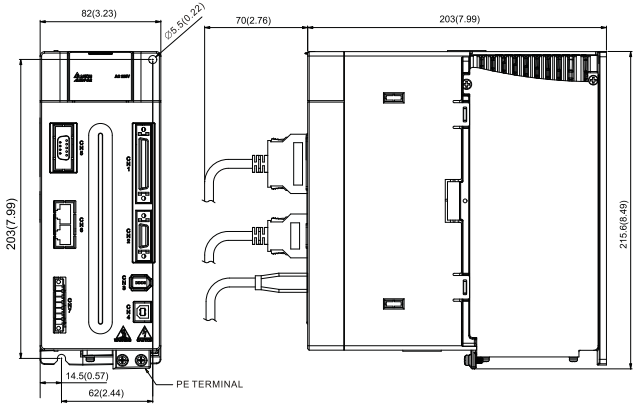
750W / 1.0kW / 1.5kW

Weight
2.0 (4.4)



2.0kW / 3.0kW

Weight
2.89 (6.36)

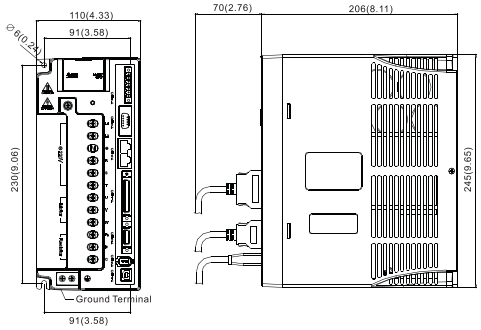


Dimensions

220V Series

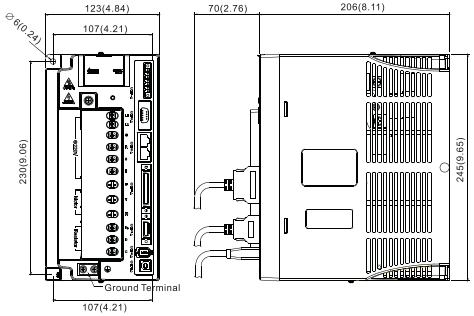
4.5kW

Weight
4.4 (10.0)



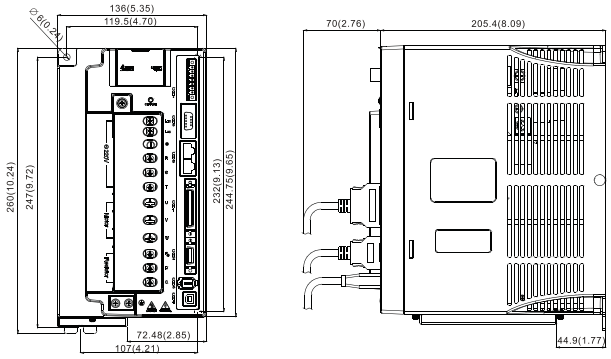
5.5kW

Weight
5.5 (12.1)



7.5kW

Weight
5.9 (13.0)



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.

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.

Call 1(800)985-6929 for Sales deltaacdrives.com sales@deltaacdrives.com

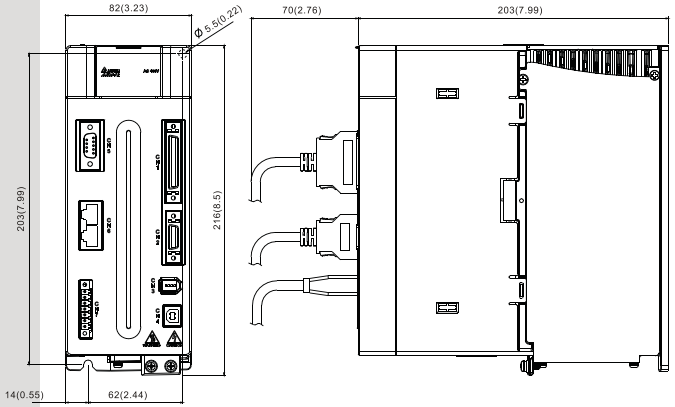
ASDA-A2 Series Servo Drives

Dimensions

400V Series

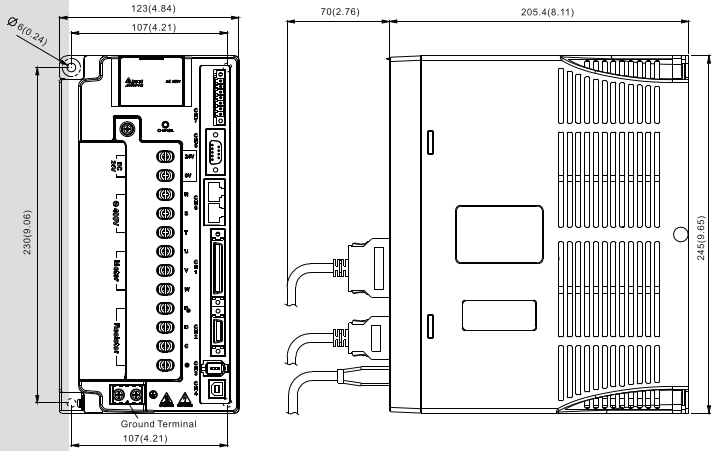
750W / 1.0kW / 1.5kW

Weight
2.89(6.36)



2.0kW / 3.0kW / 4.5kW/5.5kW

Weight
5.5 (12.1)



ASDA-A2 Optional Accessories

Power Connectors

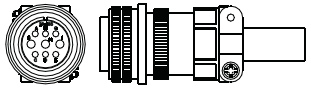
ASDBCAPW0000

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

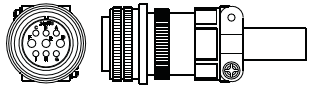
ASDBCAPW0100

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

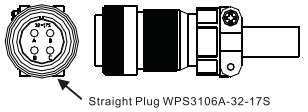
ASD-CAPW1000



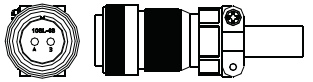
ASD-CAPW2000



ASD-CAPW4000

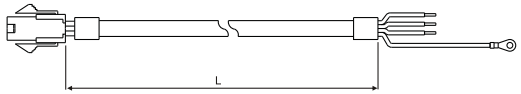


ASD-CNBR1000



Power Cables

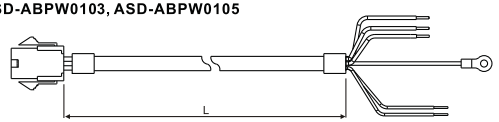
ASD-ABPW0003, ASD-ABPW0005



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

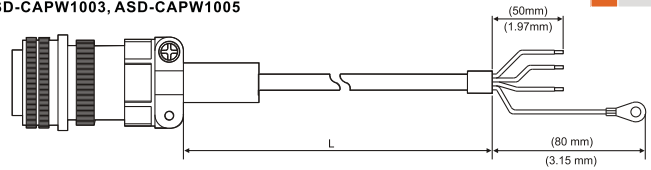
ASD-ABPW0103, ASD-ABPW0105



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-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

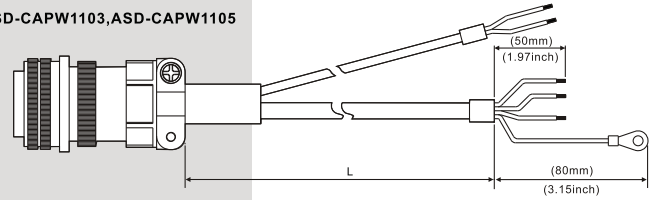
NOTE 1) Other accessories for ASDA-A2 series will be increased gradually.
2) The appearance of the wiring cables here may differ from actual product appearance. Please refer to the actual product appearance.

ASDA-A2 Optional Accessories

Optional Accessories

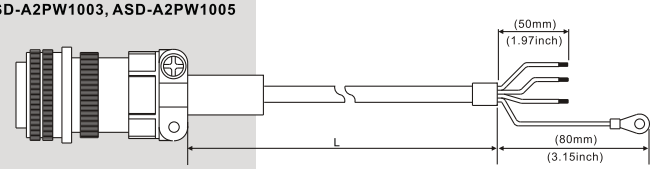
Power Cables

ASD-CAPW1103,ASD-CAPW1105



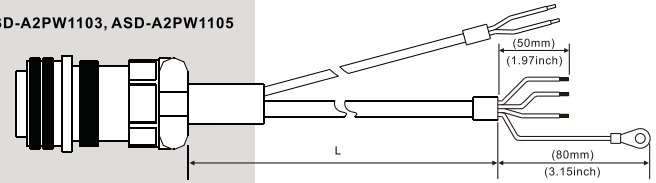
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW1103	3106A-20-18S	3000±100	118±4
2	ASD-CAPW1105	3106A-20-18S	5000±100	197±4

ASD-A2PW1003, ASD-A2PW1005



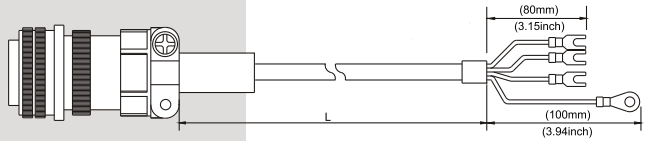
Item	Part No.	Straight	L	
			mm	inch
1	ASD-A2PW1003	3106A-20-18S	3000±100	118±4
2	ASD-A2PW1005	3106A-20-18S	5000±100	197±4

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

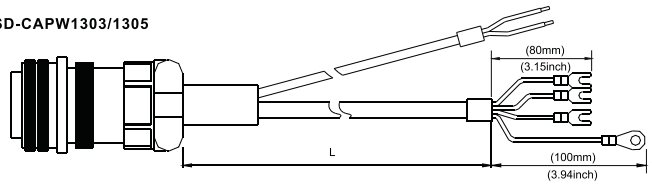
ASD-CAPW1203/1205



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

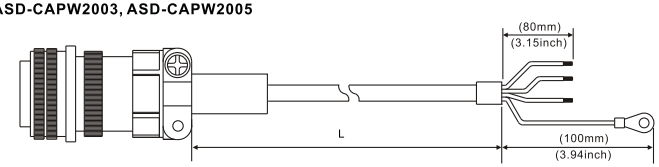
Power Cables

ASD-CAPW1303/1305



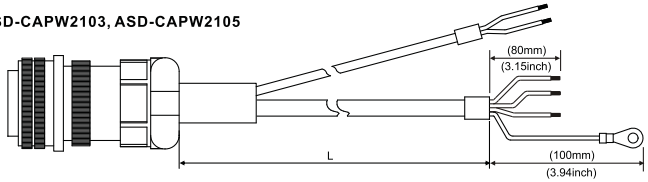
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW1303	3106A-20-18S	3000±100	118±4
2	ASD-CAPW1305	3106A-20-18S	5000±100	197±4

ASD-CAPW2003, ASD-CAPW2005



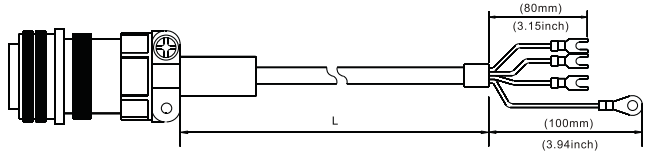
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW2003	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2005	3106A-24-11S	5000±100	197±4

ASD-CAPW2103, ASD-CAPW2105



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

ASD-CAPW2203, ASD-CAPW2205



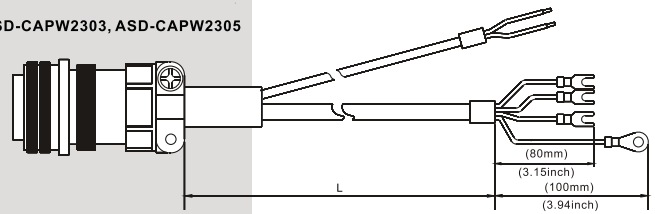
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW2203	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2205	3106A-24-11S	5000±100	197±4

ASDA-A2 Optional Accessories

Optional Accessories

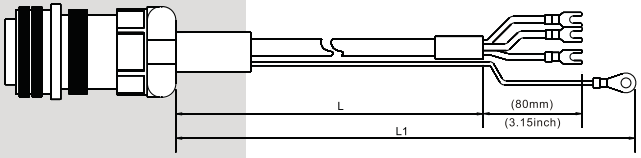
Power Cables

ASD-CAPW2303, ASD-CAPW2305



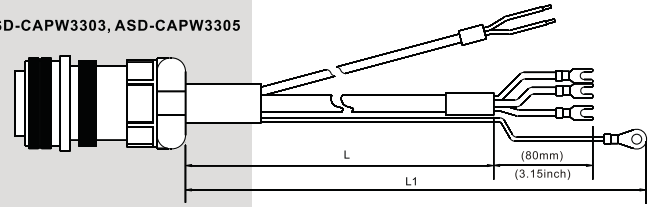
Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAPW2303	3106A-24-11S	3000±100	118±4
2	ASD-CAPW2305	3106A-24-11S	5000±100	197±4

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

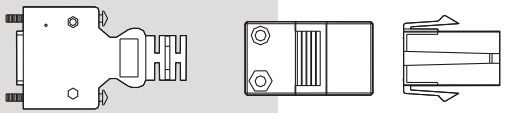
ASD-CAPW3303, ASD-CAPW3305



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

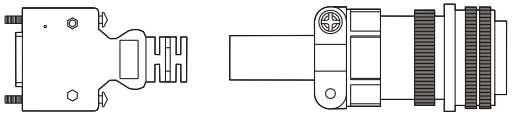
ASD-ABEN0000



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

Encoder Connectors

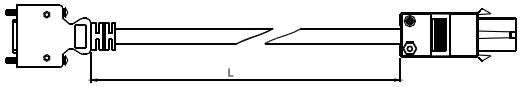
ASD-CAEN1000



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

Encoder Cables

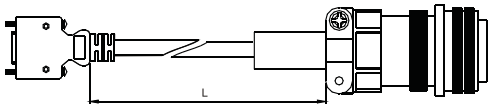
ASD-ABEN0003, ASD-ABEN0005



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	3000100	1184
2	ASD-ABEN0005	5000100	1974

ASD-CAEN1003, ASD-CAEN1005

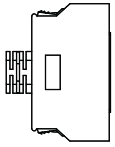


Title		Part No.	Manufacturer
MOTOR SIDE		3106A-20-29S	------
DRIVE SIDE	PLUG	3M 10120-3000PE	3M
	SHELL	3M 10320-52A0-008	3M

Item	Part No.	Straight	L	
			mm	inch
1	ASD-CAEN1003	3106A-20-29S	3000100	1184
2	ASD-CAEN1005	3106A-20-29S	5000100	1974

I/O Signal Connector (CN1)

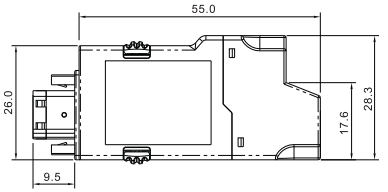
ASD-CNSC0050



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

RS-485 Connector

ASD-CNIE0B06

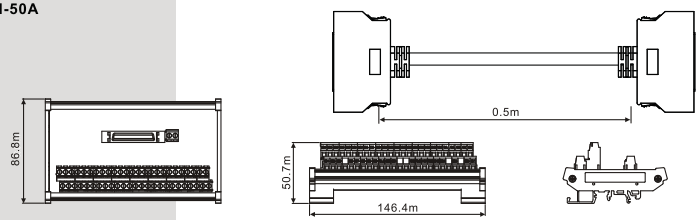


ASDA-A2 Optional Accessories

Optional Accessories

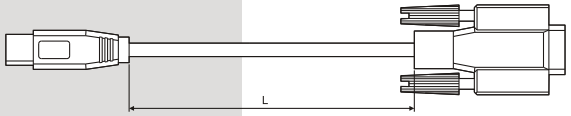
Terminal Block Module

ASD-BM-50A



RS-232 Communication Cable

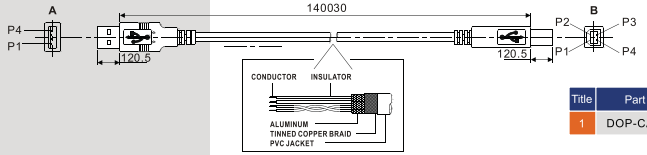
ASD-CARS0003



Item	Part No.	L	
		mm	inch
1	ASD-CARS0003	3000±100	118±4

Communication Cable between Drive and Computer (for PC)

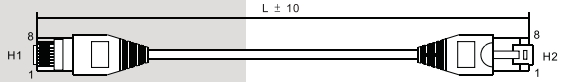
DOP-CAUSBAB



Title	Part No.	L	
		mm	inch
1	DOP-CAUSBAB	1400±30	55±1.2

CANopen Communication Cable

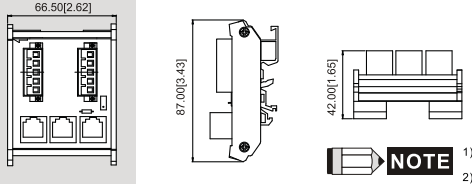
TAP-CB03, TAP-CB04



Title	Part No.	L	
		mm	inch
1	TAP-CB03	500±10	19±0.4
2	TAP-CB04	1000±10	39±0.4

CANopen Distribution Box

TAP-CN03



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, 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			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-ABPW0003	Power-Cables ASD-ABPW0005	Power-Cables ASD-ABPW0103	Power-Cables ASD-ABPW0105
	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005
Connector	Power Connectors ASDBCAPW0000		Power Connectors ASDBCAPW0100	
	Encoder Cables ASD-ABEN0000			

200W Servo Drive and 200W Low Inertia Servo Motor

Servo Drive	ASD-A2-0221-□			
Low Inertia Servo Motor	ECMA-C10602□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-ABPW0003	Power-Cables ASD-ABPW0005	Power-Cables ASD-ABPW0103	Power-Cables ASD-ABPW0105
	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005
Connector	Power Connectors ASDBCAPW0000		Power Connectors ASDBCAPW0100	
	Encoder Cables ASD-ABEN0000			

400W Servo Drive and 400W Low Inertia Servo Motor

Servo Drive	ASD-A2-0421-□			
Low Inertia Servo Motor	ECMA-C10604□S ECMA-C10804□7			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-ABPW0003	Power-Cables ASD-ABPW0005	Power-Cables ASD-ABPW0103	Power-Cables ASD-ABPW0105
	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005
Connector	Power Connectors ASDBCAPW0000		Power Connectors ASDBCAPW0100	
	Encoder Cables ASD-ABEN0000			

ASDA-A2 Optional Accessories

Servo Drive, Servo Motor and Accessories Combinations

220V Series

400W Servo Drive and 500W Medium Inertia Servo Motor

Servo Drive	ASD-A2-0421-□			
Medium Inertia Servo Motor	ECMA-E11305□ S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

400W Servo Drive and 300W High Inertia Servo Motor

Servo Drive	ASD-A2-0421-□			
High Inertia Servo Motor	ECMA-G11303□ S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

750W Servo Drive and 750W Low Inertia Servo Motor

Servo Drive	ASD-A2-0721-□			
Low Inertia Servo Motor	ECMA-C10807□ S			
	ECMA-C10907□ S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-ABPW0003	Power-Cables ASD-ABPW0005	Power-Cables ASD-ABPW0103	Power-Cables ASD-ABPW0105
	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005	Encoder Cables ASD-ABEN0003	Encoder Cables ASD-ABEN0005
Connector	Power Connectors ASDBCAPW0000		Power Connectors ASDBCAPW0100	
	Encoder Cables ASD-ABEN0000			

750W Servo Drive and 600W High Inertia Servo Motor

Servo Drive	ASD-A2-0721-□			
High Inertia Servo Motor	ECMA-G11306□ S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASDBCAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

1kW Servo Drive and 1kW Low Inertia Servo Motor

Servo Drive	ASD-A2-1021-□			
Low Inertia Servo Motor	ECMA-C11010□ S			
	ECMA-C10910□ S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

1kW Servo Drive and 1kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1021-□			
Medium Inertia Servo Motor	ECMA-E11310□ S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

ASDA-A2 Optional Accessories

Servo Drive, Servo Motor and Accessories Combinations

220V Series

1kW Servo Drive and 900W High Inertia Servo Motor

Servo Drive	ASD-A2-1021-□			
High Inertia Servo Motor	ECMA-G11309□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

1.5kW Servo Drive and 1.5kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1521-□			
Medium Inertia Servo Motor	ECMA-E11315□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

2kW Servo Drive and 2kW Low Inertia Servo Motor

Servo Drive	ASD-A2-2023-□			
Low Inertia Servo Motor	ECMA-C11020□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-A2PW1003	Power-Cables ASD-A2PW1005	Power-Cables ASD-A2PW1103	Power-Cables ASD-A2PW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

2kW Servo Drive and 2kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-2023-□			
Medium Inertia Servo Motor	ECMA-E11320□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-A2PW1003	Power-Cables ASD-A2PW1005	Power-Cables ASD-A2PW1103	Power-Cables ASD-A2PW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

2kW Servo Drive and 2kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-2023-□			
Medium Inertia Servo Motor	ECMA-E11820□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW2003	Power-Cables ASD-CAPW2005	Power-Cables ASD-CAPW2103	Power-Cables ASD-CAPW21055
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

3kW Servo Drive and 3kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-3023-□			
Medium Inertia Servo Motor	ECMA-E11830□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW2003	Power-Cables ASD-CAPW2005	Power-Cables ASD-CAPW2103	Power-Cables ASD-CAPW2105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

ASDA-A2 Optional Accessories

Servo Drive, Servo Motor and Accessories Combinations

220V Series

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

Servo Drive	ASD-A2-3023-□			
Medium-High Inertia Servo Motor	ECMA-F11830□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW2003	Power-Cables ASD-CAPW2005	Power-Cables ASD-CAPW2103	Power-Cables ASD-CAPW2105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

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			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW3203	Power-Cables ASD-CAPW3205	Power-Cables ASD-CAPW3303	Power-Cables ASD-CAPW3305
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

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			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	-	-	-	-
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW4000			
	Encoder Cables ASD-CAEN1000			
	Brake Cables ASD-CNBR1000			

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□3			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	-	-	-	-
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW4000			
	Encoder Cables ASD-CAEN1000			
	Brake Cables ASD-CNBR1000			

400V Series

750W Servo Drive and 750W Low Inertia Servo Motor

Servo Drive	ASD-A2-0743-□			
Low Inertia Servo Motor	ECMA-J10807□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-ABPW0003	Power-Cables ASD-ABPW0005	Power-Cables ASD-ABPW0103	Power-Cables ASD-ABPW0105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASDBCAPW0000		Power Connectors ASDBCAPW0100	
	Encoder Cables ASD-ABEN0000			

1kW Servo Drive and 1kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-1043-□			
Medium Inertia Servo Motor	ECMA-K11310□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

ASDA-A2 Optional Accessories

Servo Drive, Servo Motor and Accessories Combinations

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			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1003	Power-Cables ASD-CAPW1005	Power-Cables ASD-CAPW1103	Power-Cables ASD-CAPW1105
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

2kW Servo Drive and 2kW Medium Inertia Servo Motor

Servo Drive	ASD-A2-2043-□			
Medium Inertia Servo Motor	ECMA-K11320□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW1203	Power-Cables ASD-CAPW1205	Power-Cables ASD-CAPW1303	Power-Cables ASD-CAPW1305
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW1000			
	Encoder Cables ASD-CAEN1000			

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

Servo Drive	ASD-A2-3043-□			
Medium-High Inertia Servo Motor	ECMA-L11830□S			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW2203	Power-Cables ASD-CAPW2205	Power-Cables ASD-CAPW2303	Power-Cables ASD-CAPW2305
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

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			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW2203	Power-Cables ASD-CAPW2205	Power-Cables ASD-CAPW2303	Power-Cables ASD-CAPW2305
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

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			
Cable	Without Brake		With Brake	
	3M	5M	3M	5M
	Power-Cables ASD-CAPW2203	Power-Cables ASD-CAPW2205	Power-Cables ASD-CAPW2303	Power-Cables ASD-CAPW2305
	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005	Encoder Cables ASD-CAEN1003	Encoder Cables ASD-CAEN1005
Connector	Power Connectors ASD-CAPW2000			
	Encoder Cables ASD-CAEN1000			

ASDA-A2 Safety Information

Servo Drive, Servo Motor and Accessories Combinations

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.	
EMS 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	Levelv3
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	

IEC: International Electrotechnical Commission
EN: Europaischen Normen
EMC: Electromagnetic Compatibility
IP: Ingress Protection Ratings

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 / 7.5	-	-	8Ω

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

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.