Digitized Automation for a Changing World

Delta AC Servo Drive & Motor ASDA-A3 Series

www.deltaww.com

Delta High-end Servo System ASDA-A3

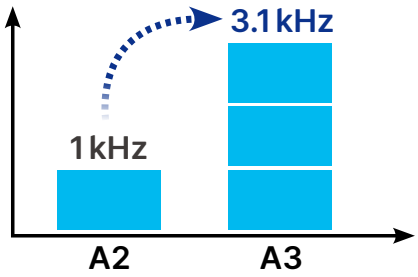
More Responsive, Better Accuracy and Remarkable Robust Control

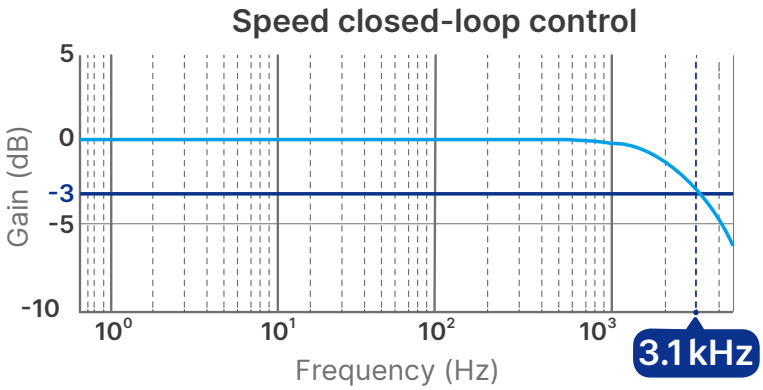
Table of Contents

Cutting-edge Specifications

3.1 kHz Bandwidth

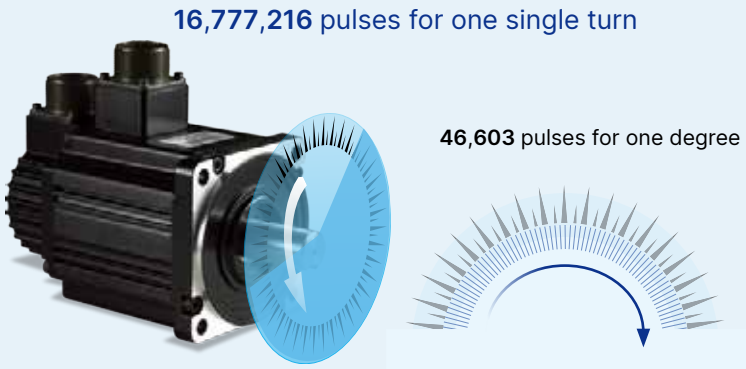
- Higher responsiveness and shorter settling time could increase productivity





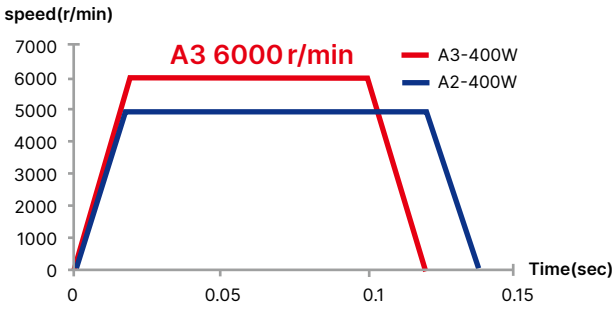
24-bit Absolute Type Encoder

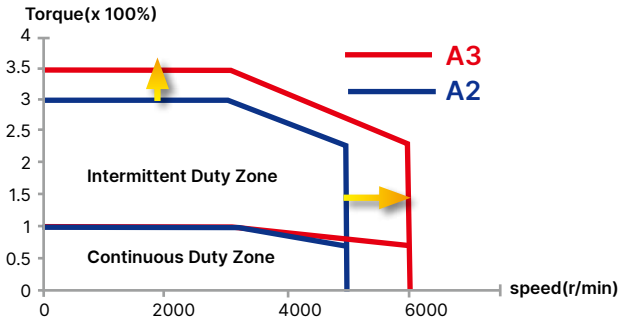
- The positioning precision is enhanced by the 16,777,216 pulses/turn encoder
- The speed variance in low speed is reduced
- Absolute type encoder keeps motor's position when power is off



High speed motor with 6,000 r/min and 350 % peak torque

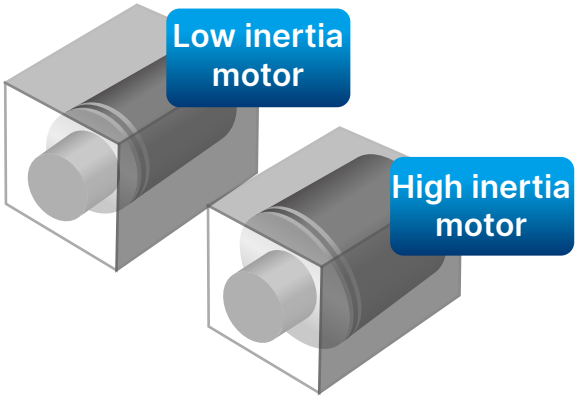
- A3 motor can accelerate and decelerate faster with its design
- This specification is available for motor frame size 40 mm, 60 mm and 80mm





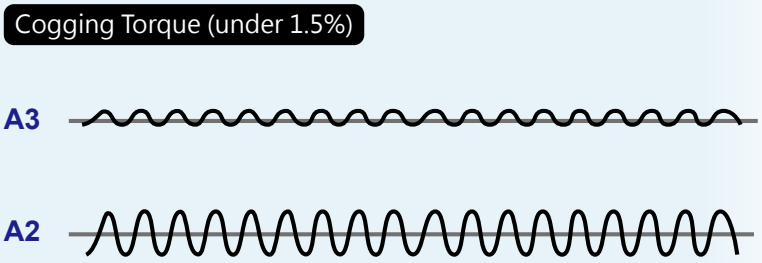
Motor with high or low inertia rotor

- For application requiring stable rotating speed and better disturbance resistant capability, a high inertia motor is more suitable, such as machine tools
- For application like reciprocating motion and fast positioning request, a low inertia motor can be used, such as electronic manufacturing machines



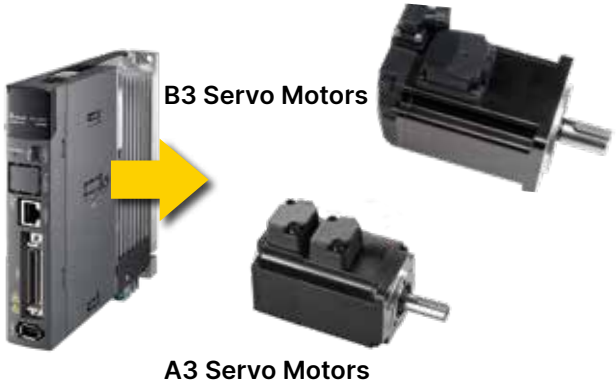
Low Cogging Torque Motor

- Cogging torque of the ECM-A3 motor is only 1.5% of the rated torque, which brings smoother operating speed and increases the stability when machining at low speed



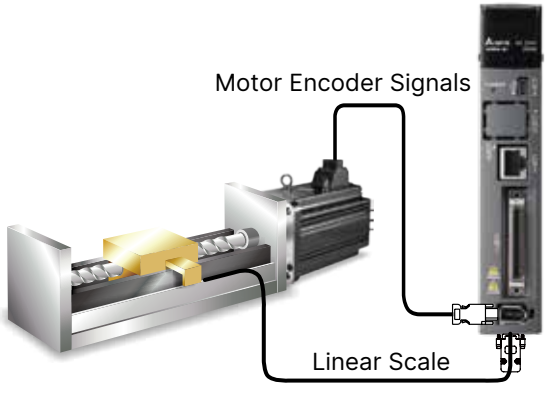
Supports a Variety of Servo Motors

- ASDA-A3 drive can support both A2 (ECMA) and B3 (ECM-B3) series motors



Full-Closed Loop Control

- To ensure the positioning accuracy at the end and eliminate the effect of transmission backlash, full-closed loop control function is an effective solution



System Tuning and Safety Functions

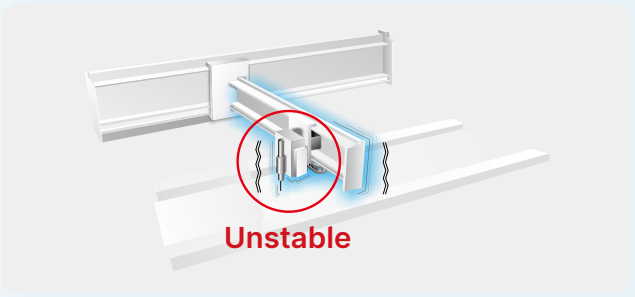
System Diagnosis Function

- The rigidity of a machine is known through a mathematical model
- The consistency of the machine's batch installation can be checked
- By comparing the data from different time span, the wear condition of a machine can be acquired

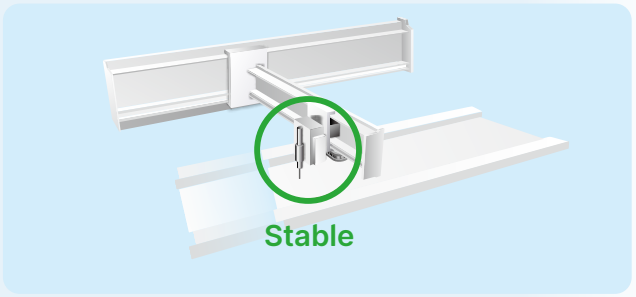
Low Frequency Vibration Suppression Function

- Vibration elimination algorithm is different from command filter and used as a creative algorithm on ASDA-A3
- The vibration can be eliminated without slowing down its response
- In addition to vibration elimination algorithm, the two command filters for low frequency vibration are included

Without Vibration Suppression

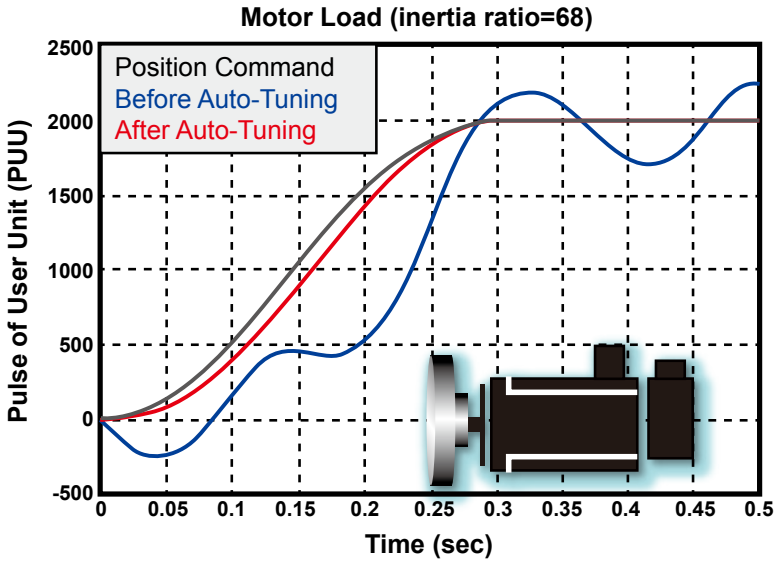


Delta Vibration Suppression



Auto-Tuning Function

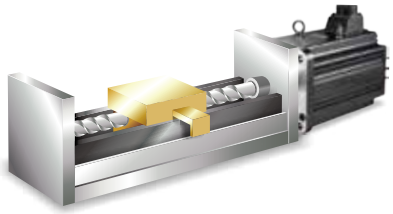
- Lower the barrier for users to use servo systems
- This function will optimize the machine performance with less tuning effort
- It can be done via panel keypad or software

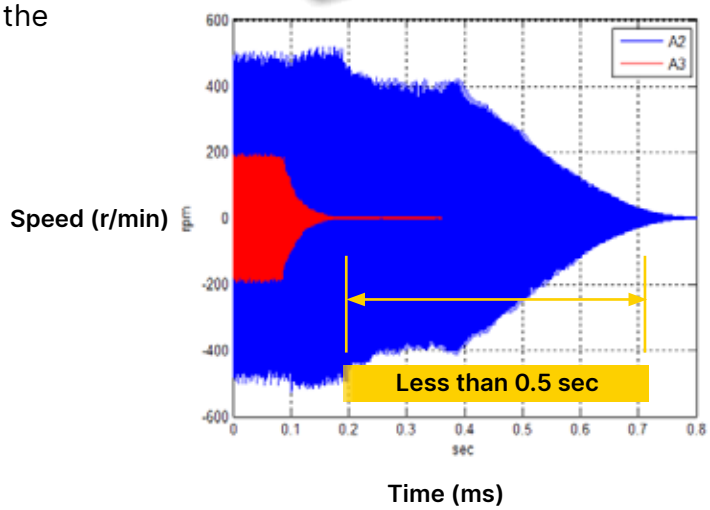


Advanced Notch Filters

- There are 5 sets of notch filters with tunable bandwidth and up to 5000 Hz band for ASDA-A3
- Those filters can search resonance and set the attenuation level automatically
- With shorter search time for resonance, the machine is less likely to be damaged

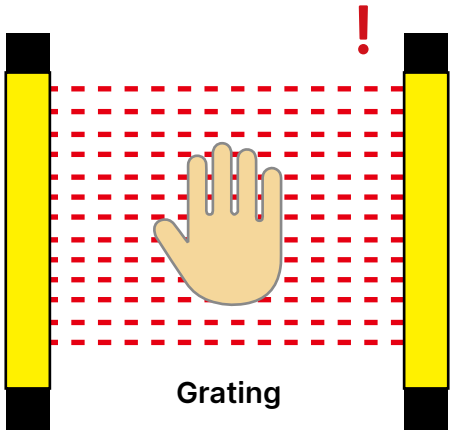
Test Machine Layout

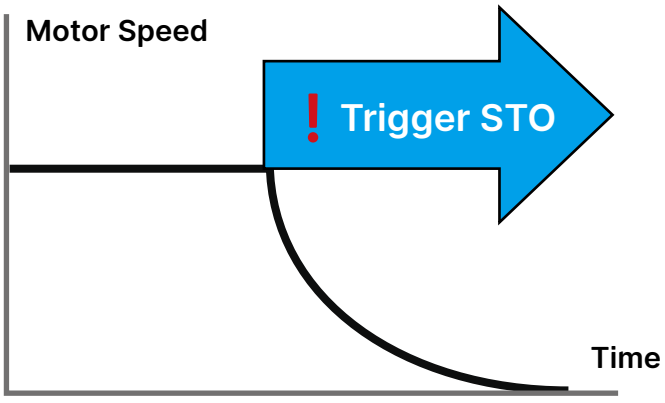




Safe Torque Off (STO) Function *note : to be certified

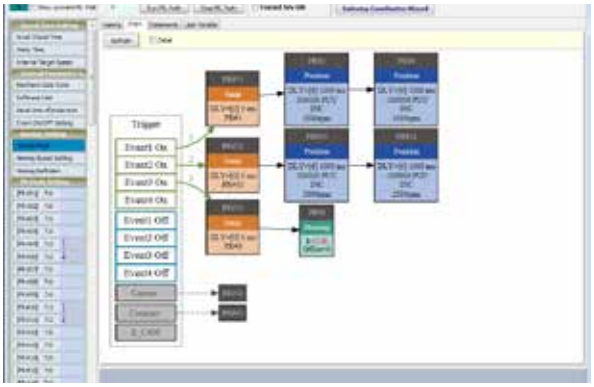
- Built-in STO (Safe Torque Off) function
- The motor power will be cut-off when STO is activated





Motion Inside

Advanced Motion Commands



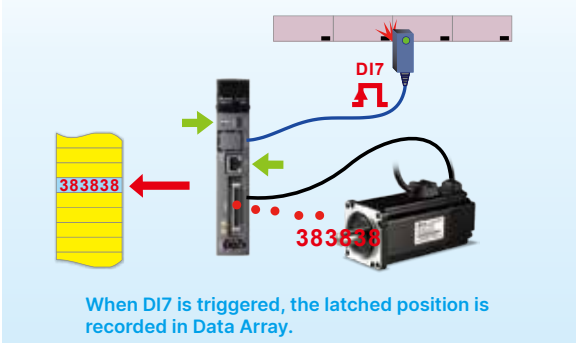
- 99 sophisticated motion commands and segments allowed
- Arithmetic operation and condition jump commands are added
- Graphical user interface offers simple setup and programming
- General motion functions like homing, position and speed commands are available
- Superimposition, blending and on-the-fly change motion commands are provided

Built-in Camming Functions

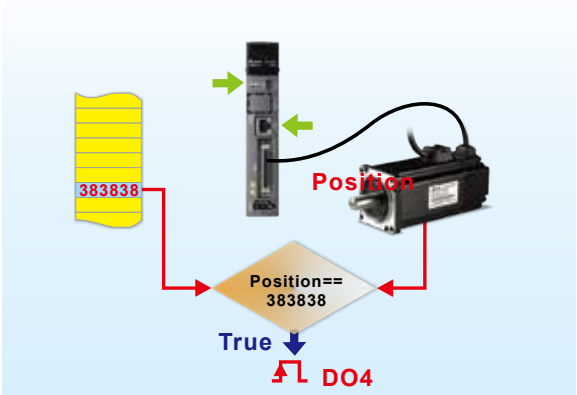
- E-CAM functions for flying shear and rotary cut are well configured
- There are maximum 720 points in one cam profile or contour with interpolation smooth algorithm
- Useful E-CAM phase secure and adjustment functions are easy to apply
- Many successful applications from ASDA-A2 are available for reference

Capture and Compare Functions

- Only 5 µs response time to latch the position or pulse count after receiving the activated DI single.
- The high-speed DO will response when assigned position or count value is reached after 5 µs response time



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

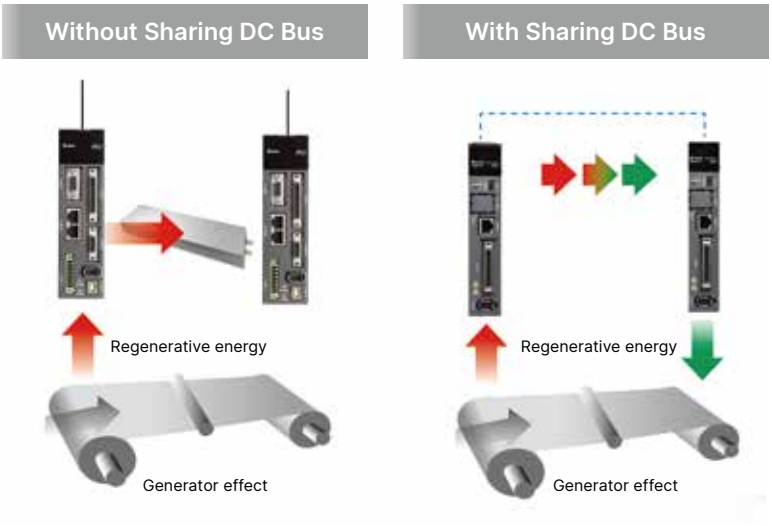


When the data recorded in Data Array is identical to the detected position, DO4 will be on.

Energy-Saving and Compact Size Design

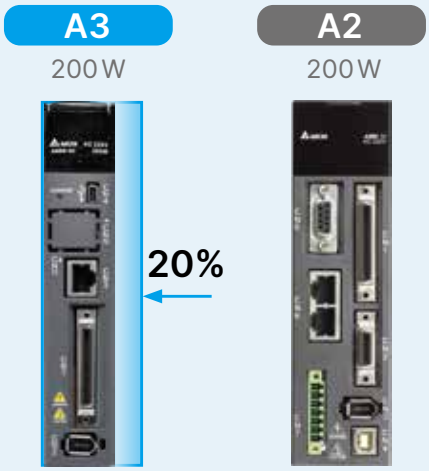
DC-bus Sharing Feature

- The regenerative energy will be collected to DC-bus for other axes to increase energy efficiency
- Smaller resistor installed is possible for the system, which can save cost and installation space



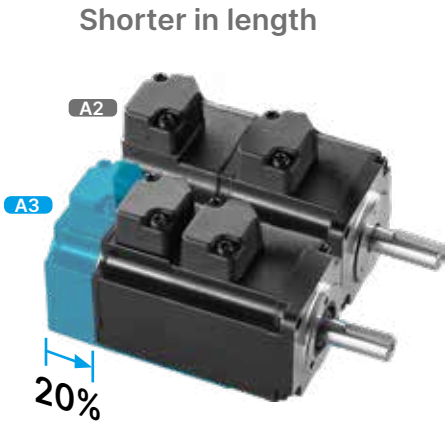
Thinner Size Servo Drive

- ASDA-A3 is 20% smaller than A2 on dimensions, which requires less installation space



Smaller Size Servo Motor

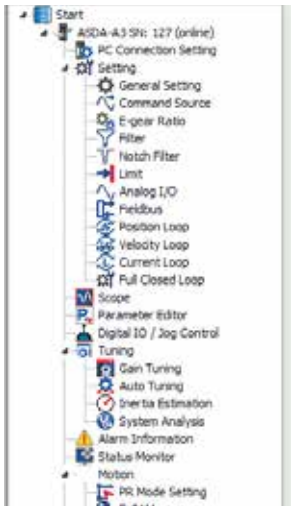
- ASDA-A3 series servo motor is 20% shorter than A2's



User-Friendly Software

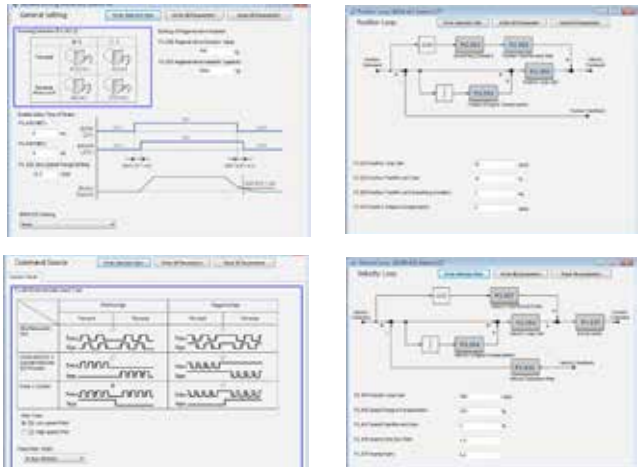
Tree-View Index Window

- Well organized list and collapsible menu help to access functions easily



Graphical Interface for Parameter Settings

- Intuitive user interface provides set up functions and parameters without manual findings

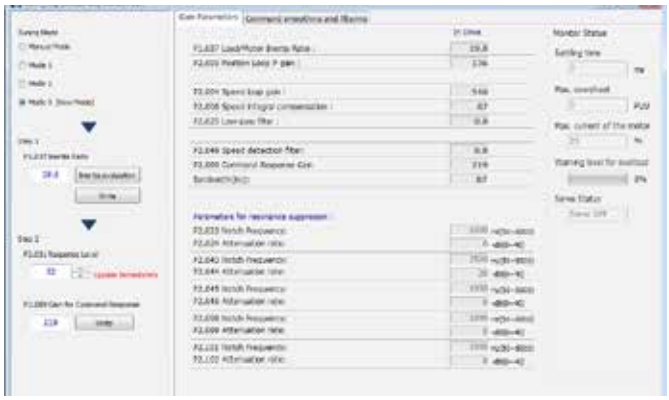


Auto-Tuning Wizard for Gains

- Provides step by step guiding wizard for users to tune a servo

Advanced Gain Tuning Interface

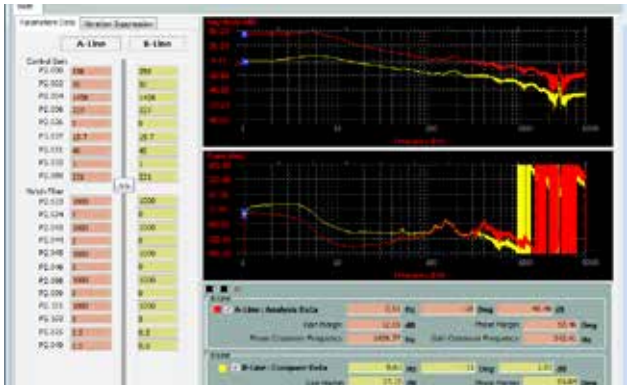
- The servo gains can be easily fine-tuned for better performance with its well-designed tuning modes



System Analysis in Bode Plot

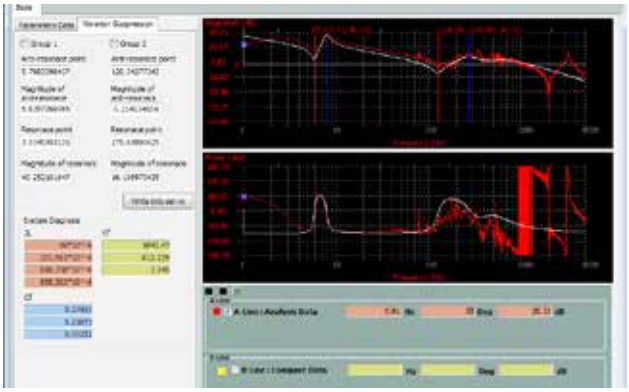
- **Speed Open-Loop Mode**

  Checks the bode plot to know the margin for stability for properly tuned system



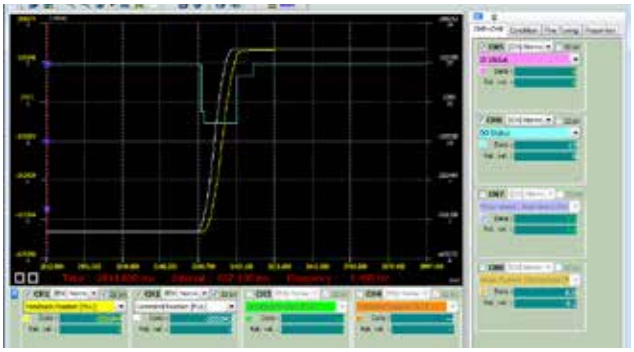
- **System Module Mode**

  The machine rigidity can be judged from the bode plot in this mode

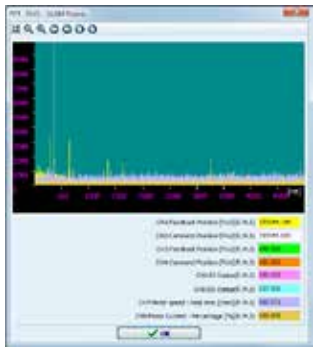


Oscilloscope Function

- The channel configurations for applying the PC scope include:
  - 8 channels with 16-bit data size and 10 kHz sampling rate
  - 4 channels with 32-bit data size and 10 kHz sampling rate
  - 4 channels with 16 bit data size and 20 kHz sampling rate

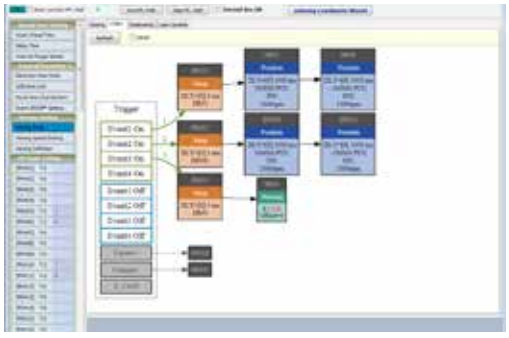


- Offers FFT (Fast Fourier Transform) function for checking its signal spectrum
- The RMS value can be calculated by selecting the period of a signal
- The conditions of start-to-record and stop-recording can be configured



Graphical Programming Interface of PR mode

- Allows users to write and trace programs (including jump instructions) easily



Product Information

Part Names and Functions

Control Circuit Input Terminal (L_{1C}, L_{2C})

- L1C and L2C are used to connect 200~230 VAC, 50/60 Hz single-phase power supply

DC Reactor (P1, P2)

- Without DC reactor: Short circuit P1 and P2
- With DC reactor: connect to P1 and P2

Main Circuit Input Terminal (R,S,T)

- R, S, T are used to connect to main circuit of the servo drive
- For 100 W ~ 1.5 kW servo drives: Used to connect 200 ~ 230 VAC, 50/60 Hz single-phase or 3-phase power supply
- For 2 kW ~ 3 kW servo drives: Used to connect 200-230 VAC, 50/60 Hz 3-phase power supply

STO (Safe Torque Off)

*Note: The STO function is applicable for the -M/-E models

- STO switch
- Connect to safety switch

PC Connection Port (CN4)

- Used to connect PCs or notebooks for operating ASDA-SOFT software
- A mini-USB Type B port (Note: combine Delta's USB communication modules, see p.48 for reference)

(Note: combine Delta's USB communication modules, see chapter on accessories for reference)

RS-485/ CANopen Communication Port Connector (CN3)

- Modbus communication control for RS-485
- CANopen communication control

(Note: CANopen series with two communication ports, see p.31 for reference)

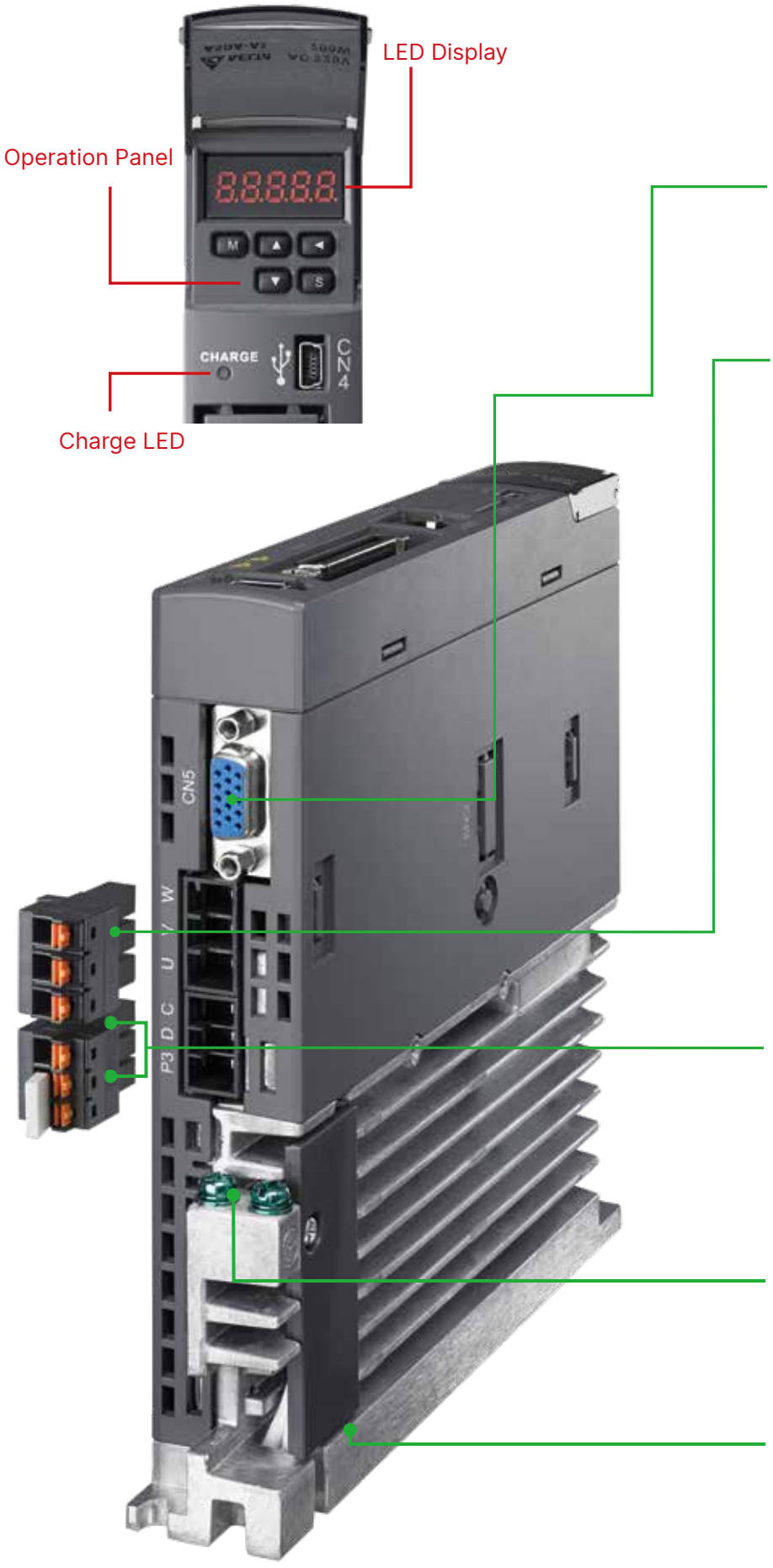
I/O Connector (CN1)

- Used to connect Delta's PLC products or other NC controllers

Encoder Connector (CN2)

- Used to connect the encoder of the servo motor

Extension Module (CN9)



Full-Closed Loop Control Terminal (CN5)

- Used to connect external linear scale or encoder for receiving A,B,Z phase signals

Servo Motor Output (UVW)

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

Braking Resistor Terminal (P3 DC)

- Adopt internal resistor: Ensure the circuit is closed between P3 and D, and the circuit is open between P3 and C (Note: Please refer to table of regenerative resistor specifications for the models with a built-in regenerative resistor from ASDA-A3 User Manual Chapter 2 Selecting Regenerative Resistors)
- Adopt external resistor: Connect it to P3 and C, and ensure an open circuit between P3 and D
- When using an external braking unit, connect it to P3 、⊖, ensure an open circuit between P3 and D, P3 and C

Ground Terminal

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

Heat sink

- Used to secure the servo drive and for heat dissipation

Product Information

Optional Accessories

Quick Connectors

- Used For 100W to 1.5 kW servo drives
- One operating lever is provided for wiring

Power Cables

- 3m, 5m 10m and 20m standard cables are available*A3 Series
- Two types available: with brake and without brake

Encoder Cables

- 3m, 5m, 10m and 20m standard cables are available*A3 Series

Regenerative Resistor

- For selecting a regenerative resistor, please refer to ASDA-A3 User Manual, Chapter 2.8 Selecting Regenerative Resistor

USB Communication Cables (for PC)

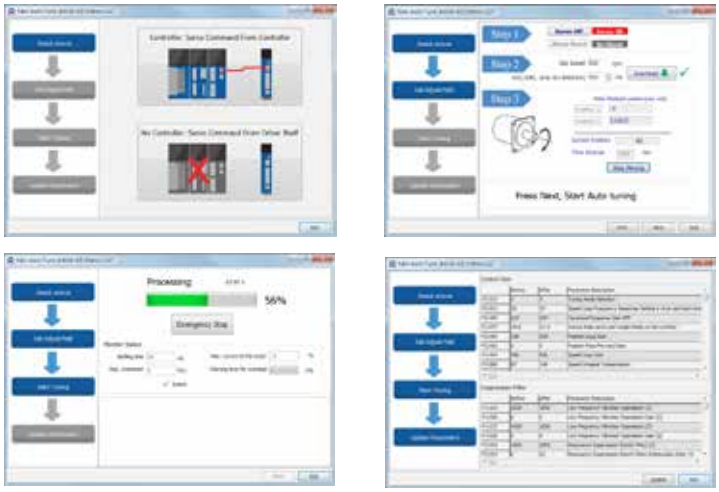
- USB Communication Cables (for PC)
- USB1.1 is equipped as standard

CANopen Accessories

- Connect to Delta PLC CAN Master with TAP-CN03 distribution box
- CANopen communication cable is provided

Product Information

ASDA-Soft Configuration Software

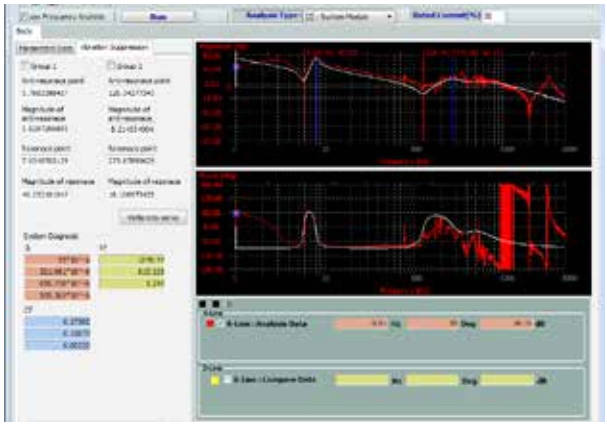


Auto-Tuning Function

- Step-to-step guide on using the auto tuning fuction
- Flow chart of the setting procedure and tuning progress
- Compare the tuninig results (before & after)
- Downloadable gain parameters

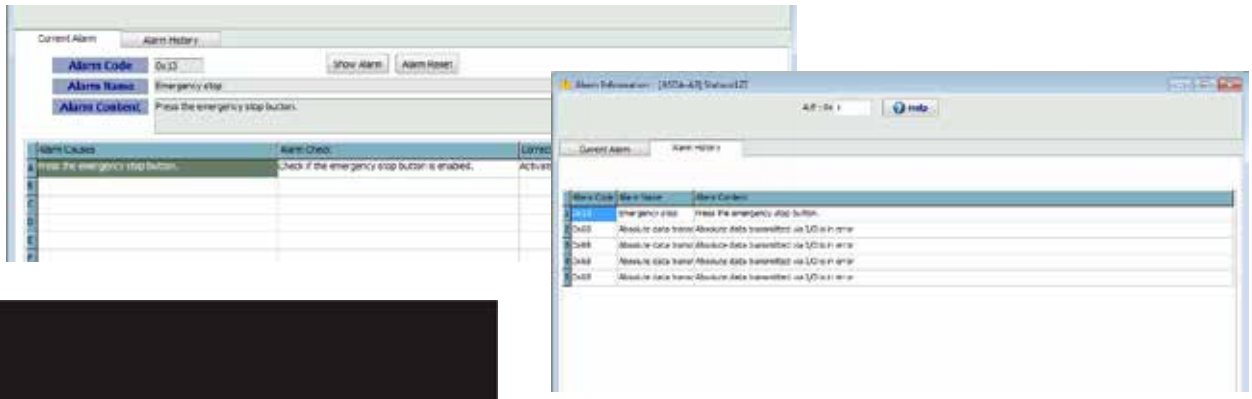
Advanced Tuning Function

- Four tuning modes available
- Manual mode: All gains tuned manually, which is for those who has profound knowledge of servo gain adjustment
- Mode 1: For fine-tuning the bandwidth
- Mode 2: For fine-tuning the inertia and bandwidth
- Mode 3: For fine-tuning the inertia, bandwidth and command responsiveness



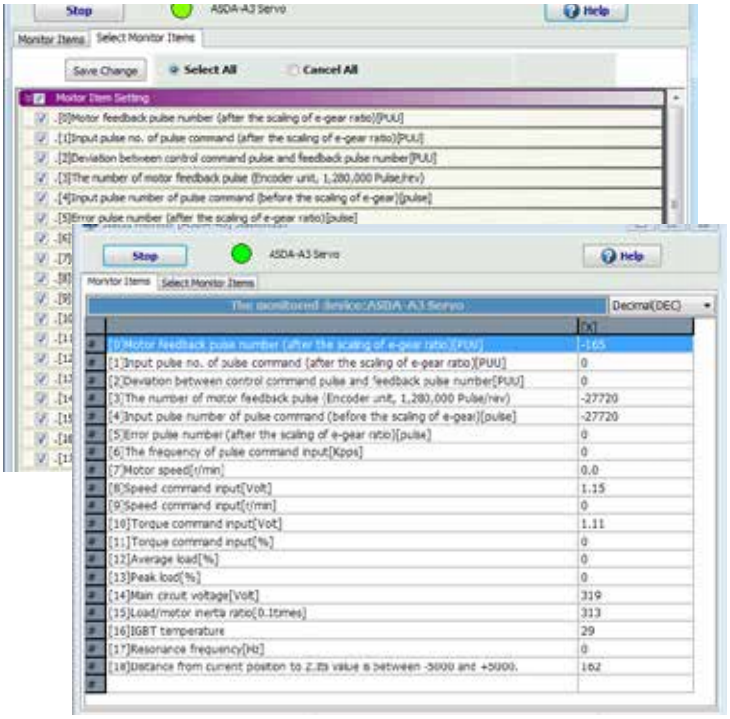
System Module and Low Frequency Analysis

- Provide analysis on rigidity of the system
- Acquire the low-frequnecy resonace data and automatically set the relevant parameters to elimiate the vibration with just one click
- Collect data such as inertia, elasticity and vicousfriction coefficient for knowing the mechanism's features and wear condition



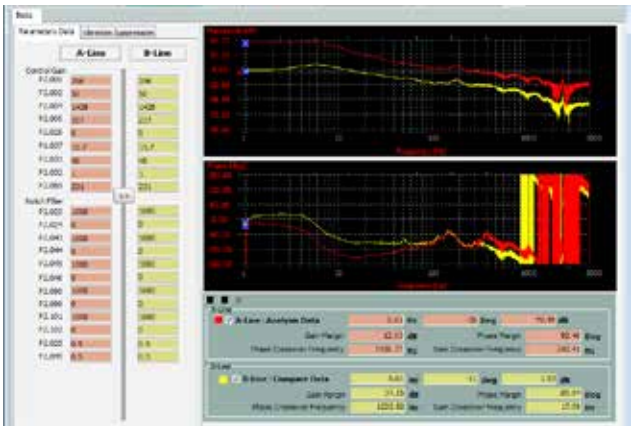
Alarm Information

- Display current alarm and alarm log
- Provide simple corrective actions for quick troubleshooting



Condition Monitoring

- Real-time display of servo motor operation status via the monitoring list



Speed Open-Loop Mode

- Acquire the gain condition for optimizing the equipment performance
- Check the system stability via monitoring the gain and phase margins

Servo System Combination Table

220 V

A3 Motor						Drive	Power Cable		Power C
Frame Size	Output (W)	Model Name	Rotational Inertia ($x10^{-4}kg.m^2$) Standard / With Brake	Rated / Max. Speed (rpm)	Rated / Max. Current (A)	Model Name	Standard	Torsion-Resistant	Standard
40	50	ECM-A3L-C ② 040FRS1 ECM-A3L-C ② 040FSS1	0.0229 / 0.0255	3000 / 6000	0.66 / 2.82	ASD-A3 ① -0121- ②	ACS3-CAPW11XX	ACS3-CAPF11XX	ACS3-CAPW21
	100	ECM-A3L-C ② 0401RS1 ECM-A3L-C ② 0401SS1	0.04 / 0.0426	3000 / 6000	0.9 / 3.88	ASD-A3 ① -0121- ②			
60	200	ECM-A3L-C ② 0602RS1 ECM-A3L-C ② 0602SS1	0.09 / 0.12	3000 / 6000	1.45 / 6.2	ASD-A3 ① -0221- ②			
	400	ECM-A3L-C ② 0604RS1 ECM-A3L-C ② 0604SS1	0.15 / 0.18	3000 / 6000	2.65 / 10.1	ASD-A3 ① -0421- ②			
80	400	ECM-A3L-C ② 0804RS1 ECM-A3L-C ② 0804SS1	0.352 / 0.408	3000 / 6000	2.6 / 10.6	ASD-A3 ① -0421- ②			
	750	ECM-A3L-C ② 0807RS1 ECM-A3L-C ② 0807SS1	0.559 / 0.614	3000 / 6000	5.1 / 20.6	ASD-A3 ① -0721- ②			
40	50	ECM-A3H-C ② 040FRS1 ECM-A3H-C ② 040FSS1	0.0455 / 0.0517	3000 / 6000	0.64 / 2.59	ASD-A3 ① -0121- ②			
	100	ECM-A3H-C ② 0401RS1 ECM-A3H-C ② 0401SS1	0.0754 / 0.0816	3000 / 6000	0.9 / 3.64	ASD-A3 ① -0221- ②			
60	200	ECM-A3H-C ② 0602RS1 ECM-A3H-C ② 0602SS1	0.25 / 0.28	3000 / 6000	1.45 / 5.3	ASD-A3 ① -0421- ②			
	400	ECM-A3H-C ② 0604RS1 ECM-A3H-C ② 0604SS1	0.45 / 0 / 48	3000 / 6000	2.65 / 9.8	ASD-A3 ① -0421- ②			
80	400	ECM-A3H-C ② 0804R71 ECM-A3H-C ② 0804S71	0.92 / 1,07	3000 / 6000	2.6 / 9.32	ASD-A3 ① -0421- ②			
	750	ECM-A3H-C ② 0807RS1 ECM-A3H-C ② 0807SS1	1.51 / 1.66	3000 / 6000	2.6 / 9.32	ASD-A3 ① -0721- ②			

Note:

1. Cable model name: The "XX" stands for cable length. 03 = 3 m, 05 = 5 m, 10 = 10 m, 20 = 20 m.
2. Servo motor model name: ② = encoder type, ③ = type of shaft and oil seal, ④ = shaft diameter and connector type, ⑤ = special code.
3. Servo drive model name: ① = product series, ② = model code.
4. Cables are divided into direct (towards motor shaft) and reverse (towards encoder) exit direction. For details, please refer to the ordering information.

Connector & Cable						Connector Only (No Cable)		
Cable with Brake		Encoder Cable (Incremental Type)		Encoder Cable (Absolute Type)				
	Torsion-Resistant	Standard	Torsion-Resistant	Standard	Torsion-Resistant	Power Connector	Power Connector (with brake) / Brake Connector	Encoder Connector
XX	ACS3-CAPF21XX	ACS3-CAEN01XX	ACS3-CAEF01XX	ACS3-CAEA01XX	ACS3-CAEB01XX	ACS3-CAPW1000	ACS3-CAPW2000	ACS3-CNENC200 + ACS3-CAEN0000

Servo System Combination Table

220 V

Built-in Motor						Drive	Power Cable		Power Ca
Frame Size	Output (W)	Model Name	Rotational Inertia ($x10^{-4}kg.m^2$) Standard / With Brake	Rated / Max. Speed (rpm)	Rated / Max. Current (A)	Model Name	Standard	Torsion-Resistant	Standard
40	100	ECM-B3L-C ② 0401RB1	0.0299 / 0.0315	3000 / 6000	0.857 / 3.44	ASD-A3①-0121-②	ACS3-AFPWSRXX ACS3-ABPWSRXX ACS3-AFPWSR0C~0J ACS3-ABPWSR0C~0J	ACS3-AFPRSRXX ACS3-ABPRSRXX ACS3-AFPRSR0C~0J ACS3-ABPRSR0C~0J	ACS3-AFPWSSXX ACS3-ABPWSSXX ACS3-AFPWSS0C~ ACS3-ABPWSS0C~
		ECM-B3L-C ② 0401SB1							
60	200	ECM-B3M-C ② 0602RB1	0.141 / 0.151	3000 / 6000	1.42 / 6.62	ASD-A3①-0221-②			
		ECM-B3M-C ② 0602SB1							
	200	ECM-B3H– C ② 0602RB1	0.265 / 0.28	3000 / 6700	1.48 / 5.98	ASD-A3①-0221-②			
		ECM-B3H– C ② 0602SB1							
	400	ECM-B3M-C ② 0604RB1	0.254 / 0.264	3000 / 6000	2.40 / 9.47	ASD-A3①-0421-②			
		ECM-B3M-C ② 0604SB1							
	400	ECM-B3H– C ② 0604RB1	0.523 / 0.538	3000 / 6700	2.15 / 8.37	ASD-A3①-0421-②			
		ECM-B3H– C ② 0604SB1							
80	750	ECM-B3M-C ② 0807RB1	1.07 / 1.13	3000 / 6000	4.27 / 15.8	ASD-A3①-0721-②			
		ECM-B3M-C ② 0807SB1				ASD-A3①-1021-②			
	750	ECM-B3H– C ② 0807RB1	1.55 / 1.62	3000 / 6700	4.13 / 16.1	ASD-A3①-0721-②			
		ECM-B3H– C ② 0807SB1				ASD-A3①-1021-②			

Note:
1. Cable model name: The "XX" stands for cable length. 03 = 3 m, 05 = 5 m, 10 = 10 m, 20 = 20 m.
2. Servo motor model name: [2] = encoder type, [3] = type of shaft and oil seal, [4] = shaft diameter and connector type, [5] = special code.
3. Servo drive model name: ① = product series, ② = model code.
4. Cables are divided into direct (towards motor shaft) and reverse (towards encoder) exit direction. For details, please refer to the ordering information.

Connector & Cable						Connector Only (No Cable)		
ble with Brake		Encoder Cable (Incremental Type)		Encoder Cable (Absolute Type)				
	Torsion-Resistant	Standard	Torsion-Resistant	Standard	Torsion-Resistant	Power Connector	Power Connector (with brake) / Brake Connector	Encoder Connector
X	ACS3-AFPRSSXX	ACS3-AFEASIXX	ACS3-AFERSIXX	ACS3-AFEASAXX	ACS3-AFERSAXX			
X	ACS3-ABPRSSXX	ACS3-ABEASIXX	ACS3-ABERSIXX	ACS3-ABEASAXX	ACS3-ABERSAXX	ACS3-AFPWSS00	ACS3-AFPWSS00	ACS3-CNENC200
0J	ACS3-AFPRSS0C~0J	ACS3-AFEASI0C~0J	ACS3-AFERSI0C~0J	ACS3-AFEASA0C~0J	ACS3-AFERSA0C~0J	ACS3-ABPWSS00	ACS3-ABPWSS00	+
0J	ACS3-ABPRSS0C~0J	ACS3-ABEASI0C~0J	ACS3-ABERSI0C~0J	ACS3-ABEASA0C~0J	ACS3-ABERSA0C~0J			ACS3-AFEASA00

Servo System Combination Table

220 V

Motor with Line (Frame Size 40 ~ 80)						Drive	Power Cable		Power Ca
Frame Size	Output (W)	Model Name	Rotational Inertia ($x10^{-4}kg.m^2$) Standard / With Brake	Rated / Max. Speed (rpm)	Rated / Max. Current (A)	Model Name	Standard	Torsion-Resistant	Standard
40	100	ECM-B3L-C ② 0401RS1 ECM-B3L-C ② 0401SS1	0.0299 / 0.0315	3000 / 6000	0.857 / 3.44	ASD-A3①-0121-②	ACS3-CAPW11XX	ACS3-CAPF11XX	ACS3-CAPW21X
60	200	ECM-B3M-C ② 0602RS1 ECM-B3M-C ② 0602SS1	0.141 / 0.151	3000 / 6000	1.42 / 6.62	ASD-A3①-0221-②			
	200	ECM-B3H- C ② 0602RS1 ECM-B3H- C ② 0602SS1	0.265 / 0.28	3000 / 6700	1.48 / 5.98	ASD-A3①-0221-②			
	400	ECM-B3M-C ② 0604RS1 ECM-B3M-C ② 0604SS1	0.254 / 0.264	3000 / 6000	2.40 / 9.47	ASD-A3①-0421-②			
	400	ECM-B3H- C ② 0604RS1 ECM-B3H- C ② 0604SS1	0.523 / 0.538	3000 / 6700	2.15 / 8.37	ASD-A3①-0421-②			
80	750	ECM-B3M-C ② 0807RS1 ECM-B3M-C ② 0807SS1	1.07 / 1.13	3000 / 6000	4.27 / 15.8	ASD-A3①-0721-②			
	750	ECM-B3H-C ② 20807RS1 ECM-B3H-C ② 20807SS1	1.55 / 1.62	3000 / 6700	4.13 / 16.1	ASD-A3①-0721-②			
	1000	ECM-B3M-C ② 0810RS1 ECM-B3M-C ② 0810SS1	1.37 / 1.4	3000 / 6000	5.00 / 18.2	ASD-A3①-0721-②			

Note:

1. Cable model name: The "XX" stands for cable length. 03 = 3 m, 05 = 5 m, 10 = 10 m, 20 = 20 m.
2. Servo motor model name: [2] = encoder type, [3] = type of shaft and oil seal, [4] = shaft diameter and connector type, [5] = special code.
3. Servo drive model name: ① = product series, ② = model code.

Connector & Cable						Connector Only (No Cable)		
ble with Brake		Encoder Cable (Incremental Type)		Encoder Cable (Absolute Type)				
	Torsion-Resistant	Standard	Torsion-Resistant	Standard	Torsion-Resistant	Power Connector	Power Connector (with brake) / Brake Connector	Encoder Connector
X	ACS3-CAPF21XX	ACS3-CAEN01XX	ACS3-CAEF01XX	ACS3-CAEA01XX	ACS3-CAEB01XX	ACS3-CAPW1000	ACS3-CAPW2000	ACS3-CNENC200 + ACS3-CAEN0000

Servo System Combination Table

220 V

Frame Size 100 ~ 220						Drive	Power Cable		Power Cab
Frame Size	Output (W)	Model Name	Rotational Inertia ($x10^{-4}kg.m^2$) Standard / With Brake	Rated / Max. Speed (rpm)	Rated / Max. Current (A)	Model Name	Standard	Torsion-Resistant	Standard
100	1000	ECM-B3M-C ② 1010RS1 ECM-B3M-C ② 1010SS1	2.78 / 3.06	3000 / 6000	6.05 / 18.4	ASD-A3①-1021-②	ACS3-CAPWA2XX ACS3-CRPWA2XX	ACS3-CAPFA2XX ACS3-CRPFA2XX	ACS3-CABRA1XX ACS3-CRBRA1XX
	1500	ECM-B3M-C ② 1015RS1 ECM-B3M-C ② 1015SS1	3.69 / 3.97	3000 / 6000	7.48 / 22.8	ASD-A3①-1521-②			
	2000	ECM-B3M-C ② 1020RS1 ECM-B3M-C ② 1020SS1	4.68 / 4.95	3000 / 6000	9.96 / 30.7	ASD-A3①-2023-②			
130	850	ECM-B3H-L ② 1308RS1 ECM-B3H-L ② 1308SS1	12.44 / 12.62	1500 / 4000	6.65 / 20.0	ASD-A3①-1021-②			
	1000	ECM-B3M-E ② 1310RS1 ECM-B3M-E ② 1310SS1	7.79 / 7.94	2000 / 3000	5.96 / 19.9	ASD-A3①-1021-②			
	1300	ECM-B3H-L ② 1313RS1 ECM-B3H-L ② 1313SS1	18 / 18.14	1500 / 4000	7.7 / 23.9	ASD-A3①-1521-②			
	1500	ECM-B3M-E ② 1315RS1 ECM-B3M-E ② 1315SS1	11.22 / 11.37	2000 / 3000	8.17 / 26.82	ASD-A3①-1521-②			
	1800	ECM-B3H-L ② 1318RS1 ECM-B3H-L ② 1318SS1	22.6 / 22.8	1500 / 4000	11.5 / 36.1	ASD-A3①-2023-②	ACS3-CAPWA3XX ACS3-CRPWA3XX	ACS3-CAPFA3XX ACS3-CRPFA3XX	
	2000	ECM-B3M-E ② 1320RS1 ECM-B3M-E ② 1320SS1	14.65 / 14.8	2000 / 3000	10.59 / 34.20	ASD-A3①-2023-②			
180	2000	ECM-B3M-E ② 1820RS1 ECM-B3M-E ② 1820SS1	29.11 / 30.38	2000 / 3000	11.43 / 36.21	ASD-A3①-2023-②	ACS3-CAPWC4XX ACS3-CRPWC4XX	ACS3-CAPFC4XX ACS3-CRPFC4XX	
	3000	ECM-B3M-F ② 1830RS1 ECM-B3M-F ② 1830SS1	53.63 / 54.9	1500 / 3000	18.21 / 58.9	ASD-A3①-2023-②	ACS3-CAPWC5XX ACS3-CRPWC5XX	ACS3-CAPFC5XX ACS3-CRPFC5XX	
	4500	ECM-B3M-F ② 1845RS1 ECM-B3M-F ② 1845SS1	67.73 / 69.15	1500 / 4000	26.6 / 70.7	ASD-A3①-4523-②			
	5500	ECM-B3M-F ② 1855R31 ECM-B3M-F ② 1855S31	98.88 / 100.1	1500 / 4000	30.7 / 98.6	ASD-A3①-4523-②	ACS3-CAPWE6XX ACS3-CRPWE6XX	ACS3-CAPFE6XX ACS3-CRPFE6XX	
	7500	ECM-B3M-F ② 1875R31 ECM-B3M-F ② 1875S31	134.95 / 136.24	1500 / 4000	44.2 / 113.4	ASD-A3①-7523-②	ACS3-CAPWE7XX ACS3-CRPWE7XX	ACS3-CAPFE7XX ACS3-CRPFE7XX	
220	11000	ECM-B3M-F ② 221BR31 ECM-B3M-F ② 221BS31	302.2 / 303.1	1500 / 4000	45.1 / 120.0	ASD-A3①-1B23-②			
	15000	ECM-B3M-F ② 221FRS1 ECM-B3M-F ② 221FSS1	400.0 / 400.9	1500 / 4000	72.8 / 192.4	ASD-A3①-1F23-②	ACS3-CAPWE8XX ACS3-CRPWE8XX	ACS3-CAPFE8XX ACS3-CRPFE8XX	

Note:

1. Cable model name: The "XX" stands for cable length. 03 = 3 m, 05 = 5 m, 10 = 10 m, 20 = 20 m.
2. Servo motor model name: ② = encoder type.
3. Servo drive model name: ① = product series, ② = model code.
4. Cables are divided into straight and angular connectors. For details, please refer to the ordering information.

Connector & Cable					Connector Only (No Cable)		
le with Brake	Encoder Cable (Incremental Type)		Encoder Cable (Absolute Type)				
Torsion-Resistant	Standard	Torsion-Resistant	Standard	Torsion-Resistant	Power Connector	Power Connector (with brake) / Brake Connector	Encoder Connector
ACS3-CABFA1XX ACS3-CRBFA1XX	ACS3-CAENA1XX ACS3-CRENA1XX	ACS3-CAEFA1XX ACS3-CREFA1XX	ACS3-CAEAA1XX ACS3-CREAA1XX	ACS3-CAEBA1XX ACS3-CREBA1XX	ACS3-CAPWA000 ACS3-CRPWA000	ACS3-CABRA000 ACS3-CRBRA000	ACS3-CNENC200 + ACS3-CAENA000 ACS3-CRENA000
					ACS3-CAPWC000 ACS3-CRPWC000		
					ACS3-CAPWE000 ACS3-CRPWE000		

Servo System Combination Table

400 V

Frame Size 40 ~ 220						Drive	Power Cable		Power Ca
Frame Size	Output (W)	Model Name	Rotational Inertia ($x10^{-4}kg.m^2$) Standard / With Brake	Rated / Max. Speed (rpm)	Rated / Max. Current (A)	Model Name	Standard	Torsion-Resistant	Standard
60	400	ECM-B3M-J ② 0604RS1 ECM-B3M-J ② 0604SS1	0.254 / 0.264	3000 / 6000	1.35 / 5.2	ASD-A3①-0443-②	ACS3-CAPW31XX	ACS3-CAPF31XX	
80	750	ECM-B3M-J ② 0807RS1 ECM-B3M-J ② 0807SS1	1.07 / 1.13	3000 / 6000	2.15 / 7.9	ASD-A3①-0743-②			
100	1000	ECM-B3M-J ② 1010RS1 ECM-B3M-J ② 1010SS1	2.78 / 3.06	3000 / 6000	3.03 / 9.21	ASD-A3①-0743-②			
	1500	ECM-B3M-J ② 1015RS1 ECM-B3M-J ② 1015SS1	3.69 / 3.97	3000 / 6000	3.73 / 11.4	ASD-A3①-1543-②			
	2000	ECM-B3M-J ② 1020RS1 ECM-B3M-J ② 1020SS1	4.68 / 4.95	3000 / 6000	5 / 15.3	ASD-A3①-1543-②			
130	850	ECM-B3H-L ② 1308RS1 ECM-B3H-L ② 1308SS1	12.44 / 12.62	1500 / 4000	3.35 / 10	ASD-A3①-1043-②			
	1000	ECM-B3M-K ② 1310RS1 ECM-B3M-K ② 1310SS1	7.79 / 7.94	2000 / 3000	3 / 9.95	ASD-A3①-1043-②	ACS3-CAPWA2XX ACS3-CRPWA2XX	ACS3-CAPFA2XX ACS3-CRPFA2XX	
	1300	ECM-B3H-L ② 1313RS1 ECM-B3H-L ② 1313SS1	18 / 18.14	1500 / 4000	3.85 / 12	ASD-A3①-1543-②			
	1500	ECM-B3M-K ② 1315RS1 ECM-B3M-K ② 1315SS1	11.22 / 11.37	2000 / 3000	4.09 / 13.37	ASD-A3①-1543-②			ACS3-CABRA1XX
	1800	ECM-B3H-L ② 1318RS1 ECM-B3H-L ② 1318SS1	22.6 / 22.8	1500 / 4000	5.75 / 18.1	ASD-A3①-2043-②			ACS3-CRBRA1XX
	2000	ECM-B3M-K ② 1320RS1 ECM-B3M-K ② 1320SS1	14.65 / 14.8	2000 / 3000	5.3 / 17.1	ASD-A3①-2043-②			
180	2000	ECM-B3M-K ② 1820RS1 ECM-B3M-K ② 1820SS1	29.11 / 30.38	2000 / 3000	5.7 / 18.1	ASD-A3①-2043-②			
	3000	ECM-B3M-L ② 1830RS1 ECM-B3M-L ② 1830SS1	53.63 / 54.9	1500 / 3000	9.1 / 29.45	ASD-A3①-3043-②	ACS3-CAPWC3XX ACS3-CRPWC3XX	ACS3-CAPFC3XX ACS3-CRPFC3XX	
	4500	ECM-B3M-L ② 1845RS1 ECM-B3M-L ② 1845SS1	67.73 / 69.15	1500 / 4000	13.3 / 35.35	ASD-A3①-4543-②	ACS3-CAPWC4XX ACS3-CRPWC4XX	ACS3-CAPFC4XX ACS3-CRPFC4XX	
	5500	ECM-B3M-L ② 1855R31 ECM-B3M-L ② 1855S31	98.88 / 100.1	1500 / 4000	15.3 / 49.29	ASD-A3①-5543-②			
	7500	ECM-B3M-L ② 1875R31 ECM-B3M-L ② 1875S31	134.95 / 136.24	1500 / 4000	22.1 / 56.68	ASD-A3①-7543-②	ACS3-CAPWE6XX ACS3-CRPWE6XX	ACS3-CAPFE6XX ACS3-CRPFE6XX	
220	11000	ECM-B3M-L ② 221BR31 ECM-B3M-L ② 221BS31	302.2 / 303.1	1500 / 4000	21.2 / 56.5	ASD-A3①-1B43-②			
	15000	ECM-B3M-L ② 221FRS1 ECM-B3M-L ② 221FSS1	400 / 400.09	1500 / 4000	29.2 / 77	ASD-A3①-1F43-②			

Note:
1. Cable model name: The "XX" stands for cable length. 03 = 3 m, 05 = 5 m, 10 = 10 m, 20 = 20 m.
2. Servo motor model name: ② = encoder type.
3. Cables are divided into standard, high flex, straight, and angular connectors.
   For details, please refer to the ordering information .

Connector & Cable						Connector Only (No Cable)		
ble with Brake	Encoder Cable (Incremental Type)		Encoder Cable (Absolute Type)					
Torsion-Resistant	Standard	Torsion-Resistant	Standard	Torsion-Resistant	Power Connector	Power Connector (with brake) / Brake Connector	Encoder Connector
	ACS3-CAEN01XX	ACS3-CAEF01XX	ACS3-CAEA01XX	ACS3-CAEB01XX	ACS3-CAPW1000	ACS3-CAPW2000	ACS3-CNENC200 + ACS3-CAENA000 ACS3-CRENA000
ACS3-CABFA1XX ACS3-CRBFA1XX	ACS3-CAENA1XX ACS3-CRENA1XX	ACS3-CAEFA1XX ACS3-CREFA1XX	ACS3-CAEAA1XX ACS3-CREAA1XX	ACS3-CAEBA1XX ACS3-CREBA1XX	ACS3-CAPWA000 ACS3-CRPWA000	ACS3-CABRA000 ACS3-CRBRA000	
					ACS3-CAPWC000 ACS3-CRPWC000		
					ACS3-CAPWC000 ACS3-CRPWC000		
					ACS3-CAPWE000 ACS3-CRPWE000		

Servo Drive Model Information

Model description

ASDA-A3 Series AC Servo Drive

ASD - A3 - 04 21 - L

Product Name
AC Servo Drive

Product Series
A3 series

Rated Power Output

01 : 100 W	15 : 1.5 kW	65: 6.5 kW
02: 200 W	20: 2 kW	75: 7.5 kW
04: 400 W	30: 3 kW	1B: 11 kW
07: 750 W	45: 4.5 kW	1F : 15 kW
10 : 1 kW	55: 5.5 kW	

Input Voltage and Phase
21 : 220 V single-/three-phase
23 : 220 V three-phase
43 : 440 V three-phase

機種代碼
(請見下表)

Code	PT Mode Pulse Input	PR Mode	RS-485	CANopen	DMCNET	EtherCAT	Fully closed loop control	Analog Voltage Control	Electronic cam E-CAM	STO*
L	○	○	○	X	X	X	○	○	X	X
M	○	○	○	○	X	X	○	○	○	○
F	X	○	X	X	○	X	○	X	○	X
E	X	○	X	X	X	○	○	X	○	○

Note: The model information is for reference only. Not all kinds of permutations are available.
Please contact the distributor near your region or Delta for the details.
A3 STO Certification in process

Product ordering information

Servo Drive Specifications 220V

ASDA-A3			100W	200W	400W	750W	1kW	1.5kW
			01	02	04	07	10	15
Power Supply	Phase / Voltage		Single-phase / Three-phase 220V$_{AC}$					
	Permissible Voltage		Single-phase / Three-phase 200 ~ 230 V$_{AC}$, -15% ~ 10%					
	Input Current (3PH) (Unit: Arms)		0.81	1.23	1.95	3.8	5.24	5.91
	Input Current (1PH) (Unit: Arms)		1.43	2.19	3.49	7.12	9.93	11.14
	Continuous Output Current (Unit: Arms)		0.9	1.55	2.6	5.1	7.3	8.3
	Max. Instantaneous Output Current (Unit: Arms)		3.54	7.07	10.61	21.21	24.75	27
	Final Power Dissipation (W)		11.4	14.8	21.9	39.8	73.8	65.9
Cooling Method			Natural cooling			Fan cooling		
Drive Resolution			24-bit (16777216 p / rev)					
Main Circuit Control			SVPWM control					
Tuning Mode			Auto / Manual					
Regenerative resistor			No		Built-in			
Position Control Mode	Pulse Type (Non-DMCNET mode only)		Pulse + Direction; A phase + B phase; CCW pulse + CW pulse					
	Max. Output Pulse Frequency (Non-DMCNET mode only)		Pulse + direction: 4 Mpps; CCW pulse + CW pulse: 4 Mpps; A phase + B phase: single-phase 2 Mpps; Open collector: 200 Kpps					
	Command Source		External pulse (only for pulse control mode) / Internal register (PR mode)					
	Smoothing Method		Low-pass, S-curve, and moving filters					
	E-Gear Ratio		E-Gear ratio: N / M times, limited to (1 / 4 < N / M < 262144) N : 1 ~ 536870911 / M : 1 ~ 2147483647					
	Torque Limit		Parameter settings					
	Feed Forward Compensation		Parameter settings					
Speed Control Mode	Analog Command Input (Non-DMCNET mode only)	Voltage Range	0 ~ ±10 V$_{DC}$					
		Resolution	15-bit					
		Input Impedance	1MΩ					
		Time Constant	25 μs					
	Speed Control Range[*1]		1 : 6000					
	Command Source		External analog command / Internal register (Non-DMCNET mode only)					
	Smoothing Method		Low-pass and S-curve filters					
	Torque Limit		Parameter settings or analog input (Non-DMCNET mode only)					
	Bandwidth		Maximum 3.1 kHz					
	Speed Calibration Ratio[*2]		±0.01% at 0% to 100% load fluctuation					
			±0.01% at ±10% power fluctuation					
			±0.01% at 0°C to 50°C ambient temperature fluctuation					
Torque Control Mode	Analog Command Input (DMCNET mode only)	Voltage Range	0 ~ ±10 V$_{DC}$					
		Input Impedance	1 MΩ					
		Time Constant	25 μs					
	Command Source		External analog command / Internal register					
	Smoothing Method		Low-pass filter					
	Speed Limit		Parameter settings or analog input (Non-DMCNET mode only)					
Analog Monitor Output			Monitoring signal can be set with parameters (voltage output range: ±8V); resolution: 10-bit					
Digital Input / Output	Input		L, M : 10 Inputs; F, E: 7 Inputs. 功能設定請參考手冊第八章					
	Output		L: 6 Outputs; M, F, E: 4 Outputs. 功能設定請參考手冊第八章					
Protection Function			Overcurrent, Overvoltage, Undervoltage, Overheat, Regeneration error, Overload, Excessive speed deviation, Excessive position deviation, Encoder error, Adjustment error, Emergency stop, Forward / reverse limit error, Serial communication error, RST leak phase, Serial communication timeout, Short-circuit protection for terminals U, V, W					
Communication Interface			RS-485 / USB / CANopen / DMCNET / EtherCAT					
Environment	Installation Site		Indoors (avoid direct sunlight), no corrosive vapor (avoid fumes, flammable gases, and dust)					
	Altitude		Altitude 2000 m or lower above sea level					
	Atmospheric Pressure		86 kPa ~ 106 kPa					
	Operating Temperature		0°C to 55°C (If operating temperature is above 45°C, forced cooling is required)					
	Storage Temperature		-20 °C ~ 65 °C					
	Humidity		0 to 90% RH (non-condensing)					
	Vibration		10 Hz ~ 57 Hz : 0.075 mm amplitude ; 58 Hz ~ 150 Hz : 1G					
	IP Rating		IP20					
	Power System		TN system [*3*4]					
	Certifications		IEC / EN / UL 61800-5-1					

Notes:
*1. Within the rated load, the speed ratio is: the minimum speed (smooth operation) / rated speed.
*2. TN system: the neutral point of the power system connects directly to the ground.
The exposed metal components connect to the ground through the protective ground conductor.
*3. Use a single-phase three-wire power system for the single-phase power model.
*4. ASDA-3 complies with the TUV Functional Safety certification.

Product ordering information

Servo Drive Specifications 220V

ASDA-A3			2kW	3kW	4.5kW	5.5kW	7.5kW	11kW	15kW
			20	30	45	55	75	1B	1F
Power Supply	Phase / Voltage		Single-phase / Three-phase 220 V_{AC}						
	Permissible Voltage		Three-phase 200 ~ 230 VAC , -15% ~ 10%						
	Input Current (3PH) (Unit: Arms)		12.3	14.9	19.3	23.8	29	50.3	64.7
	Input Current (1PH) (Unit: Arms)		-	-	13.1	11.79	15.72	35.47	35.47
	Continuous Output Current (Unit: Arms)		13.4	19.4	32.5	40	47.5	58.6	72.8
	Max. Instantaneous Output Current (Unit: Arms)		53.03	58.9	70.71	95.6	106.1	120	192.4
	Final Power Dissipation (W)		139.7	207.1	329.4	284	379.8	419.1	553.7
Cooling Method			Fan cooling						
Drive Resolution			24-bit (16777216 p/rev)						
Main Circuit Control			SVPWM control						
Tuning Mode			Auto / Manual						
Regenerative resistor			Built-in			No			
Position Control Mode	Pulse Type (Non-DMCNET mode only)		Pulse + Direction; A phase + B phase; CCW pulse + CW pulse						
	Max. Output Pulse Frequency (Non-DMCNET mode only)		Pulse + direction: 4 Mpps; CCW pulse + CW pulse: 4 Mpps; A phase + B phase: single-phase 2 Mpps; Open collector: 200 Kpps						
	Command Source		External pulse (only for pulse control mode) / Internal register (PR mode)						
	Smoothing Method		Low-pass and S-curve filters						
	E-Gear Ratio		E-Gear ratio: N / M times, limited to (1 / 4 < N/M < 262144) N : 1 ~ 536870911/M : 1 ~ 2147483647						
	Torque Limit		Parameter settings						
	Feed Forward Compensation		Parameter settings						
Speed Control Mode	Analog Command Input (Non-DMCNET mode only)	Voltage Range	0 ~ ±10 V_{DC}						
		Resolution	15-bit						
		Input Impedance	1MΩ						
		Time Constant	25μs						
	Speed Control Range*1		1 : 6000						
	Command Source		External analog command / Internal register (Non-DMCNET mode only)						
	Smoothing Method		Low-pass and S-curve filters						
	Torque Limit		Parameter settings or analog input (Non-DMCNET mode only)						
	Bandwidth		Maximum 3.1kHz						
	Speed Calibration Ratio*2		±0.01% at 0% to 100% load fluctuation						
			±0.01% at ±10% power fluctuation						
			±0.01% at 0°C to 50°C ambient temperature fluctuation						
Torque Control Mode	Analog Command Input (DMCNET mode only)	Voltage Range	0 ~ ±10 V_{DC}						
		Input Impedance	1MΩ						
		Time Constant	25μs						
	Command Source		External analog command / Internal register						
	Smoothing Method		Low-pass filter						
	Speed Limit		Parameter settings or analog input (Non-DMCNET mode only)						
Analog Monitor Output			Monitoring signal can be set with parameters (voltage output range: ±8V); resolution: 10-bit						
Digital Input / Output	Input		L, M : 10 Inputs; F, E: 7 Inputs. 功能設定請參考手冊第八章						
	Output		L: 6 Outputs; M, F, E: 4 Outputs. 功能設定請參考手冊第八章						
Protection Function			Overcurrent, Overvoltage, Undervoltage, Overheat, Regeneration error, Overload, Excessive speed deviation, Excessive position deviation, Encoder error, Adjustment error, Emergency stop, Forward / reverse limit error, Serial communication error, RST leak phase, Serial communication timeout, Short-circuit protection for terminals U, V, W						
Communication Interface			RS-485 / USB / CANopen / DMCNET / EtherCAT						
Environment	Installation Site		Indoors (avoid direct sunlight), no corrosive vapor (avoid fumes, flammable gases, and dust)						
	Altitude		Altitude 2000 m or lower above sea level						
	Atmospheric Pressure		86 kPa ~ 106 kPa						
	Operating Temperature		0°C to 55°C (If operating temperature is above 45°C, forced cooling is required)						
	Storage Temperature		-20 °C ~ 65 °C						
	Humidity		0 to 90% RH (non-condensing)						
	Vibration		10 Hz ~ 57 Hz : 0.075 mm amplitude ; 58 Hz ~ 150 Hz : 1G						
	IP Rating		IP20						
	Power System		TN system *3*4						
	Certifications		IEC / EN / UL 61800-5-1						

Notes:

*1. Within the rated load, the speed ratio is: the minimum speed (smooth operation) / rated speed.

*2. TN system: the neutral point of the power system connects directly to the ground.
The exposed metal components connect to the ground through the protective ground conductor.

*3. Use a single-phase three-wire power system for the single-phase power model.

*4. ASDA-3 complies with the TUV Functional Safety certification.

Product ordering information

Servo Drive Specifications 400V

ASDA-A3			400 W	750 W	1 kW	1.5 kW	2 kW	3 kW
			0.4	0.75	1	1.5	2	3
Power Supply	Phase / Voltage		Three-phase 400 V_{AC}					
	Permissible Voltage		Three-phase 380 ~ 480 VAC，-10% ~ +10%					
	Input Current (3PH) (Unit: Arms)		0.9	1.8	2.4	3.4	4.5	6.3
	Input Current (1PH) (Unit: Arms)		1.7	1.7	1.7	1.7	2.1	2.1
	Continuous Output Current (Unit: Arms)		1.6	3.12	3.52	5.06	6.6	9.11
	Max. Instantaneous Output Current (Unit: Arms)		5.4	9.7	10.54	16.35	19.88	29.45
	Final Power Dissipation (W)		49	72	86	105	125	195
Cooling Method			Fan cooling					
Drive Resolution			24-bit (16777216 p/rev)					
Main Circuit Control			SVPWM control					
Tuning Mode			Auto/Manual					
Regenerative resistor			No					
Position Control Mode	Pulse Type (Non-DMCNET mode only)		Pulse + Direction; A phase + B phase; CCW pulse + CW pulse					
	Max. Output Pulse Frequency (Non-DMCNET mode only)		Pulse + direction: 4 Mpps; CCW pulse + CW pulse: 4 Mpps; A phase + B phase: single-phase 2 Mpps; Open collector: 200 Kpps					
	Command Source		External pulse (only for pulse control mode) / Internal register (PR mode)					
	Smoothing Method		Low-pass and S-curve filters					
	E-Gear Ratio		E-Gear ratio: N / M times, limited to (1/4 < N/M < 262144) N：1 ~ 536870911/M：1 ~ 2147483647					
	Torque Limit		Parameter settings					
	Feed Forward Compensation		Parameter settings					
Speed Control Mode	Analog Command Input (Non-DMCNET mode only)	Voltage Range	0 ~ ± 10 V_{DC}					
		Resolution	15-bit					
		Input Impedance	1MΩ					
		Time Constant	25 µs					
	Speed Control Range[*1]		1 : 6000					
	Command Source		External analog command / Internal register (Non-DMCNET mode only)					
	Smoothing Method		Low-pass and S-curve filters					
	Torque Limit		Parameter settings or analog input (Non-DMCNET mode only)					
	Bandwidth		Maximum 3.1 kHz					
	Speed Calibration Ratio[*2]		±0.01% at 0% to 100% load fluctuation					
			±0.01% at ±10% power fluctuation					
			±0.01% at 0°C to 50°C ambient temperature fluctuation					
Torque Control Mode	Analog Command Input (DMCNET mode only)	Voltage Range	0 ~ ± 10 V_{DC}					
		Input Impedance	1MΩ					
		Time Constant	25 µs					
	Command Source		External analog command / Internal register					
	Smoothing Method		Low-pass filter					
	Speed Limit		Parameter settings or analog input (Non-DMCNET mode only)					
Analog Monitor Output			Monitoring signal can be set with parameters (voltage output range: ±8V); resolution: 10-bit					
Digital Input / Output	Input		L, M : 10 Inputs; F, E: 7 Inputs. 功能設定請參考手冊第八章					
	Output		L: 6 Outputs; M, F, E: 4 Outputs. 功能設定請參考手冊第八章					
Protection Function			Overcurrent, Overvoltage, Undervoltage, Overheat, Regeneration error, Overload, Excessive speed deviation, Excessive position deviation, Encoder error, Adjustment error, Emergency stop, Forward / reverse limit error, Serial communication error, RST leak phase, Serial communication timeout, Short-circuit protection for terminals U, V, W					
Communication Interface			RS-485 / USB / CANopen / DMCNET / EtherCAT					
Environment	Installation Site		Indoors (avoid direct sunlight), no corrosive vapor (avoid fumes, flammable gases, and dust)					
	Altitude		Altitude 2000 m or lower above sea level					
	Atmospheric Pressure		86 kPa ~ 106 kPa					
	Operating Temperature		0°C to 55°C (If operating temperature is above 45°C, forced cooling is required)					
	Storage Temperature		-20 °C ~ 65 °C					
	Humidity		0 to 90% RH (non-condensing)					
	Vibration		10 Hz ~ 57 Hz：0.075 mm amplitude；58 Hz ~ 150 Hz：1G					
	IP Rating		IP20					
	Power System		TN system [*3*4]					
	Certifications		IEC/EN/UL 61800-5-1					

Notes:

*1. Within the rated load, the speed ratio is: the minimum speed (smooth operation) / rated speed.

*2. TN system: the neutral point of the power system connects directly to the ground.
The exposed metal components connect to the ground through the protective ground conductor.

*3. Use a single-phase three-wire power system for the single-phase power model.

*4. ASDA-3 complies with the TUV Functional Safety certification.

Product ordering information

Servo Drive Specifications 400V

ASDA-A3			4.5kW	5.5kW	6.5kW	7.5kW	11kW	15kW
			4.5	5.5	5.5	7.5	11	15
Power Supply	Phase / Voltage		Three-phase 400 V_{AC}					
	Permissible Voltage		Three-phase 380 ~ 480 V_{AC} , -10% ~ +10%					
	Input Current (3PH) (Unit: Arms)		8.7	10.7	11.8	14.1	21.8	29.6
	Input Current (1PH) (Unit: Arms)		2.1	2.1	2.5	2.5	3	3
	Continuous Output Current (Unit: Arms)		13.3	15.34	17.5	22.4	27.3	31
	Max. Instantaneous Output Current (Unit: Arms)		35.35	49.29	49.29	56.68	68.25	80.2
	Final Power Dissipation (W)		220	310	330	400	465	530
Cooling Method			Fan cooling					
Drive Resolution			24-bit (16777216 p/rev)					
Main Circuit Control			SVPWM control					
Tuning Mode			Auto / Manual					
Regenerative resistor			No					
Position Control Mode	Pulse Type (Non-DMCNET mode only)		Pulse + Direction; A phase + B phase; CCW pulse + CW pulse					
	Max. Output Pulse Frequency (Non-DMCNET mode only)		Pulse + direction: 4 Mpps; CCW pulse + CW pulse: 4 Mpps; A phase + B phase: single-phase 2 Mpps; Open collector: 200 Kpps					
	Command Source		External pulse (only for pulse control mode) / Internal register (PR mode)					
	Smoothing Method		Low-pass and S-curve filters					
	E-Gear Ratio		E-Gear ratio: N / M times, limited to (1 / 4 < N / M < 262144) N : 1 ~ 536870911 / M : 1 ~ 2147483647					
	Torque Limit		Parameter settings					
	Feed Forward Compensation		Parameter settings					
Speed Control Mode	Analog Command Input (Non-DMCNET mode only)	Voltage Range	0 ~ ±10 V_{DC}					
		Resolution	15-bit					
		Input Impedance	1MΩ					
		Time Constant	25μs					
	Speed Control Range*1		1 : 6000					
	Command Source		External analog command / Internal register (Non-DMCNET mode only)					
	Smoothing Method		Low-pass and S-curve filters					
	Torque Limit		Parameter settings or analog input (Non-DMCNET mode only)					
	Bandwidth		Maximum 3.1kHz					
	Speed Calibration Ratio*2		±0.01% at 0% to 100% load fluctuation					
			±0.01% at ±10% power fluctuation					
			±0.01% at 0°C to 50°C ambient temperature fluctuation					
Torque Control Mode	Analog Command Input (DMCNET mode only)	Voltage Range	0 ~ ±10 V_{DC}					
		Input Impedance	1MΩ					
		Time Constant	25μs					
	Command Source		External analog command / Internal register					
	Smoothing Method		Low-pass filter					
	Speed Limit		Parameter settings or analog input (Non-DMCNET mode only)					
Analog Monitor Output			Monitoring signal can be set with parameters (voltage output range: ±8V); resolution: 10-bit					
Digital Input / Output	Input		L, M : 10 Inputs; F, E: 7 Inputs. 功能設定請參考手冊第八章					
	Output		L: 6 Outputs; M, F, E: 4 Outputs. 功能設定請參考手冊第八章					
Protection Function			Overcurrent, Overvoltage, Undervoltage, Overheat, Regeneration error, Overload, Excessive speed deviation, Excessive position deviation, Encoder error, Adjustment error, Emergency stop, Forward / reverse limit error, Serial communication error, RST leak phase, Serial communication timeout, Short-circuit protection for terminals U, V, W					
Communication Interface			RS-485 / USB / CANopen / DMCNET / EtherCAT					
Environment	Installation Site		Indoors (avoid direct sunlight), no corrosive vapor (avoid fumes, flammable gases, and dust)					
	Altitude		Altitude 2000 m or lower above sea level					
	Atmospheric Pressure		86kPa ~ 106kPa					
	Operating Temperature		0°C to 55°C (If operating temperature is above 45°C, forced cooling is required)					
	Storage Temperature		-20 °C ~ 65 °C					
	Humidity		0 to 90% RH (non-condensing)					
	Vibration		10Hz ~ 57Hz : 0.075 mm amplitude ; 58Hz ~ 150Hz : 1G					
	IP Rating		IP20					
	Power System		TN system *3*4					
	Certifications		IEC / EN / UL 61800-5-1					

Notes:

*1. Within the rated load, the speed ratio is: the minimum speed (smooth operation) / rated speed.

*2. TN system: the neutral point of the power system connects directly to the ground.
The exposed metal components connect to the ground through the protective ground conductor.

*3. Use a single-phase three-wire power system for the single-phase power model.

*4. ASDA-3 complies with the TUV Functional Safety certification.

Product ordering information

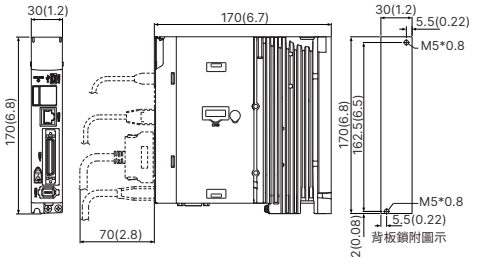
Dimensions - 220V

Unit: mm [inch]

Frame A

100 W / 200 W

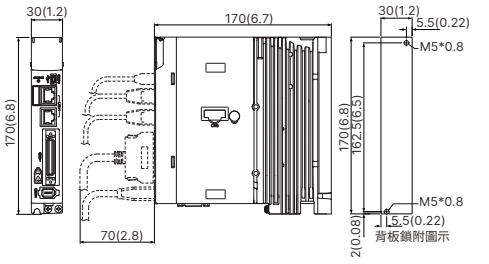
Weight
0.84 kg



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

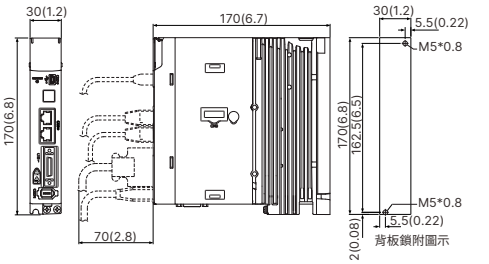
-L



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

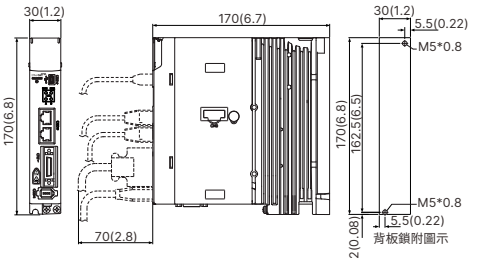
-M



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

-F



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

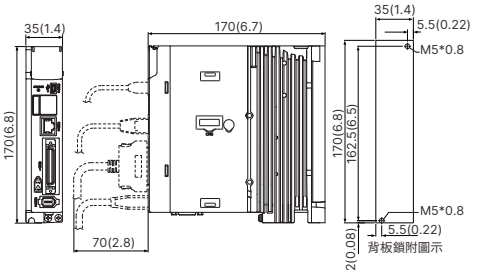
Unit: mm (inch)

-E

Frame B

400 W

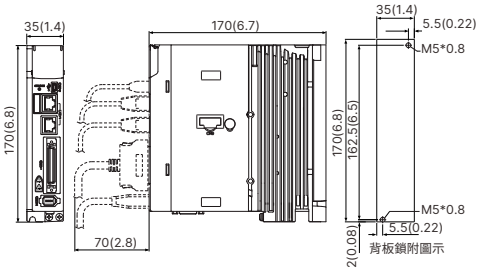
Weight
0.92 kg



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

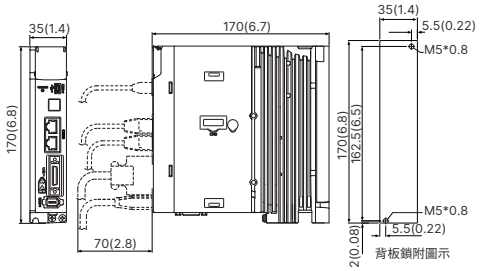
-L



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

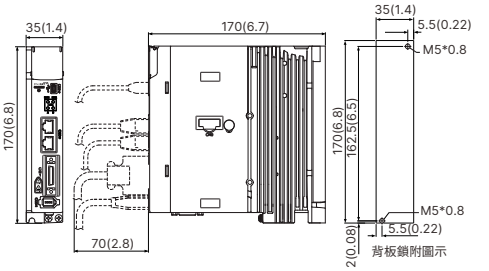
-M



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

-F



SCREW: M4x0.7
Mounting screw torque: 14 (kgf-cm)

Unit: mm (inch)

-E

註：
1. 機構尺寸單位為公厘；重量單位為公斤
2. 機構尺寸及重量變更恕不另行通知

Product ordering information

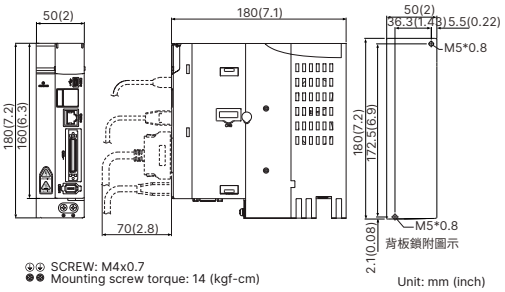
Dimensions - 220V

Unit: mm [inch]

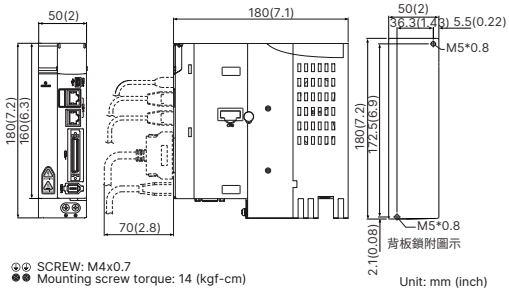
Frame C

750 W / 1 kW / 1.5 kW

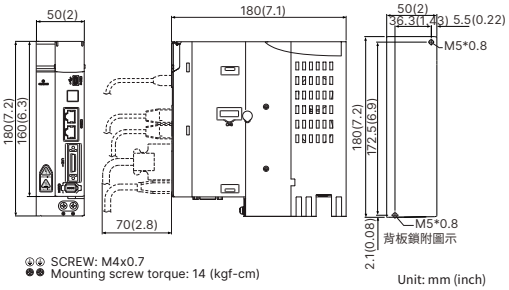
Weight
1.3 kg



-L



-M



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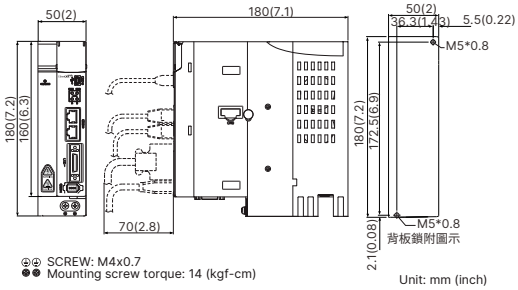
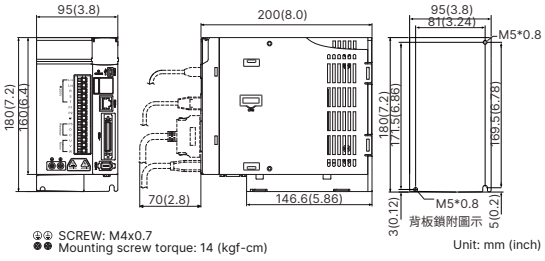


-E

Frame D

2 kW / 3 kW

Weight
2.7 kg



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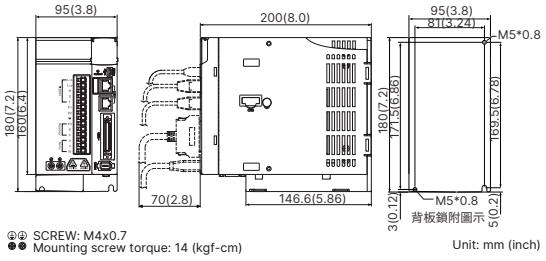

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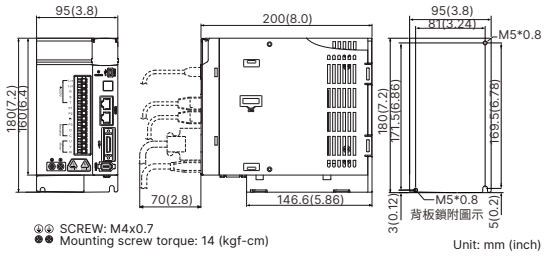

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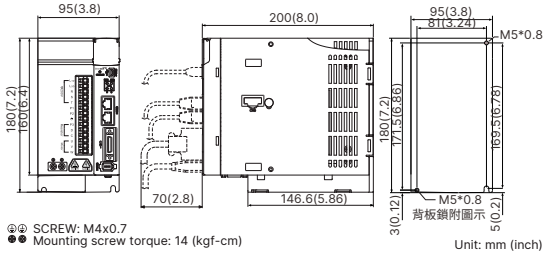


-E

註：
1. 機構尺寸單位為公厘；重量單位為公斤
2. 機構尺寸及重量變更恕不另行通知

Product ordering information

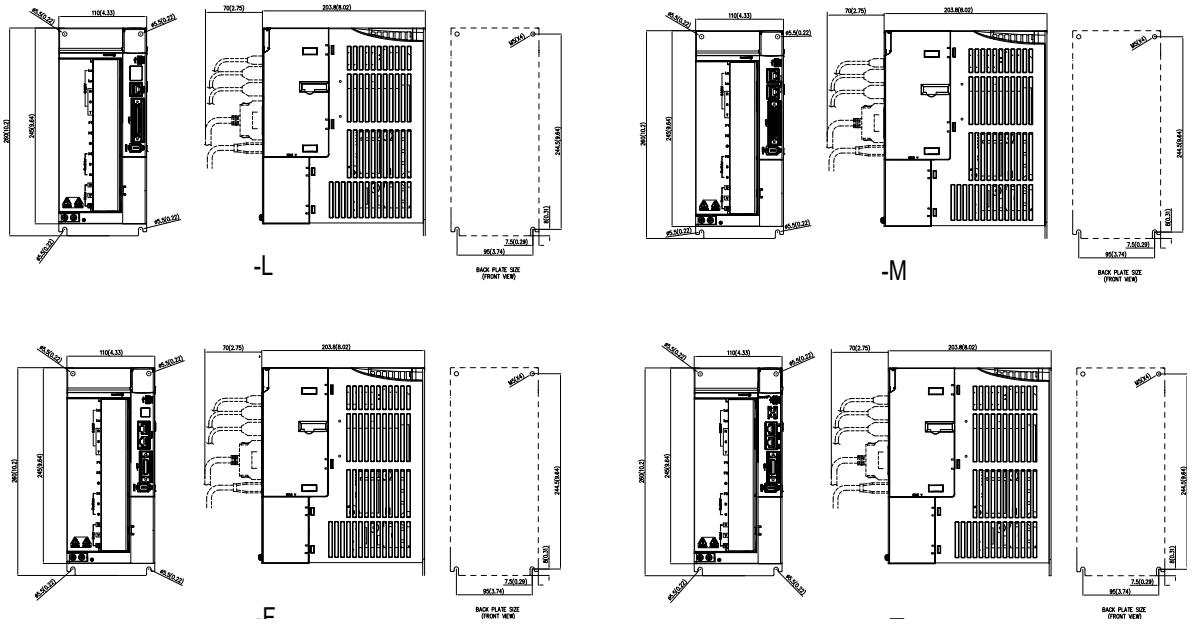
Dimensions - 220V

Unit: mm [inch]

Frame E

4.5 kW

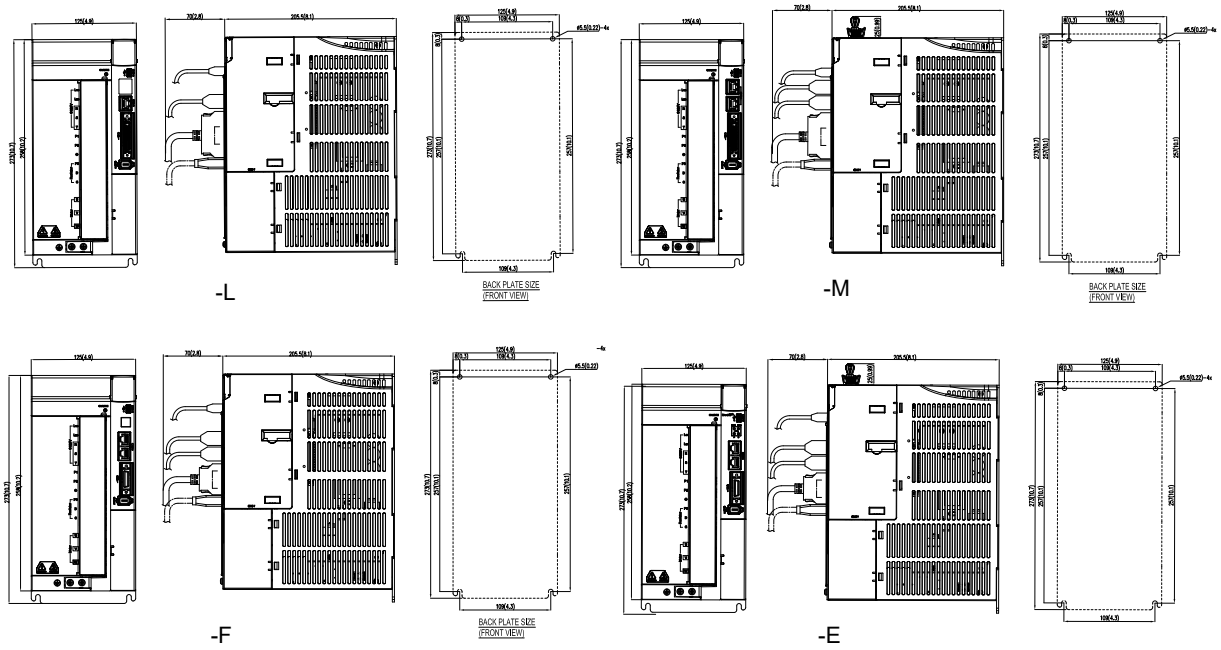
Weight
5.0 kg



Frame F

5.5 kW / 7.5 kW

Weight
4.7 kg / 5.5 kg



Product ordering information

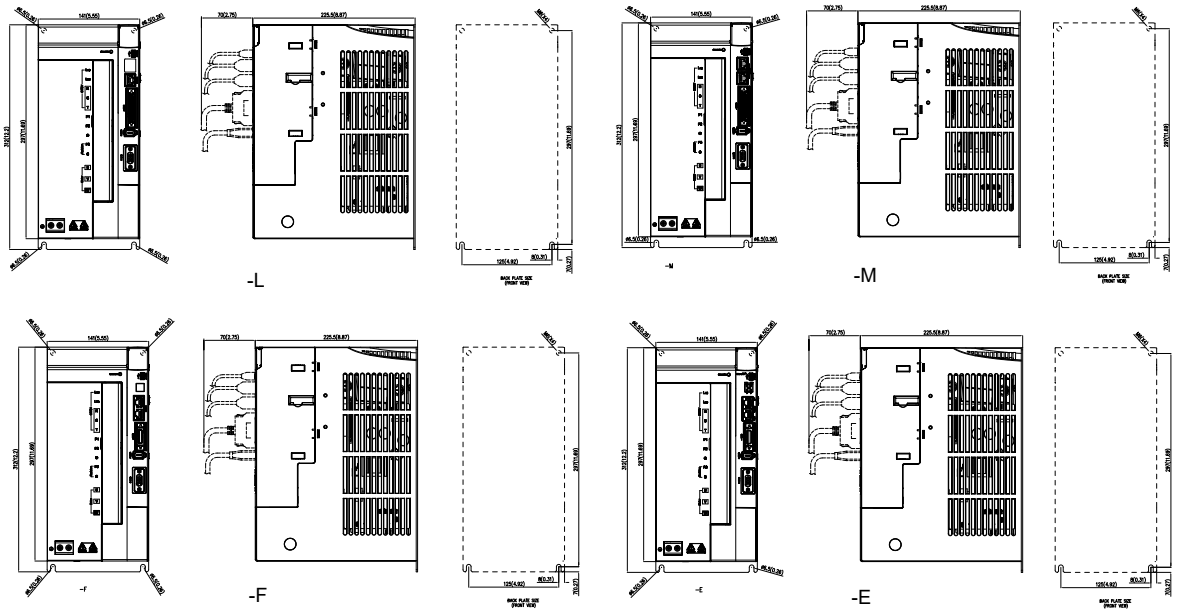
Dimensions - 220V

Unit: mm [inch]

Frame G

11 kW

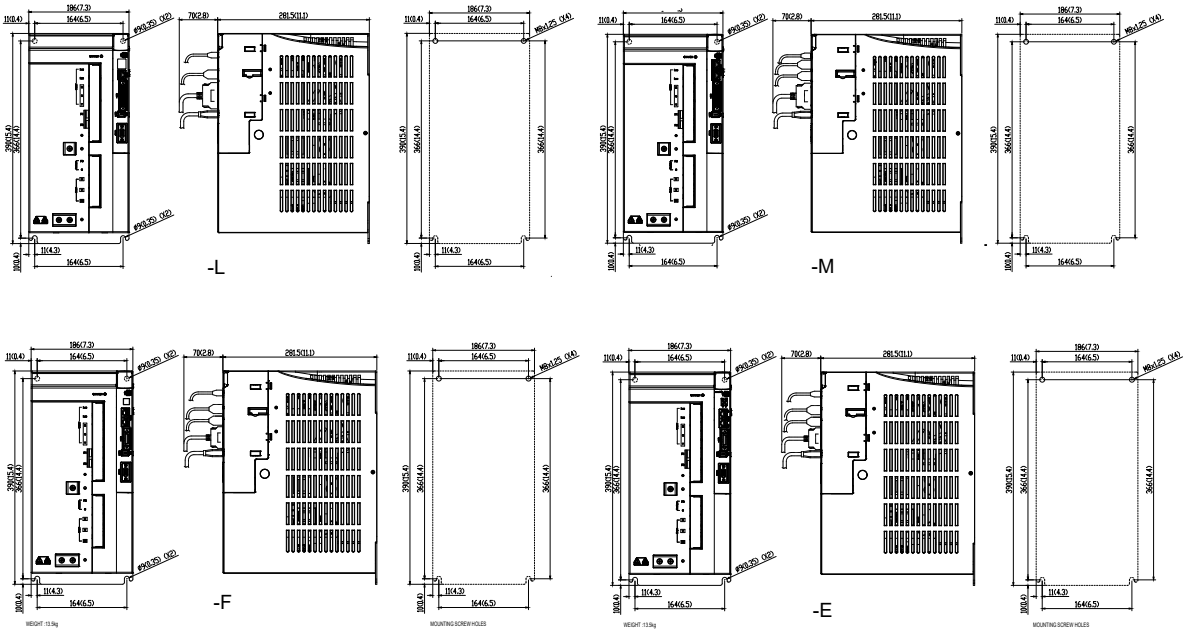
Weight
7.5 kg



Frame H

15 kW

Weight
13.5 kg



Product ordering information

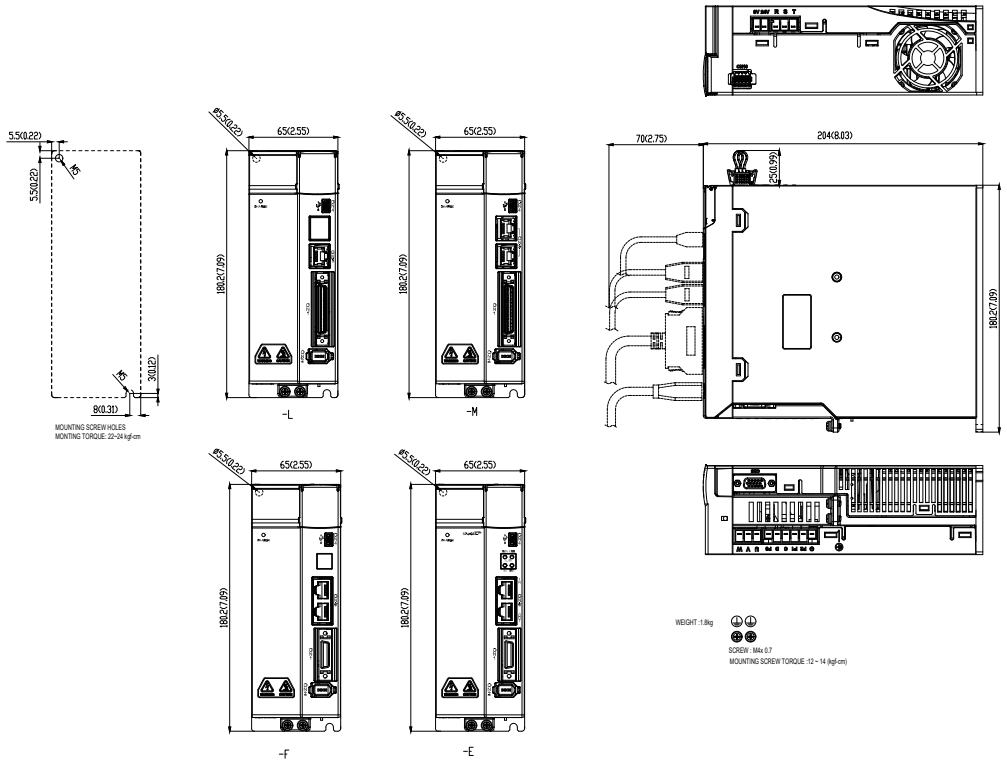
Dimensions - 400V

Unit: mm [inch]

Frame A

400 W / 750 W / 1 kW / 1.5 kW

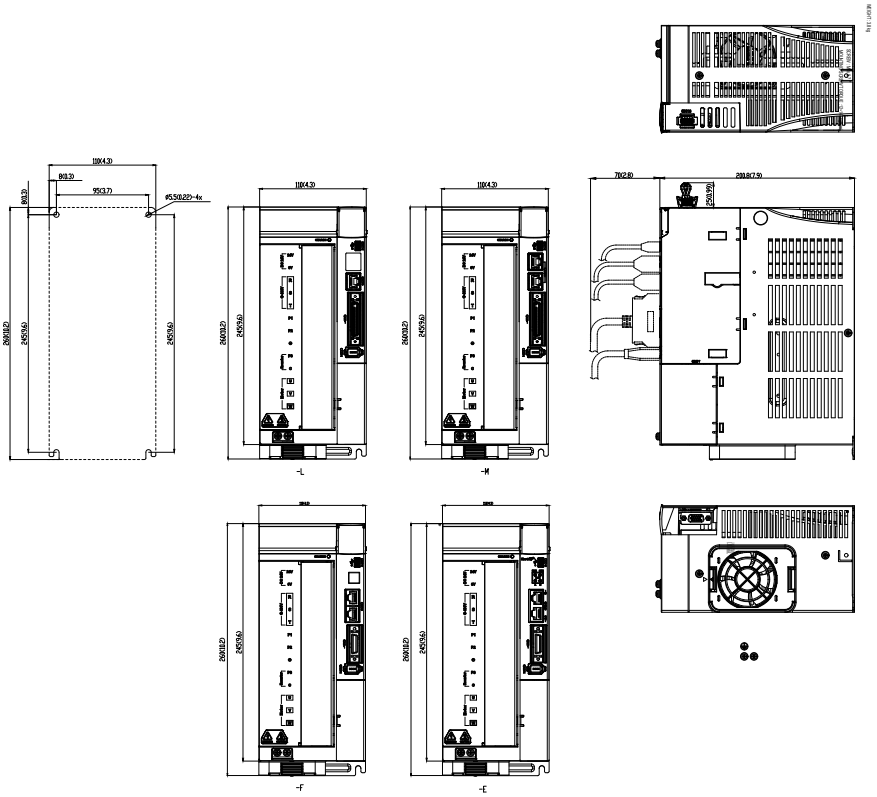
Weight
1.8 kg



Frame B

2 kW / 3 kW / 4.5 kW / 5.5 kW

Weight	
2 kW / 3 kW	3.45 kg
4.5 kW / 5.5 kW	4 kg



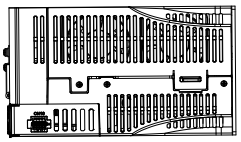
Product ordering information

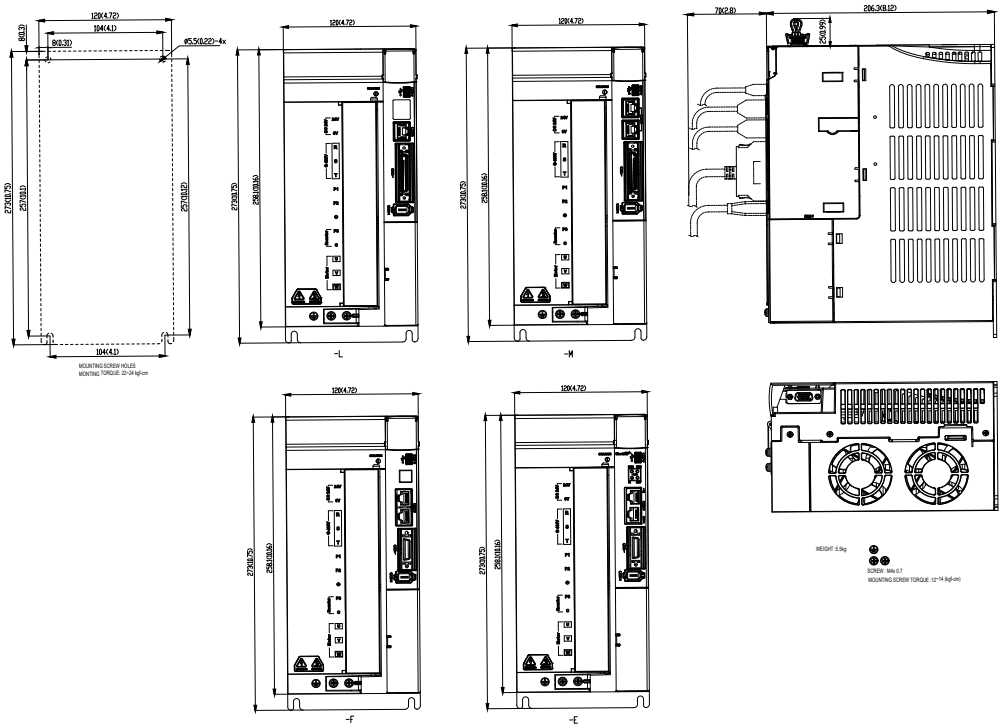
Dimensions - 400V

Frame C

6.5 kW / 7.5 kW

Weight
5.5 kg

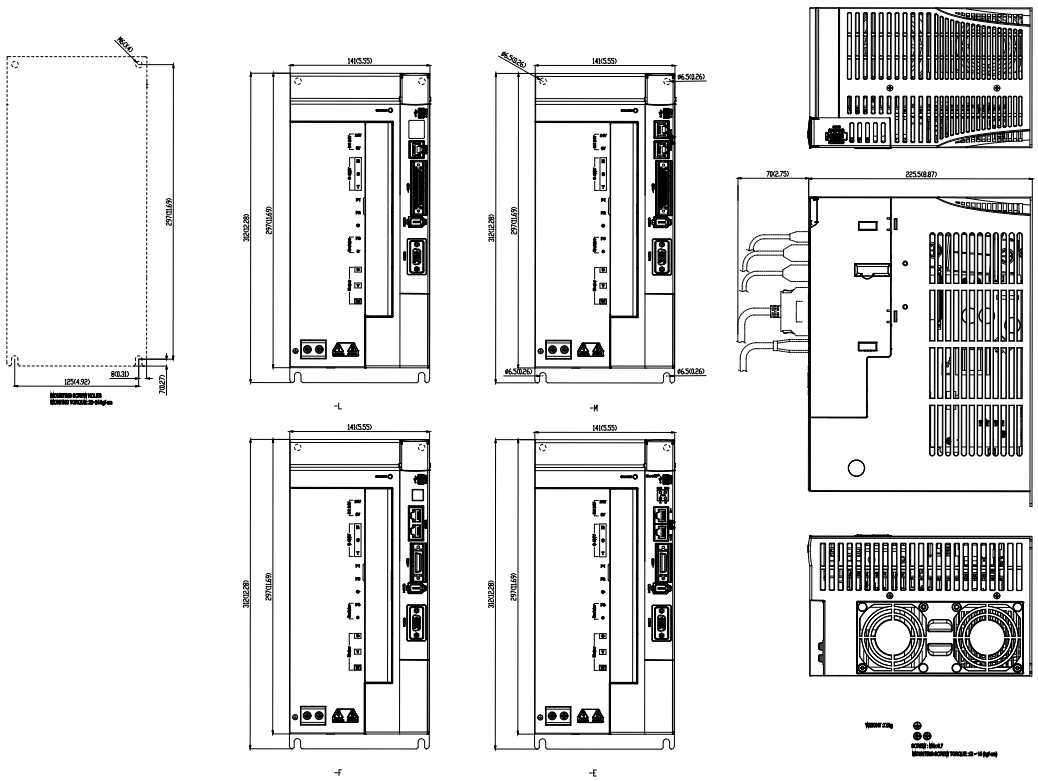




Frame D

11 kW / 15 kW

Weight
7.5 kg



Servo Motor Model Information

ECM-A3 Series Servo Motor

ECM - A3 H - C Y 06 04 R S 1

Product Name
ECM：Electronic Commutation Motor

Series
A3 series

Inertia
H：High inertia
L：Low inertia

Rated Voltage and Speed
C：220V/3,000rpm

Encoder Type
Y: 24-bit absolute optical encoder
Resolution of single turn: 24-bit
Resolution of multiple turns*1:
1: 24-bit incremental optical encoder*2
A: 24-bit absolute magnetic optical encoder
Resolution of single turn: 24-bit
Resolution of multiple turns*1: 16-bit
2: 24-bit incremental magnetic optical encoder*2

*1. Number of turns
*2. Can be used as a single-turn absolute encoder

Motor Frame Size
04：40mm 06：60mm
08：80mm

Rated Power Output
0F：50W 01：100W
02：200W 04：400W
07：750W

Type of Shaft 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 fixed screw)	-	-	C	D
Keyway (with fixed screw holes)	P*	Q*	R	S

*Not standing models

Shaft Diameter
S: Standard connector and standard shaft diameter
7: Standard connector and special shaft diameter (14 mm)*
J: IP67 waterproof connector and standard shaft diameter
K: IP67 waterproof connector and special shaft diameter (14 mm)*

*Shafts of special diameter are used for 400 W motors with the frame size of 80 mm

Special Code
1: Standard products
Z: Refer to the note for dimensions on page 49

ECM-B3 Series Servo Motor

ECM - B3 M - C A 06 04 R B 1

Product Name
ECM: Electronic Commutation Motor

Series
B3 series

Inertia
H: High inertia
M: Medium inertia
L: Low inertia
G: Ultra-High inertia

Rated Voltage and Speed
C: 220V/3,000 rpm
E: 220V/2,000 rpm
F: 220V/1,500 rpm
J: 400V/3,000 rpm
K: 400V/2,000 rpm
L: 400V/1,500 rpm

Encoder Type
A: 24-bit absolute optical encoder
Resolution of single turn: 24-bit
Resolution of multiple turns: 16-bit
B: 24-bit absolute magnetic/optical battery-less encoder
2: 24-bit incremental optical encoder
P: 17-bit absolute magnetic optical encoder
Resolution of single turn: 17-bit
Resolution of multiple turns: 16-bit
M: 17-bit incremental magnetic optical encoder

Motor Frame Size
04：40mm 06：60mm
08：80mm 10：100mm
13：130mm 18：180mm
22：220mm

Rated Power Output
01：100W 02：200W
04：400W 07：750W
08：850W 10：1kW
13：1.3kW 15：1.5kW
18：1.8kW 20：2kW
30：3kW 45：4.5kW
55：5.5kW 75：7.5kW
1B：11kW 1F：15kW

Type of Shaft and Oil Seal	w/o Brake with Oil Seal	with Brake with Oil Seal
Keyway (with fixed screw holes)	R	S

Shaft Diameter	40/60/80	100/130/180/220
B	IP67 Built-in connector. Standard shaft diameter	
S	Standard connector with wire + standard shaft diameter	Mil-spec connector + standard shaft diameter
7	Standard connector with wire + standard shaft diameter* * For F80 400W model	
3		Mil-spec connector + special shaft diameter (42 mm)*

*Shafts of special diameter are used for 400 W motors with the frame size of 80 mm

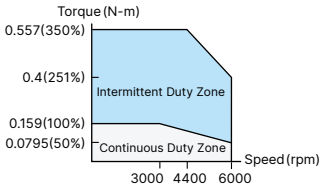
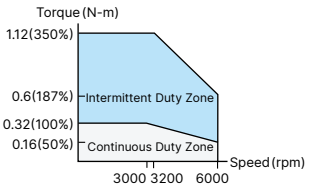
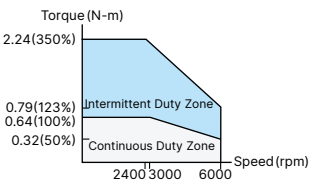
Special Code
1: Standard products

Note: The model information is for reference only. Not all kinds of model permutations are available.
Please contact the distributor near your region or Delta for the details.

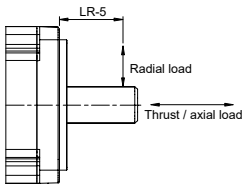
ECM-A3 Series Servo Motor Specifications

Electrical Specifications

Low Inertia Motor ECM-A3L Series

	ECM-A3L-C2 040F[*1]	ECM-A3L-C2 0401[*1]	ECM-A3L-C2 0602[*1]
Rated Power (kW)	0.05	0.1	0.2
Rated Torque (N-m)[*2]	0.159	0.32	0.64
Maximum Torque (N-m)	0.557	1.12	2.24
Rated Speed (rpm)	3,000		
Maximum Speed (rpm)	6,000		
Rated Current (Arms)	0.66	0.9	1.45
Max. Instantaneous Current (Arms)	2.82	3.88	6.2
Rated Power Rate (kW/s)[*3]	11 (9.9)	25.6 (24)	45.5 (34.1)
Rotor Inertia ($\times 10^{-4}$kg.m^2)[*3]	0.0229 (0.0255)	0.04 (0.0426)	0.09 (0.12)
Mechanical Time Constant (ms)[*3]	1.28 (1.44)	0.838 (0.892)	0.64 (0.85)
Torque Constant -KT (N-m/A)	0.241	0.356	0.441
Voltage Constant -KE (mV/(rpm))	9.28	13.3	16.4
Armature Resistance (Ohm)	12.1	9.47	4.9
Armature Inductance (mH)	18.6	16.2	18.52
Electrical Time Constant (ms)	1.54	1.71	3.78
Brake Holding Torque [Nt-m (min)] [*4]	0.32	0.32	1.3
Brake Power Consumption (at 20°C)[W]	6.1	6.1	7.2
Brake Release Time [ms (Max.)]	20	20	20
Brake Pull-In Time [ms (Max.)]	35	35	50
Max. Radial Loading (N)[*5]	78	78	245
Max. Axial Loading (N)[*5]	54	54	74
Weight (kg)[*3]	0.38 (0.68)	0.5 (0.8)	1.1 (1.6)
Derating (%) (with oil seal)	20	10	10
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	2.3 k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	0°C ~ 40°C		
Storage Temperature	-10°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

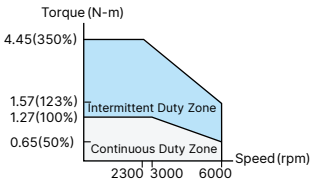
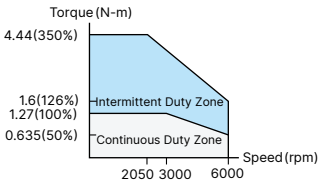
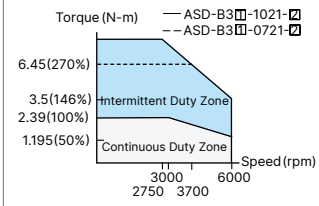
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



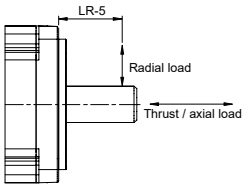
ECM-A3 Series Servo Motor Specifications

Electrical Specifications

Low Inertia Motor ECM-A3L Series

	ECM-A3L-C2 0604*1	ECM-A3L-C2 0804*1	ECM-A3L-C2 0807*1
Rated Power (kW)	0.4	0.4	0.75
Rated Torque (N-m)*2	1.27	1.27	2.39
Maximum Torque (N-m)	4.45	4.44	8.36
Rated Speed (rpm)	3,000		
Maximum Speed (rpm)	6,000		
Rated Current (Arms)	2.65	2.6	5.1
Max. Instantaneous Current (Arms)	10.1	10.6	20.6
Rated Power Rate (kW/s)*3	107.5 (89.6)	45.8 (39.5)	102.2 (93)
Rotor Inertia ($\times 10^{-4}$kg.m^2)*3	0.15 (0.18)	0.352 (0.408)	0.559 (0.614)
Mechanical Time Constant (ms)*3	0.41 (0.5)	0.68 (0.78)	0.44 (0.48)
Torque Constant -KT (N-m/A)	0.479	0.488	0.469
Voltage Constant -KE (mV/(rpm))	18	17.9	17
Armature Resistance (Ohm)	2.27	1.6	0.6
Armature Inductance (mH)	10.27	10.6	4.6
Electrical Time Constant (ms)	4.52	6.63	7.67
Brake Holding Torque [Nt-m (min)] *4	1.3	2.5	2.5
Brake Power Consumption (at 20°C)[W]	7.2	8	8
Brake Release Time [ms (Max.)]	20	20	20
Brake Pull-In Time [ms (Max.)]	50	60	60
Max. Radial Loading (N)*5	245	392	392
Max. Axial Loading (N)*5	74	147	147
Weight (kg)*3	1.4 (1.9)	2.05 (2.85)	2.8 (3.6)
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	1.8k VAC, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	0°C ~ 40°C		
Storage Temperature	-10°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

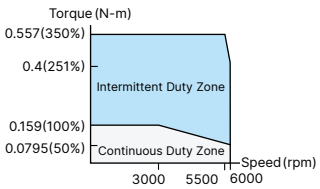
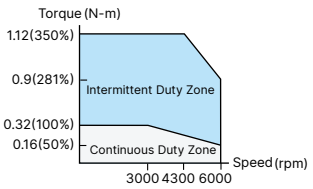
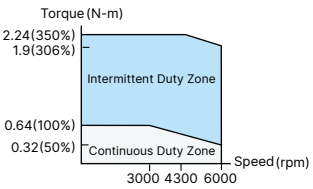
Notes:
1. In the servo motor model name, 1 represents the motor inertia and 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F40, F60, F80: 250 mm x 250 mm x 6 mm
   Material: aluminum
3. ( ) = motor with brake
4. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



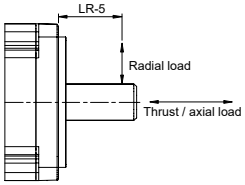
ECM-A3 Series Servo Motor Specifications

Electrical Specifications

ECM-A3H High Inertia Series

	ECM-A3H-C2 040F[*1]	ECM-A3H-C2 0401[*1]	ECM-A3H-C2 0602[*1]
Rated Power (kW)	0.05	0.1	0.2
Rated Torque (N-m)[*2]	0.159	0.32	0.64
Maximum Torque (N-m)	0.557	1.12	2.24
Rated Speed (rpm)	3,000		
Maximum Speed (rpm)	6,000		
Rated Current (Arms)	0.64	0.9	1.45
Max. Instantaneous Current (Arms)	2.59	3.64	5.3
Rated Power Rate (kW/s)[*3]	5.56 (4.89)	13.6 (12.5)	16.4 (14.6)
Rotor Inertia ($\times 10^{-4}$kg.m^2)[*3]	0.0455 (0.0517)	0.0754 (0.0816)	0.25 (0.28)
Mechanical Time Constant (ms)[*3]	2.52 (2.86)	1.43 (1.55)	1.38 (1.54)
Torque Constant -KT (N-m/A)	0.248	0.356	0.441
Voltage Constant -KE (mV/(rpm))	9.54	12.9	16.4
Armature Resistance (Ohm)	12.5	8.34	3.8
Armature Inductance (mH)	13.34	11	8.15
Electrical Time Constant (ms)	1.07	1.32	2.14
Brake Holding Torque [Nt-m (min)] [*4]	0.32	0.32	1.3
Brake Power Consumption (at 20°C)[W]	6.1	6.1	7.2
Brake Release Time [ms (Max.)]	20	20	20
Brake Pull-In Time [ms (Max.)]	35	35	50
Max. Radial Loading (N)[*5]	78	78	245
Max. Axial Loading (N)[*5]	54	54	74
Weight (kg)[*3]	0.38 (0.68)	0.5 (0.8)	1.1 (1.6)
Derating (%) (with oil seal)	20	10	10
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	1.8k V_{AC}, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	0°C ~ 40°C		
Storage Temperature	-10°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)		
Vibration Capacity	2.5G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

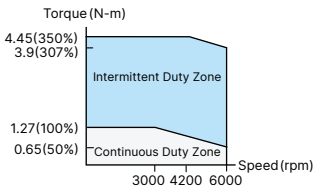
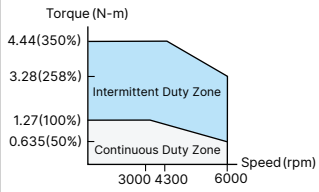
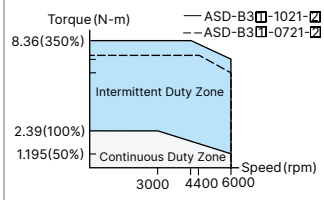
Notes:
1. In the servo motor model name, 1 represents the motor inertia and 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F40, F60, F80: 250 mm x 250 mm x 6 mm
   Material: aluminum
3. ( ) = motor with brake
4. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



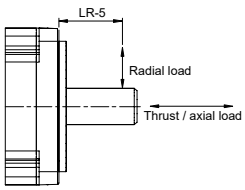
ECM-A3 Series Servo Motor Specifications

Electrical Specifications

High Inertia Motor ECM-A3H Series

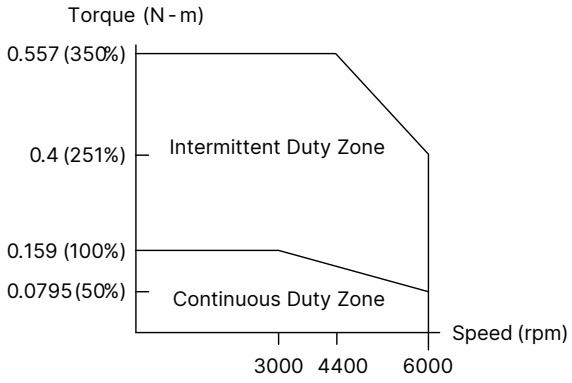
	ECM-A3H-C□2 0604*1	ECM-A3H-C□2 0804*1	ECM-A3H-C□2 0807*1
Rated Power (kW)	0.4	0.4	0.75
Rated Torque (N-m)*2	1.27	1.27	2.39
Maximum Torque (N-m)	4.45	4.44	8.36
Rated Speed (rpm)			
Maximum Speed (rpm)			
Rated Current (Arms)	2.65	2.6	4.61
Max. Instantaneous Current (Arms)	9.8	9.32	16.4
Rated Power Rate (kW/s)*3	35.8 (33.6)	17.5 (15.07)	37.8 (34.41)
Rotor Inertia ($\times 10^{-4}$kg.m^2)*3	0.45 (0.48)	0.92 (1.07)	1.51 (1.66)
Mechanical Time Constant (ms)*3	0.96 (1.02)	1.32 (1.54)	0.93 (1.02)
Torque Constant -KT (N-m/A)	0.479	0.49	0.52
Voltage Constant -KE (mV/(rpm))	17.2	17.9	18.7
Armature Resistance (Ohm)	1.68	1.19	0.57
Armature Inductance (mH)	4.03	4.2	2.2
Electrical Time Constant (ms)	2.40	3.53	3.86
Brake Holding Torque [Nt-m (min)] *4	1.3	2.5	2.5
Brake Power Consumption (at 20°C)[W]	7.2	8	8
Brake Release Time [ms (Max.)]	20	20	20
Brake Pull-In Time [ms (Max.)]	50	60	60
Max. Radial Loading (N)*5	245	392	392
Max. Axial Loading (N)*5	74	147	147
Weight (kg)*3	1.4 (1.9)	2.05 (2.85)	2.8 (3.6)
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	1.8k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	0°C ~ 40°C		
Storage Temperature	-10°C ~ 80°C		
Storage & Operation Humidity	20 - 90%RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

Notes:
1. In the servo motor model name, 1 represents the motor inertia and 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F40, F60, F80: 250 mm x 250 mm x 6 mm
   Material: aluminum
3. ( ) = motor with brake
4. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

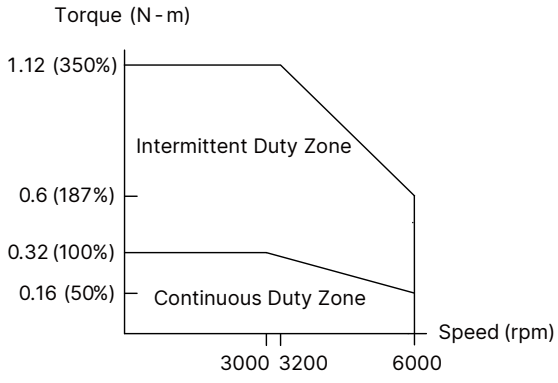


伺服馬達 ECM-A3 系列規格

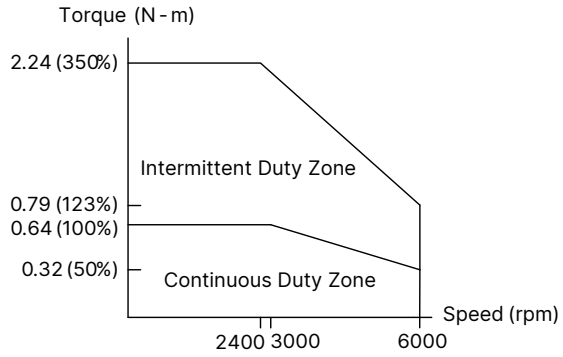
TN 曲線



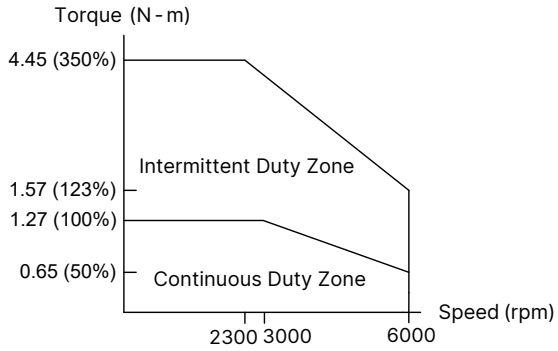
ECM-A3L-C2040F345



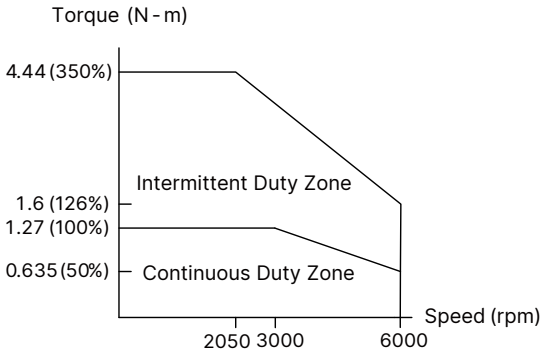
ECM-A3L-C20401345



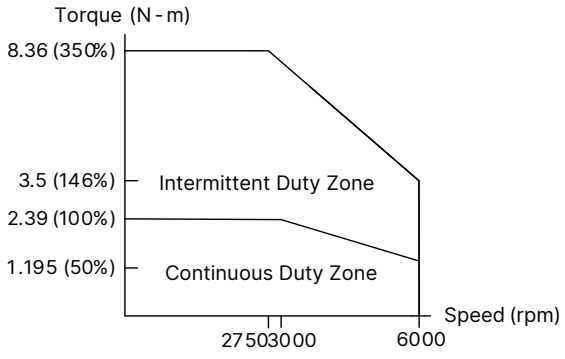
ECM-A3L-C20602345



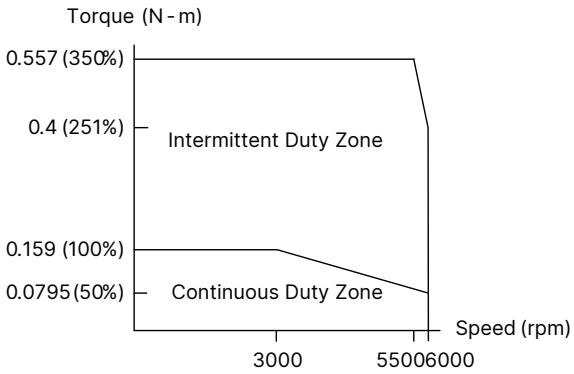
ECM-A3L-C20604345



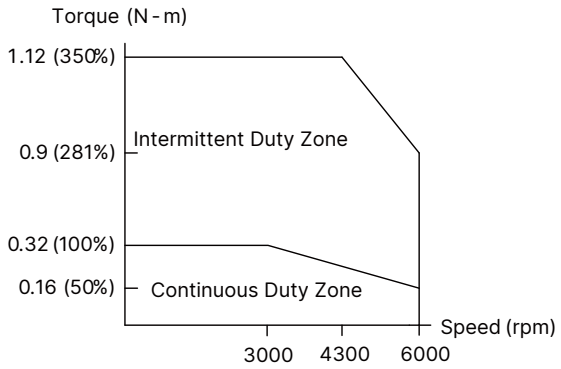
ECM-A3L-C20804345



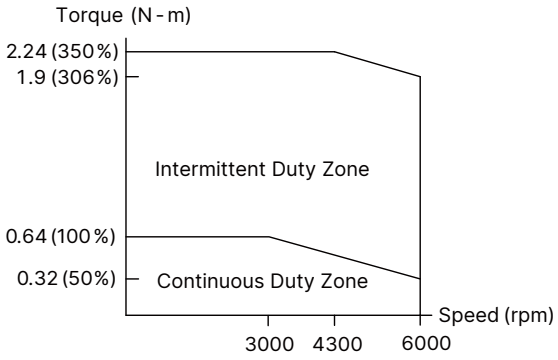
ECM-A3L-C20807345



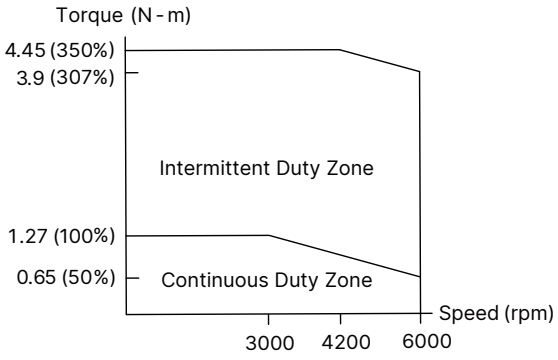
ECM-A3H-C2040F345



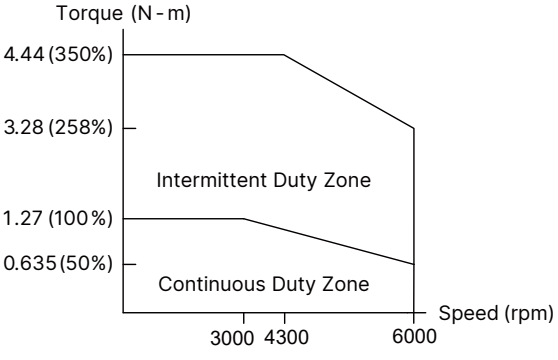
ECM-A3H-C20401345



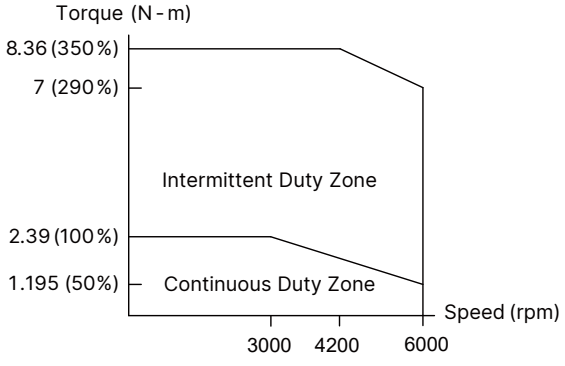
ECM-A3H-C20602345



ECM-A3H-C20604345



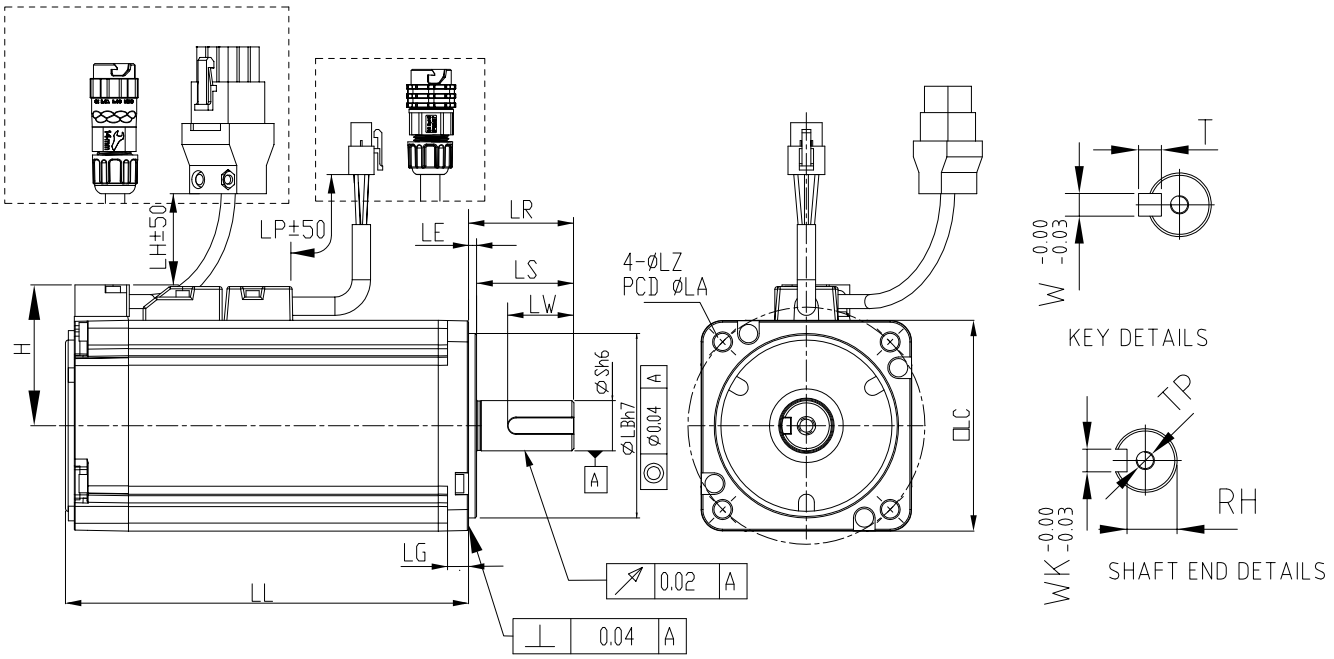
ECM-A3H-C20804345



ECM-A3H-C20807345

ECM-A3 Series Servo Motor Specifications

Dimensions of Motors with Frame Size of 80 mm or Below

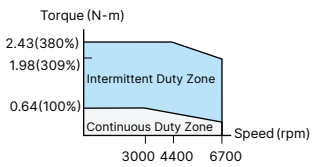
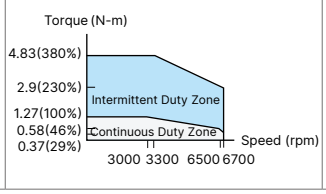
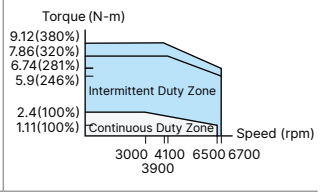


Model	C 2 040F 3 4 5	C 2 0401 3 4 5	C 2 0602 3 4 5	C 2 0604 3 4 5	C 2 0804 3 4 5	C 2 0807 3 4 5
LC	40	40	60	60	80	80
LZ	4.5	4.5	5.5	5.5	6.6	6.6
LA	46	46	70	70	90	90
S	8($^{+0}_{-0.009}$)	8($^{+0}_{0.009}$)	14($^{+0}_{-0.011}$)	14($^{+0}_{-0.011}$)	14($^{+0}_{-0.011}$)	19($^{+0}_{-0.013}$)
LB	30($^{+0}_{-0.021}$)	30($^{+0}_{-0.021}$)	50($^{+0}_{-0.025}$)	50($^{+0}_{-0.025}$)	70($^{+0}_{-0.030}$)	70($^{+0}_{-0.030}$)
LL (w/o brake)	70.6	85.3	84	106	93.7	115.8
LL (with brake)	105.4	120.1	117.6	139.7	131.2	153.2
LH	300	300	300	300	300	300
LP	300	300	300	300	300	300
H	34	34	43.5	43.5	54.5	54.5
LS	21.5	21.5	27	27	27	37
LR	25	25	30	30	30	40
LE	2.5	2.5	3	3	3	3
LG	5	5	7.5	7.5	8	8
LW	16	16	20	20	20	25
RH	6.2	6.2	11	11	11	15.5
WK	3	3	5	5	5	6
W	3	3	5	5	5	6
T	3	3	5	5	5	6
TP	M3 Depth 6	M3 Depth 6	M4 Depth 8	M4 Depth 8	M4 Depth 8	M6 Depth 10

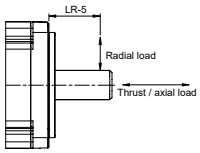
Notes:
1. In the servo motor model name, 2 represents the encoder type, 3 represents the brake or keyway / oil seal type, 4 represents the shaft diameter and connector type, and 5 represents the special code.
2. When the special code of the C2 0807 3 4 5 model is Z, then its LS = 32 and LR = 35.
4. When the 4 in the motor model name is J or K, the connector is an IP67 waterproof connector

ECM-B3 High Inertia Series Servo Motor

Electrical Specifications - 220 V

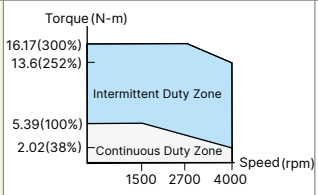
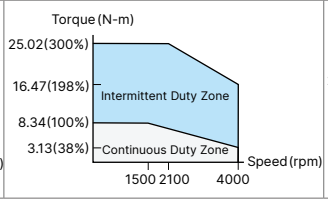
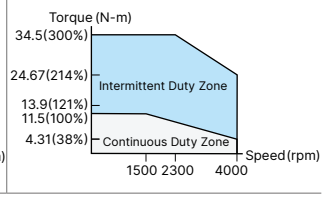
	ECM-B3H-C ② 0602	ECM-B3H-C ② 0604	ECM-B3H-C ② 0807
Rated Power (kW)	0.2	0.4	0.75
Rated Torque (N-m)*2	0.64	1.27	2.4
Maximum Torque (N-m)	2.43	4.83	9.12
Rated Speed (rpm)	3,000		
Maximum Speed (rpm)	6,700		
Rated Current (Arms)	1.48	2.15	4.13
Max. Instantaneous Current (Arms)	5.98	8.37	16.1
Rated Power Rate (kW/s)	15.5	30.8	37.2
Rated Power Rate (kW/s) with brake	14.6	30.0	35.6
Rotor Inertia ($\times 10^{-4}$kg.m^2)	0.265	0.523	1.55
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	0.28	0.538	1.62
Mechanical Time Constant (ms)	1.73	1.23	0.781
Mechanical Time Constant (ms) with brake	1.82	1.27	0.816
Torque Constant -KT (N-m/A)	0.432	0.591	0.581
Voltage Constant -KE (mV/(rpm))	15.5	21.4	20.57
Armature Resistance (Ohm)	4.17	2.85	0.575
Armature Inductance (mH)	5.87	4.50	1.00
Electrical Time Constant (ms)	1.41	1.58	1.74
Weight – without brake (kg)	0.68	1.05	2.15
Weight – with brake (kg)	1.23	1.6	2.95
Max. Radial Loading (N)*5	245	245	392
Max. Axial Loading (N)*5	74	74	147
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20°C)[W]	7.6	7.6	10
Brake Holding Torque [Nt-m (min)] *3	1.3	1.3	3.8
Brake Release Time [ms (Max)]	20	20	40
Brake Pull-In Time [ms (Max)]	50	60	80
Derating (%) (with oil seal)	10	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500V		
Insulation Strength	1.8 kVac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20°C ~ 60°C*4		
Storage Temperature	-20°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

Notes:
1. In the servo motor model name, ① represents the motor inertia and ② represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F40, F60, F80: 250 mm x 250 mm x 6 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
   Do not use it for deceleration or as a dynamic brake
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

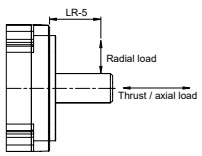


ECM-B3H High Inertia Series Servo Motor

Electrical Specifications - 220 V

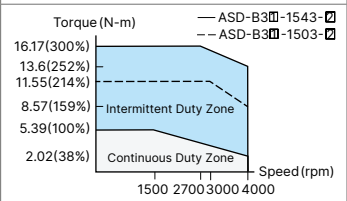
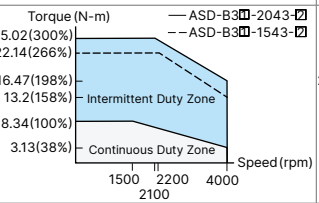
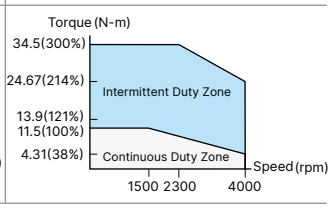
	ECM-B3H-F 2 1308	ECM-B3H-F 2 1313	ECM-B3H-F 2 1318
Rated Power (kW)	0.85	1.3	1.8
Rated Torque (N-m)*2	5.39	8.34	11.5
Maximum Torque (N-m)	16.17	25.02	34.5
Rated Speed (rpm)	1,500		
Maximum Speed (rpm)	4,000		
Rated Current (Arms)	6.65	7.7	11.5
Max. Instantaneous Current (Arms)	20	23.9	36.1
Rated Power Rate (kW/s)	23.4	38.6	58.5
Rated Power Rate (kW/s) with brake	23	38.3	58
Rotor Inertia ($\times 10^{-4}$kg.m^2)	12.44	18	22.6
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	12.62	18.14	22.8
Mechanical Time Constant (ms)	2.48	1.98	1.7
Mechanical Time Constant (ms) with brake	2.52	1.99	1.71
Torque Constant -KT (N-m/A)	0.811	1.08	1
Voltage Constant -KE (mV/(rpm))	29.8	38.8	35.3
Armature Resistance (Ohm)	0.46	0.44	0.253
Armature Inductance (mH)	2.5	2.76	1.7
Electrical Time Constant (ms)	5.43	6.27	6.72
Weight – without brake (kg)	6	7	8
Weight – with brake (kg)	7.5	8.5	9.5
Max. Radial Loading (N)*5	490	686	980
Max. Axial Loading (N)*5	98	343	392
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20°C)[W]	17.6	17.6	17.6
Brake Holding Torque [Nt-m (min)] *3	9.5	9.5	9.5
Brake Release Time [ms (Max)]	60	60	60
Brake Pull-In Time [ms (Max)]	120	120	120
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500V		
Insulation Strength	1.8 kVac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20°C ~ 60°C*4		
Storage Temperature	-20°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

Notes:
1. In the servo motor model name, 1 represents the motor inertia and 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F100: 300 mm x 300 mm x 12 mm
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

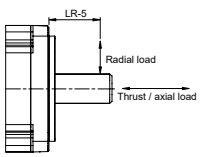


ECM-B3H High Inertia Series Servo Motor

Electrical Specifications - 220 V

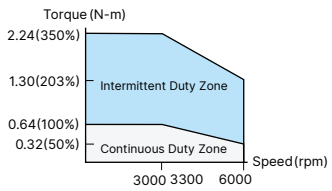
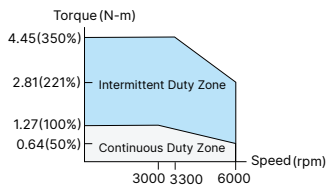
	ECM-B3H-L ☐2 1308	ECM-B3H-L ☐2 1313	ECM-B3H-L ☐2 1318
Rated Power (kW)	0.85	1.3	1.8
Rated Torque (N-m)*2	5.39	8.34	11.5
Maximum Torque (N-m)	16.17	25.02	34.5
Rated Speed (rpm)	1,500		
Maximum Speed (rpm)	4,000		
Rated Current (Arms)	3.35	3.85	5.75
Max. Instantaneous Current (Arms)	10	12	18.1
Rated Power Rate (kW/s)	23.4	38.6	58.5
Rated Power Rate (kW/s) with brake	23	38.3	58
Rotor Inertia ($\times 10^{-4}$kg.m^2)	12.44	18	22.6
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	12.62	18.14	22.8
Mechanical Time Constant (ms)	2.5	1.97	1.69
Mechanical Time Constant (ms) with brake	2.54	1.99	1.71
Torque Constant -KT (N-m/A)	1.61	2.17	2
Voltage Constant -KE (mV/(rpm))	59.5	77.6	70.7
Armature Resistance (Ohm)	1.84	1.76	1.01
Armature Inductance (mH)	10	11	6.8
Electrical Time Constant (ms)	5.43	6.25	6.73
Weight – without brake (kg)	6	7	8
Weight – with brake (kg)	7.5	8.5	9.5
Max. Radial Loading (N)*5	490	686	980
Max. Axial Loading (N)*5	98	343	392
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20˚C)[W]	24	24	24
Brake Holding Torque [Nt-m (min)] *3	16	16	16
Brake Release Time [ms (Max)]	60	60	60
Brake Pull-In Time [ms (Max)]	120	120	120
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500V		
Insulation Strength	1.8 kVac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20˚C ~ 60˚C*4		
Storage Temperature	-20˚C ~ 80˚C		
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

Notes:
1. In the servo motor model name, ☐1 represents the motor inertia and ☐2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F100: 300 mm x 300 mm x 12 mm
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

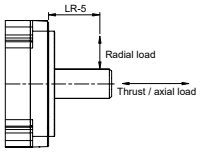


ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

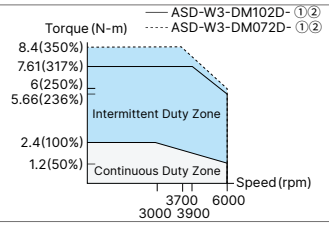
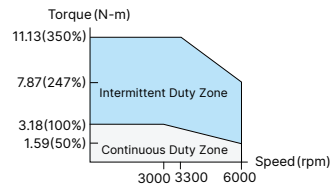
	ECM-B3M-C 2 0602	ECM-B3M-C 2 0604
Rated Power (kW)	0.2	0.4
Rated Torque (N-m)*2	0.64	1.27
Maximum Torque (N-m)	2.24	4.45
Rated Speed (rpm)	3,000	
Maximum Speed (rpm)	6,000	
Rated Current (Arms)	1.42	2.40
Max. Instantaneous Current (Arms)	6.62	9.47
Rated Power Rate (kW/s)	29.05	63.50
Rated Power Rate (kW/s) with brake	27.13	61.09
Rotor Inertia ($\times 10^{-4}$kg.m^2)	0.141	0.254
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	0.151	0.264
Mechanical Time Constant (ms)	0.91	0.52
Mechanical Time Constant (ms) with brake	0.97	0.54
Torque Constant -KT (N-m/A)	0.45	0.53
Voltage Constant -KE (mV/(rpm))	16.96	19.76
Armature Resistance (Ohm)	4.71	2.04
Armature Inductance (mH)	12.18	6.50
Electrical Time Constant (ms)	2.59	3.19
Weight – without brake (kg)	0.9	1.2
Weight – with brake (kg)	1.3	1.6
Max. Radial Loading (N)*5	245	245
Max. Axial Loading (N)*5	74	74
Brake Working Voltage	24 V_{DC} ± 10%	
Brake Power Consumption (at 20°C)[W]	7.6	7.6
Brake Holding Torque [Nt-m (min)] *3	1.3	1.3
Brake Release Time [ms (Max)]	20	20
Brake Pull-In Time [ms (Max)]	50	50
Derating (%) (with oil seal)	10	5
Torque Feature (T-N Curve)		
Insulation Class	Class A (UL), Class B (CE)	
Insulation Resistance	> 100 M Ω , DC 500V	
Insulation Strength	1.8 kVac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20°C ~ 60°C*4	
Storage Temperature	-20°C ~ 80°C	
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)	
Vibration Capacity	2.5 G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

Notes:
1. In the servo motor model name, 1 represents the motor inertia and 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F100: 300 mm x 300 mm x 12 mm
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

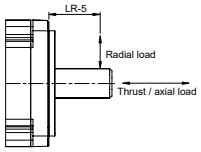


ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

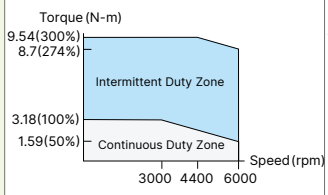
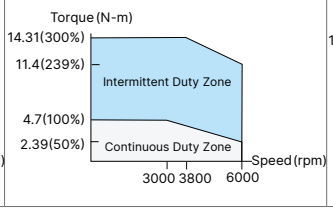
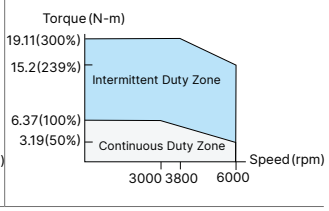
	ECM-B3M-C ② 0807	ECM-B3M-C ② 0810
Rated Power (kW)	0.75	1
Rated Torque (N-m)*2	2.4	3.18
Maximum Torque (N-m)	8.4	11.13
Rated Speed (rpm)	3,000	
Maximum Speed (rpm)	6,000	
Rated Current (Arms)	4.27	5
Max. Instantaneous Current (Arms)	15.8	18.2
Rated Power Rate (kW/s)	53.83	73.8
Rated Power Rate (kW/s) with brake	50.97	72.2
Rotor Inertia ($\times 10^{-4}$kg.m^2)	1.07	1.37
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	1.13	1.4
Mechanical Time Constant (ms)	0.54	0.48
Mechanical Time Constant (ms) with brake	0.57	0.49
Torque Constant -KT (N-m/A)	0.56	0.64
Voltage Constant -KE (mV/(rpm))	20.17	23.15
Armature Resistance (Ohm)	0.55	0.495
Armature Inductance (mH)	2.81	2.63
Electrical Time Constant (ms)	5.11	5.31
Weight – without brake (kg)	2.34	2.82
Weight – with brake (kg)	3.15	3.6
Max. Radial Loading (N)*5	392	392
Max. Axial Loading (N)*5	147	147
Brake Working Voltage	24 V_{DC} ±10%	24 V_{DC} ±10%
Brake Power Consumption (at 20°C)[W]	8.5	10
Brake Holding Torque [Nt-m (min)] *3	3.2	3.8
Brake Release Time [ms (Max)]	40	40
Brake Pull-In Time [ms (Max)]	60	80
Derating (%) (with oil seal)	5	5
Torque Feature (T-N Curve)		
Insulation Class	Class A (UL), Class B (CE)	
Insulation Resistance	> 100 MΩ, DC 500V	
Insulation Strength	1.8 kVac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20°C ~ 60°C*4	
Storage Temperature	-20°C ~ 80°C	
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)	
Vibration Capacity	2.5 G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

Notes:
1. In the servo motor model name, ① represents the motor inertia and ② represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F100: 300 mm x 300 mm x 12 mm
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state. Do not use it for deceleration or as a dynamic brake
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



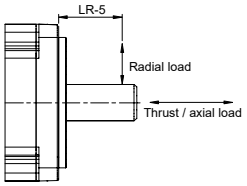
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

	ECM-B3M-C ☐ 1010	ECM-B3M-C ☐ 1015	ECM-B3M-C ☐ 1020
Rated Power (kW)	1	1.5	2
Rated Torque (N-m)*2	3.18	4.77	6.37
Maximum Torque (N-m)	9.54	14.3	19.1
Rated Speed (rpm)	3,000		
Maximum Speed (rpm)	6,000		
Rated Current (Arms)	6.05	7.48	9.96
Max. Instantaneous Current (Arms)	18.4	22.8	30.7
Rated Power Rate (kW/s)	36.4	61.7	86.7
Rated Power Rate (kW/s) with brake	33	57.3	82
Rotor Inertia ($\times 10^{-4}$kg.m^2)	2.78	3.69	4.68
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	3.06	3.97	4.95
Mechanical Time Constant (ms)	0.741	0.552	0.523
Mechanical Time Constant (ms) with brake	0.815	0.594	0.554
Torque Constant -KT (N-m/A)	0.526	0.638	0.64
Voltage Constant -KE (mV/(rpm))	19.8	23.8	23.7
Armature Resistance (Ohm)	0.265	0.217	0.162
Armature Inductance (mH)	1.86	1.71	1.23
Electrical Time Constant (ms)	7.02	7.88	7.59
Weight – without brake (kg)	3.56	4.37	5.09
Weight – with brake (kg)	4.88	5.68	6.51
Max. Radial Loading (N)*5	490	490	490
Max. Axial Loading (N)*5	196	196	196
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20˚C)[W]	17.6	17.6	17.6
Brake Holding Torque [Nt-m (min)] *3	9.5	9.5	9.5
Brake Release Time [ms (Max)]	50	50	50
Brake Pull-In Time [ms (Max)]	110	110	110
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class F (UL), Class F (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	1.8k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20˚C - 60˚C*4		
Storage Temperature	-20˚C - 80˚C		
Storage & Operation Humidity	20 - 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

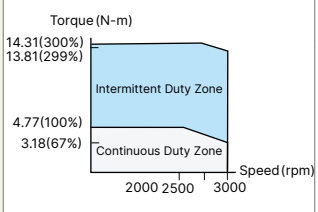
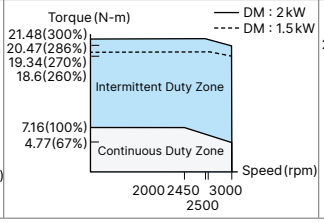
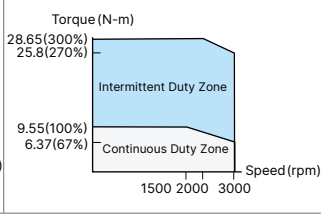
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

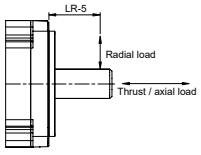


ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

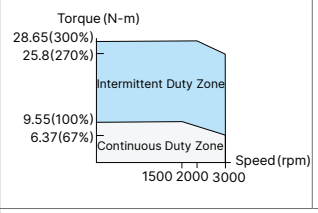
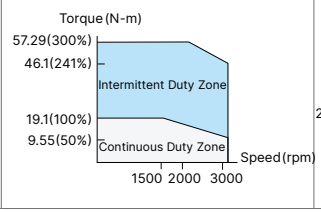
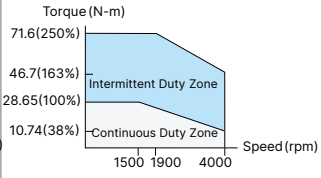
	ECM-B3M-E ☐ 1310	ECM-B3M-E ☐ 1315	ECM-B3M-E ☐ 1320
Rated Power (kW)	1	1.5	2
Rated Torque (N-m)*2	4.77	7.16	9.55
Maximum Torque (N-m)	14.3	21.48	28.65
Rated Speed (rpm)	2,000		
Maximum Speed (rpm)	3,000		
Rated Current (Arms)	5.96	8.17	10.59
Max. Instantaneous Current (Arms)	19.9	26.82	34.2
Rated Power Rate (kW/s)	29.21	45.69	62.25
Rated Power Rate (kW/s) with brake	28.66	45.09	61.62
Rotor Inertia ($\times 10^{-4}$kg.m^2)	7.79	11.22	14.65
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	7.94	11.37	14.8
Mechanical Time Constant (ms)	1.46	1.1	1.03
Mechanical Time Constant (ms) with brake	1.49	1.12	1.04
Torque Constant -KT (N-m/A)	0.8	0.88	0.9
Voltage Constant -KE (mV/(rpm))	29.3	31.69	32.7
Armature Resistance (Ohm)	0.419	0.26	0.198
Armature Inductance (mH)	4	2.81	2.18
Electrical Time Constant (ms)	9.55	10.81	11.01
Weight – without brake (kg)	4.9	6.7	7
Weight – with brake (kg)	6.3	7.4	8.5
Max. Radial Loading (N)*5	490	686	980
Max. Axial Loading (N)*5	98	343	392
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20°C)[W]	21.5	21.5	21.5
Brake Holding Torque [Nt-m (min)] *3	10	10	10
Brake Release Time [ms (Max)]	50	50	50
Brake Pull-In Time [ms (Max)]	110	110	110
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ , DC 500V		
Insulation Strength	1.8 kVac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20°C ~ 60°C*4		
Storage Temperature	-20°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F180: 550 mm x 550 mm x 30 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



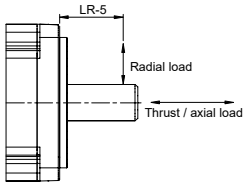
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

	ECM-B3M-E ☐ 1820	ECM-B3M-F ☐ 1830	ECM-B3M-F ☐ 1845
Rated Power (kW)	2	3	4.5
Rated Torque (N-m)*2	9.55	19.1	28.65
Maximum Torque (N-m)	28.65	57.29	71.6
Rated Speed (rpm)	2,000	1,500	1,500
Maximum Speed (rpm)	3,000	3,000	4,000
Rated Current (Arms)	11.43	18.21	26.6
Max. Instantaneous Current (Arms)	36.21	58.9	70.7
Rated Power Rate (kW/s)	31.33	68.02	121
Rated Power Rate (kW/s) with brake	30.02	66.45	119
Rotor Inertia ($\times10^{-4}$kg.m^2)	29.11	53.63	67.73
Rotor Inertia ($\times10^{-4}$kg.m^2) with brake	30.38	54.9	69.15
Mechanical Time Constant (ms)	1.83	1.21	1.06
Mechanical Time Constant (ms) with brake	1.91	1.24	1.08
Torque Constant -KT (N-m/A)	0.836	1.05	1.08
Voltage Constant -KE (mV/(rpm))	31.6	37.9	39.4
Armature Resistance (Ohm)	0.159	0.086	0.0637
Armature Inductance (mH)	2.34	1.52	1.17
Electrical Time Constant (ms)	14.72	17.67	18.4
Weight – without brake (kg)	10	13.9	16.5
Weight – with brake (kg)	13.7	17.6	20.2
Max. Radial Loading (N)*5	1470	1470	1470
Max. Axial Loading (N)*5	490	490	490
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20°C)[W]	31	31	55
Brake Holding Torque [Nt-m (min)] *3	25	25	31
Brake Release Time [ms (Max)]	30	30	50
Brake Pull-In Time [ms (Max)]	120	120	150
Derating (%) (with oil seal)	0	5	0
Torque Feature (T-N Curve)			
Insulation Class	Class F (UL), Class F (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	1.8k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20°C - 60°C*4		
Storage Temperature	-20°C - 80°C		
Storage & Operation Humidity	20 - 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

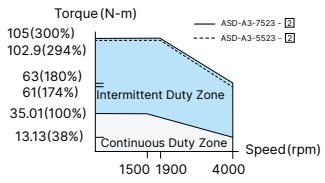
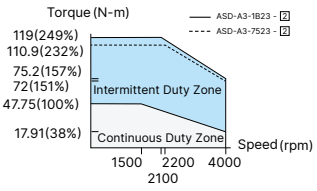
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



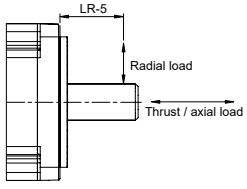
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

	ECM-B3M-F ☐2 1855	ECM-B3M-F ☐2 1875
Rated Power (kW)	5.5	7.5
Rated Torque (N-m)*2	35.01	47.75
Maximum Torque (N-m)	105	119
Rated Speed (rpm)	1,500	1,500
Maximum Speed (rpm)	4,000	4,000
Rated Current (Arms)	30.7	44.2
Max. Instantaneous Current (Arms)	98.6	113.4
Rated Power Rate (kW/s)	124	169
Rated Power Rate (kW/s) with brake	122	167
Rotor Inertia ($\times 10^{-4}$kg.m^2)	98.88	134.95
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	100.1	136.24
Mechanical Time Constant (ms)	1.01	1.01
Mechanical Time Constant (ms) with brake	1.02	1.02
Torque Constant -KT (N-m/A)	1.14	1.08
Voltage Constant -KE (mV/(rpm))	40.9	38.7
Armature Resistance (Ohm)	0.0454	0.03
Armature Inductance (mH)	0.867	0.568
Electrical Time Constant (ms)	19.1	18.9
Weight – without brake (kg)	21.2	27.2
Weight – with brake (kg)	24.9	30.9
Max. Radial Loading (N)*5	1764	1764
Max. Axial Loading (N)*5	588	588
Brake Working Voltage	24 V_{DC} ±10%	
Brake Power Consumption (at 20°C)[W]	55	55
Brake Holding Torque [Nt-m (min)] *3	31	31
Brake Release Time [ms (Max)]	50	50
Brake Pull-In Time [ms (Max)]	150	150
Derating (%) (with oil seal)	0	0
Torque Feature (T-N Curve)		
Insulation Class	Class F (UL), Class F (CE)	
Insulation Resistance	> 100 MΩ, DC 500 V	
Insulation Strength	1.8k Vac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20°C - 60°C*4	
Storage Temperature	-20°C - 80°C	
Storage & Operation Humidity	20 - 90% RH (non-condensing)	
Vibration Capacity	2.5 G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

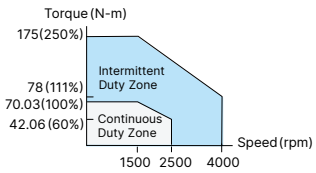
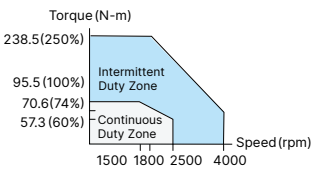
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



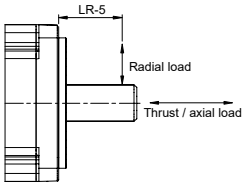
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 220 V

	B3M-F ☐2 221B	B3M-F ☐2 221F
Rated Power (kW)	11	15
Rated Torque (N-m)*2	70.03	95.49
Maximum Torque (N-m)	175	238.5
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	4000	
Rated Current (Arms)	45.1	72.8
Max. Instantaneous Current (Arms)	120	192.4
Rated Power Rate (kW/s)	162	228
Rated Power Rate (kW/s) with brake	162	227
Rotor Inertia ($\times10^{-4}$kg.m^2)	302.2	400
Rotor Inertia ($\times10^{-4}$kg.m^2) with brake	303.1	400.9
Mechanical Time Constant (ms)	1.07	1.04
Mechanical Time Constant (ms) with brake	1.08	1.04
Torque Constant -KT (N-m/A)	1.55	1.31
Voltage Constant -KE (mV/(rpm))	55.1	47
Armature Resistance (Ohm)	0.029	0.0153
Armature Inductance (mH)	1.08	0.583
Electrical Time Constant (ms)	37.2	38.1
Weight – without brake (kg)	50.9	62.1
Weight – with brake (kg)	58.2	69.4
Max. Radial Loading (N)*5	3300	3300
Max. Axial Loading (N)*5	1100	1100
Brake Working Voltage	24V$_{DC}$ ± 10%	
Brake Power Consumption (at 20˚C)[W]	115	115
Brake Holding Torque [Nt-m (min)] *3	32	32
Brake Release Time [ms (Max)]	100	100
Brake Pull-In Time [ms (Max)]	300	300
Derating (%) (with oil seal)	0	0
Torque Feature (T-N Curve)		
Insulation Class	Class A (UL), Class B (CE)	
Insulation Resistance	> 100 MΩ, DC 500 V	
Insulation Strength	2.3k Vac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20˚C ~ 60˚C*4	
Storage Temperature	-20˚C ~ 80˚C	
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)	
Vibration Capacity	2.5G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

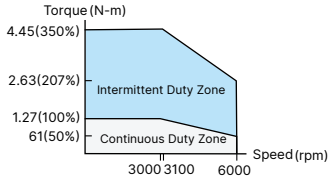
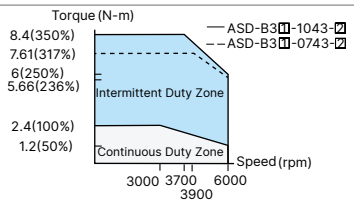
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

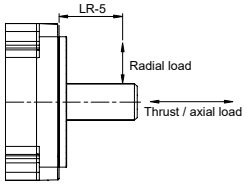


ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 400 V

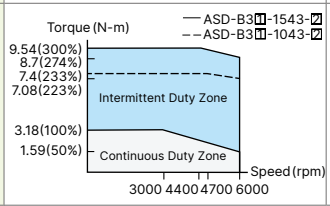
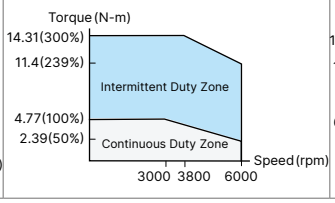
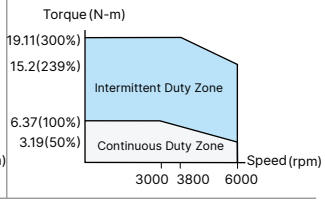
	ECM-B3M-J ☐ 0604	ECM-B3M-J ☐ 0807
Rated Power (kW)	0.4	0.75
Rated Torque (N-m)*2	1.27	2.4
Maximum Torque (N-m)	4.45	8.4
Rated Speed (rpm)	3,000	
Maximum Speed (rpm)	6,000	
Rated Current (Arms)	1.35	2.15
Max. Instantaneous Current (Arms)	5.2	7.9
Rated Power Rate (kW/s)	63.5	53.83
Rated Power Rate (kW/s) with brake	61.09	50.97
Rotor Inertia ($\times 10^{-4}$kg.m^2)	0.254	1.07
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	0.264	1.13
Mechanical Time Constant (ms)	0.53	0.55
Mechanical Time Constant (ms) with brake	0.55	0.58
Torque Constant -KT (N-m/A)	0.94	1.12
Voltage Constant -KE (mV/(rpm))	34.66	40.34
Armature Resistance (Ohm)	6.47	2.2
Armature Inductance (mH)	20.6	11.2
Electrical Time Constant (ms)	3.18	5.09
Weight – without brake (kg)	1.2	2.34
Weight – with brake (kg)	1.6	3.15
Max. Radial Loading (N)*5	245	392
Max. Axial Loading (N)*5	74	147
Brake Working Voltage	24 V_{DC} ±10%	
Brake Power Consumption (at 20°C)[W]	7.6	8.5
Brake Holding Torque [Nt-m (min)] *3	1.3	3.2
Brake Release Time [ms (Max)]	20	40
Brake Pull-In Time [ms (Max)]	50	60
Derating (%) (with oil seal)	5	5
Torque Feature (T-N Curve)		
Insulation Class	Class A (UL), Class B (CE)	
Insulation Resistance	> 100 MΩ, DC 500 V	
Insulation Strength	2.3 k Vac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20°C ~ 60°C*4	
Storage Temperature	-20°C ~ 80°C	
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)	
Vibration Capacity	2.5 G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F100: 300 mm x 300 mm x 12 mm
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



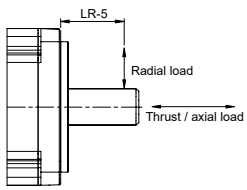
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 400 V

	ECM-B3M-J ☐2 1010	ECM-B3M-J ☐2 1015	ECM-B3M-J ☐2 1020
Rated Power (kW)	1	1.5	2
Rated Torque (N-m)*2	3.18	4.77	6.37
Maximum Torque (N-m)	9.54	14.3	19.1
Rated Speed (rpm)	3,000		
Maximum Speed (rpm)	6,000		
Rated Current (Arms)	3.03	3.73	5
Max. Instantaneous Current (Arms)	9.21	11.4	15.3
Rated Power Rate (kW/s)	36.4	61.7	86.7
Rated Power Rate (kW/s) with brake	33	57.3	82
Rotor Inertia ($\times10^{-4}$kg.m^2)	2.78	3.69	4.68
Rotor Inertia ($\times10^{-4}$kg.m^2) with brake	3.06	3.97	4.95
Mechanical Time Constant (ms)	0.737	0.546	0.528
Mechanical Time Constant (ms) with brake	0.811	0.587	0.559
Torque Constant -KT (N-m/A)	1.05	1.28	1.27
Voltage Constant -KE (mV/(rpm))	39.5	47.8	47.2
Armature Resistance (Ohm)	1.05	0.864	0.646
Armature Inductance (mH)	7.5	6.63	4.89
Electrical Time Constant (ms)	7.14	7.67	7.57
Weight – without brake (kg)	3.56	4.37	5.09
Weight – with brake (kg)	4.88	5.68	6.505
Max. Radial Loading (N)*5	490	490	490
Max. Axial Loading (N)*5	196	196	196
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20˚C)[W]	17.6	17.6	17.6
Brake Holding Torque [Nt-m (min)] *3	9.5	9.5	9.5
Brake Release Time [ms (Max)]	50	50	50
Brake Pull-In Time [ms (Max)]	110	110	110
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	2.3 k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20˚C ~ 60˚C*4		
Storage Temperature	-20˚C ~ 80˚C		
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

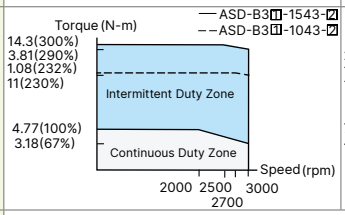
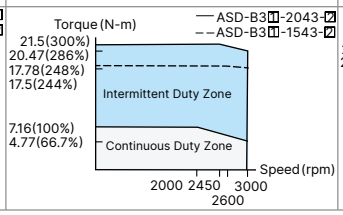
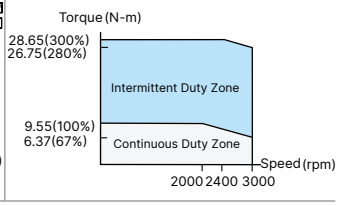
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

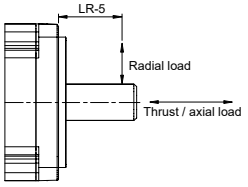


ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 400 V

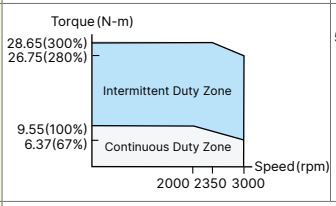
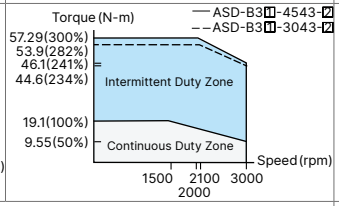
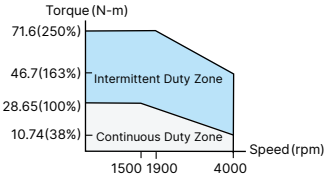
	ECM-B3M-K ☐2 1310	ECM-B3M-K ☐2 1315	ECM-B3M-K ☐2 1320
Rated Power (kW)	1	1.5	2
Rated Torque (N-m)*2	4.77	7.16	9.55
Maximum Torque (N-m)	14.3	21.48	28.65
Rated Speed (rpm)	2,000		
Maximum Speed (rpm)	3,000		
Rated Current (Arms)	3	4.09	5.3
Max. Instantaneous Current (Arms)	9.95	13.37	17.1
Rated Power Rate (kW/s)	29.21	45.69	62.25
Rated Power Rate (kW/s) with brake	28.66	45.09	61.62
Rotor Inertia ($\times 10^{-4}$kg.m^2)	7.79	11.22	14.65
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	7.94	11.37	14.8
Mechanical Time Constant (ms)	1.47	1.1	1.03
Mechanical Time Constant (ms) with brake	1.5	1.12	1.04
Torque Constant -KT (N-m/A)	1.59	1.75	1.8
Voltage Constant -KE (mV/(rpm))	58.6	63.38	65.4
Armature Resistance (Ohm)	1.68	1.04	0.792
Armature Inductance (mH)	16	11.2	8.72
Electrical Time Constant (ms)	9.52	10.8	11
Weight – without brake (kg)	4.9	6	7
Weight – with brake (kg)	6.3	7.4	8.5
Max. Radial Loading (N)*5	490	686	980
Max. Axial Loading (N)*5	98	343	392
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20°C)[W]	21.5	21.5	21.5
Brake Holding Torque [Nt-m (min)] *3	10	10	10
Brake Release Time [ms (Max)]	50	50	50
Brake Pull-In Time [ms (Max)]	110	110	110
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	2.3 k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20°C ~ 60°C*4		
Storage Temperature	-20°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



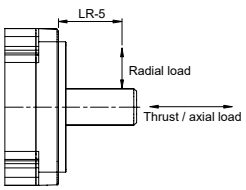
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 400 V

	ECM-B3M-K ☐ 1820	ECM-B3M-L ☐ 1830	ECM-B3M-L ☐ 1845
Rated Power (kW)	2	3	4.5
Rated Torque (N-m)*2	9.55	19.1	28.65
Maximum Torque (N-m)	28.65	57.29	71.6
Rated Speed (rpm)	2,000	1,500	1,500
Maximum Speed (rpm)	3,000	3,000	4,000
Rated Current (Arms)	5.7	9.1	13.3
Max. Instantaneous Current (Arms)	18.1	29.45	35.35
Rated Power Rate (kW/s)	31.33	68.02	121
Rated Power Rate (kW/s) with brake	30.02	66.45	119
Rotor Inertia ($\times 10^{-4}$kg.m^2)	29.11	53.63	67.73
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	30.38	54.9	69.15
Mechanical Time Constant (ms)	1.83	1.21	1.07
Mechanical Time Constant (ms) with brake	1.91	1.24	1.09
Torque Constant -KT (N-m/A)	1.68	2.1	2.15
Voltage Constant -KE (mV/(rpm))	63.2	75.8	78.8
Armature Resistance (Ohm)	0.636	0.344	0.255
Armature Inductance (mH)	9.36	6.08	4.68
Electrical Time Constant (ms)	14.72	17.67	18.4
Weight – without brake (kg)	10	13.9	16.5
Weight – with brake (kg)	13.7	17.6	20.2
Max. Radial Loading (N)*5	1,470	1,470	1,470
Max. Axial Loading (N)*5	490	490	490
Brake Working Voltage	24 V_{DC} ±10%		
Brake Power Consumption (at 20°C)[W]	31	31	31
Brake Holding Torque [Nt-m (min)] *3	25	25	55
Brake Release Time [ms (Max)]	30	30	50
Brake Pull-In Time [ms (Max)]	120	120	150
Derating (%) (with oil seal)	5	5	0
Torque Feature (T-N Curve)			
Insulation Class	Class A (UL), Class B (CE)		Class F (UL), Class F (CE)
Insulation Resistance	> 100 MΩ, DC 500 V		
Insulation Strength	2.3k Vac, 1 sec		
Vibration Level (μm)	V15		
Operating Temperature	-20°C ~ 60°C*4		
Storage Temperature	-20°C ~ 80°C		
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)		
Vibration Capacity	2.5 G		
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))		
Certifications			

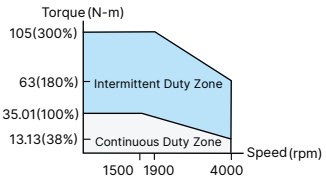
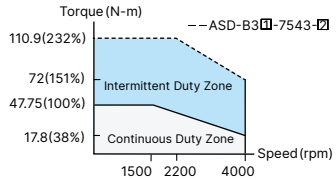
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

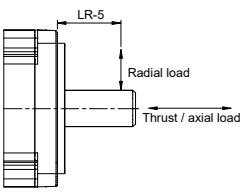


ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 400 V

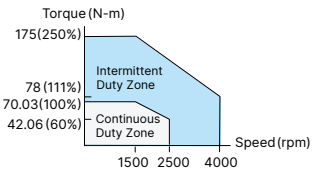
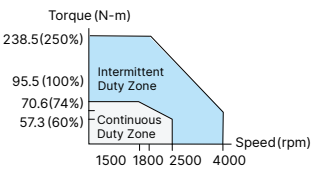
	ECM-B3M-L ☐2 1855	ECM-B3M-L ☐2 1875
Rated Power (kW)	5.5	7.5
Rated Torque (N-m)*2	35.01	47.75
Maximum Torque (N-m)	105	119
Rated Speed (rpm)	1,500	
Maximum Speed (rpm)	4,000	
Rated Current (Arms)	15.3	22.1
Max. Instantaneous Current (Arms)	49.29	56.68
Rated Power Rate (kW/s)	124	169
Rated Power Rate (kW/s) with brake	122	167
Rotor Inertia ($\times 10^{-4}$kg.m^2)	98.88	134.95
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	100.1	136.24
Mechanical Time Constant (ms)	1.01	1.01
Mechanical Time Constant (ms) with brake	1.02	1.02
Torque Constant -KT (N-m/A)	2.29	2.16
Voltage Constant -KE (mV/(rpm))	81.8	77.4
Armature Resistance (Ohm)	0.182	0.12
Armature Inductance (mH)	3.48	2.27
Electrical Time Constant (ms)	19.1	18.9
Weight – without brake (kg)	21.2	27.2
Weight – with brake (kg)	24.9	30.9
Max. Radial Loading (N)*5	1764	1764
Max. Axial Loading (N)*5	588	588
Brake Working Voltage	24 V_{DC} ±10%	
Brake Power Consumption (at 20°C)[W]	31	31
Brake Holding Torque [Nt-m (min)] *3	55	55
Brake Release Time [ms (Max)]	50	50
Brake Pull-In Time [ms (Max)]	150	150
Derating (%) (with oil seal)	0	0
Torque Feature (T-N Curve)		
Insulation Class	Class F (UL), Class F (CE)	
Insulation Resistance	> 100 MΩ, DC 500 V	
Insulation Strength	2.3 k Vac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20°C ~ 60°C*4	
Storage Temperature	-20°C ~ 80°C	
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)	
Vibration Capacity	2.5 G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation



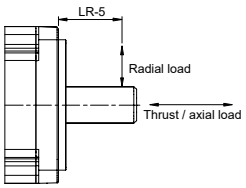
ECM-B3M Medium inertia Series Servo Motor

Electrical Specifications - 400 V

	ECM-B3M- L 2 221B	ECM-B3M- L 2 221F
Rated Power (kW)	11	15
Rated Torque (N-m)*2	70.03	95.49
Maximum Torque (N-m)	175	238.5
Rated Speed (rpm)	1,500	
Maximum Speed (rpm)	4,000	
Rated Current (Arms)	21.2	29.2
Max. Instantaneous Current (Arms)	56.5	77
Rated Power Rate (kW/s)	162	228
Rated Power Rate (kW/s) with brake	162	227
Rotor Inertia ($\times10^{-4}$kg.m^2)	302.2	400
Rotor Inertia ($\times10^{-4}$kg.m^2) with brake	303.1	400.9
Mechanical Time Constant (ms)	1.03	0.94
Mechanical Time Constant (ms) with brake	1.04	0.94
Torque Constant -KT (N-m/A)	3.3	3.27
Voltage Constant -KE (mV/(rpm))	118	118
Armature Resistance (Ohm)	0.127	0.0862
Armature Inductance (mH)	3.69	2.43
Electrical Time Constant (ms)	29.1	28.2
Weight – without brake (kg)	50.9	62.1
Weight – with brake (kg)	58.2	69.4
Max. Radial Loading (N)*5	3300	3300
Max. Axial Loading (N)*5	1100	1100
Brake Working Voltage	24 V_{DC} ±10%	
Brake Power Consumption (at 20°C)[W]	32	32
Brake Holding Torque [Nt-m (min)] *3	115	115
Brake Release Time [ms (Max)]	100	100
Brake Pull-In Time [ms (Max)]	300	300
Derating (%) (with oil seal)	0	0
Torque Feature (T-N Curve)		
Insulation Class	Class A (UL), Class B (CE)	Class F (UL), Class F (CE)
Insulation Resistance	> 100 MΩ, DC 500 V	
Insulation Strength	2.3 k Vac, 1 sec	
Vibration Level (μm)	V15	
Operating Temperature	-20°C ~ 60°C*4	
Storage Temperature	-20°C ~ 80°C	
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)	
Vibration Capacity	2.5 G	
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))	
Certifications		

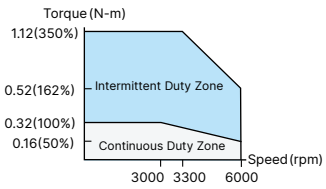
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40ºC operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40ºC, refer to the power derating curves of B3 motors on page 37.

5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

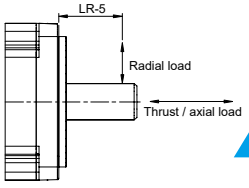


ECM-B3L Low Inertia Series Servo Motor

Electrical Specifications - 220 V

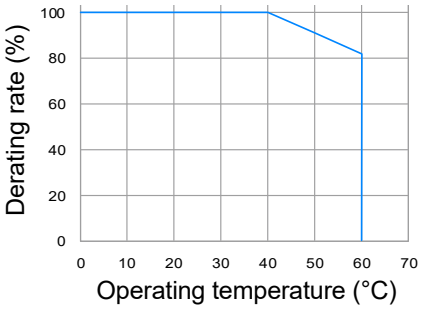
	ECM-B3L - C ☐2 0401
Rated Power (kW)	0.1
Rated Torque (N-m)*2	0.32
Maximum Torque (N-m)	1.12
Rated Speed (rpm)	3,000
Maximum Speed (rpm)	6,000
Rated Current (Arms)	0.857
Max. Instantaneous Current (Arms)	3.44
Rated Power Rate (kW/s)	34.25
Rated Power Rate (kW/s) with brake	32.51
Rotor Inertia ($\times 10^{-4}$kg.m^2)	0.0299
Rotor Inertia ($\times 10^{-4}$kg.m^2) with brake	0.0315
Mechanical Time Constant (ms)	0.5
Mechanical Time Constant (ms) with brake	0.53
Torque Constant -KT (N-m/A)	0.374
Voltage Constant -KE (mV/(rpm))	13.8
Armature Resistance (Ohm)	8.22
Armature Inductance (mH)	19.1
Electrical Time Constant (ms)	2.32
Weight – without brake (kg)	0.5
Weight – with brake (kg)	0.7
Max. Radial Loading (N)*5	78
Max. Axial Loading (N)*5	54
Brake Working Voltage	24 V_{DC} ± 10%
Brake Power Consumption (at 20°C)[W]	6.1
Brake Holding Torque [Nt-m (min)] *3	0.3
Brake Release Time [ms (Max)]	20
Brake Pull-In Time [ms (Max)]	35
Derating (%) (with oil seal)	10
Torque Feature (T-N Curve)	
Insulation Class	Class A (UL), Class B (CE)
Insulation Resistance	> 100 MΩ, DC 500 V
Insulation Strength	1.8 k V_{AC}, 1 sec
Vibration Level (μm)	V15
Operating Temperature	-20°C ~ 60°C*4
Storage Temperature	-20°C ~ 80°C
Storage & Operation Humidity	20 ~ 90% RH (non-condensing)
Vibration Capacity	2.5 G
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))
Certifications	

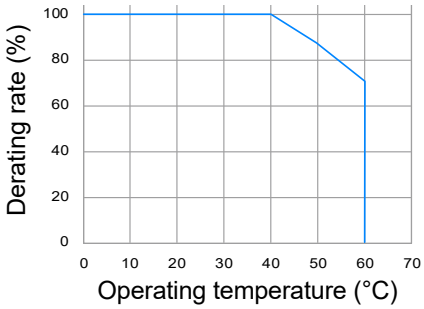
Notes:
1. In the servo motor model name, 2 represents the encoder type.
2. The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.
   F130: 400 mm x 400 mm x 20 mm
   Material: aluminum
3. The built-in servo motor brake is only for keeping the object in a stopped state.
4. If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.
5. Please follow the max. tolerant loading of the motor shaft end listed below during operation

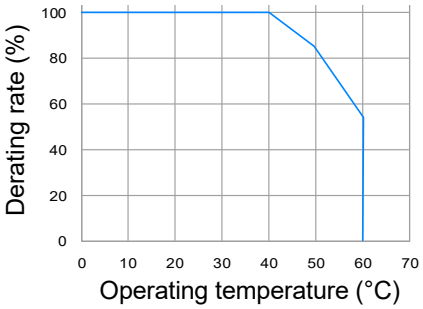


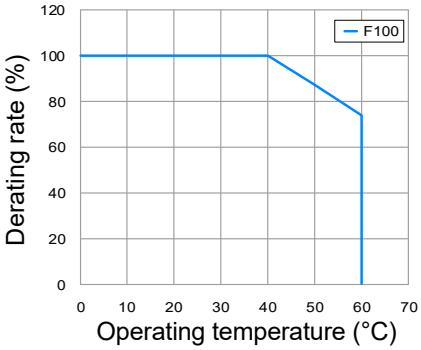
ECM-B3 Series Servo Motor Specifications

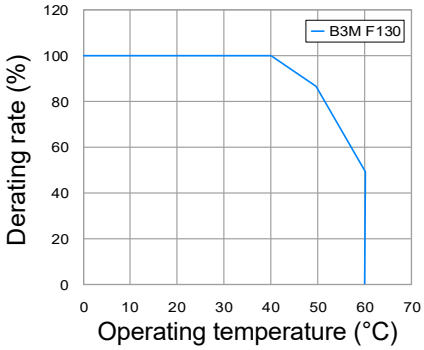
Power Derating Curves

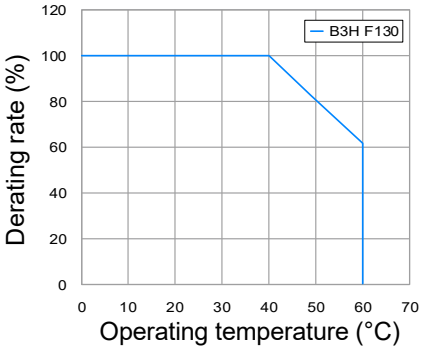


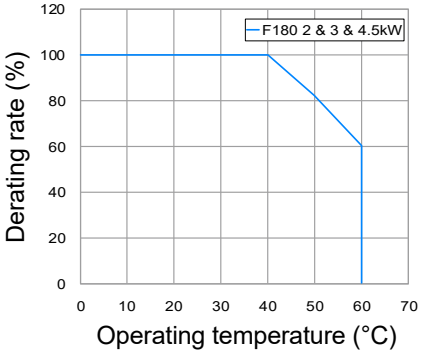


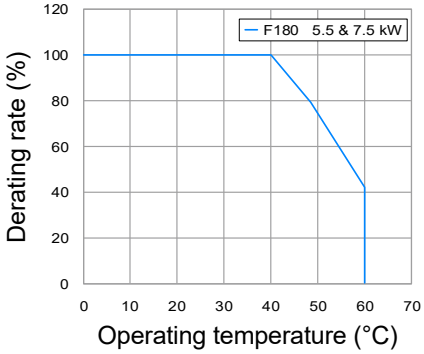


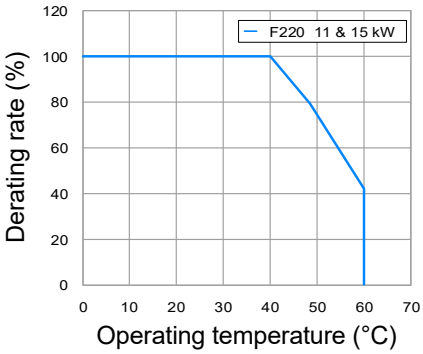








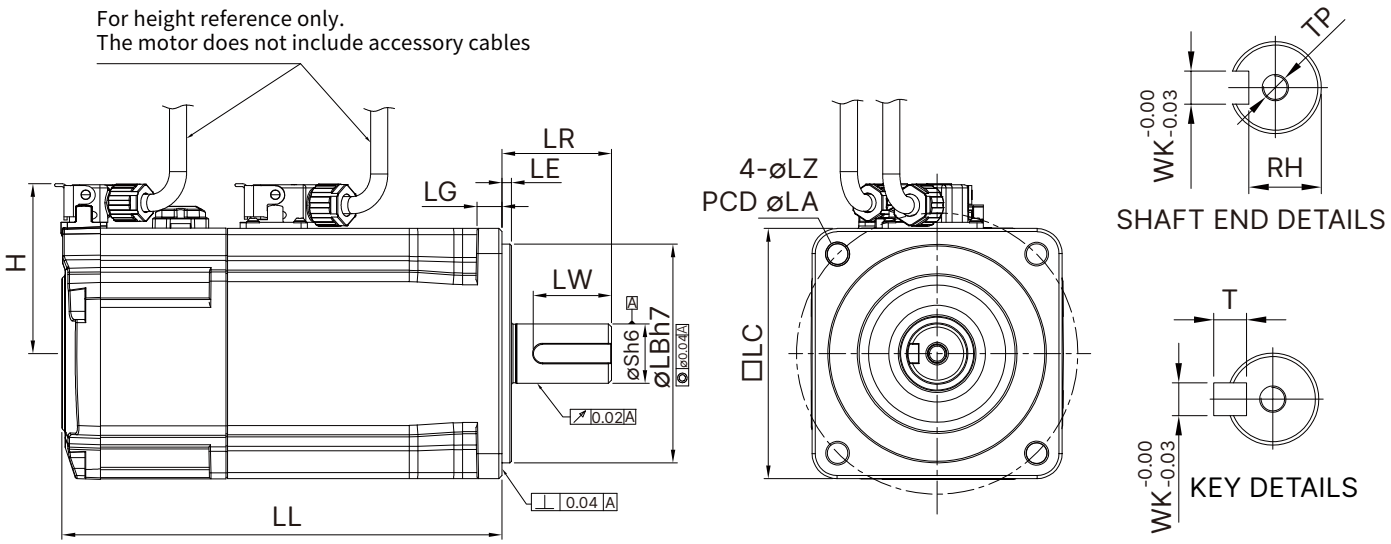




Note: Applicable for 220V and 400V models

ECM-B3 Built-in Series Servo Motor Specifications

220 V Dimensions of Motors with Frame Size of 80 mm or Below



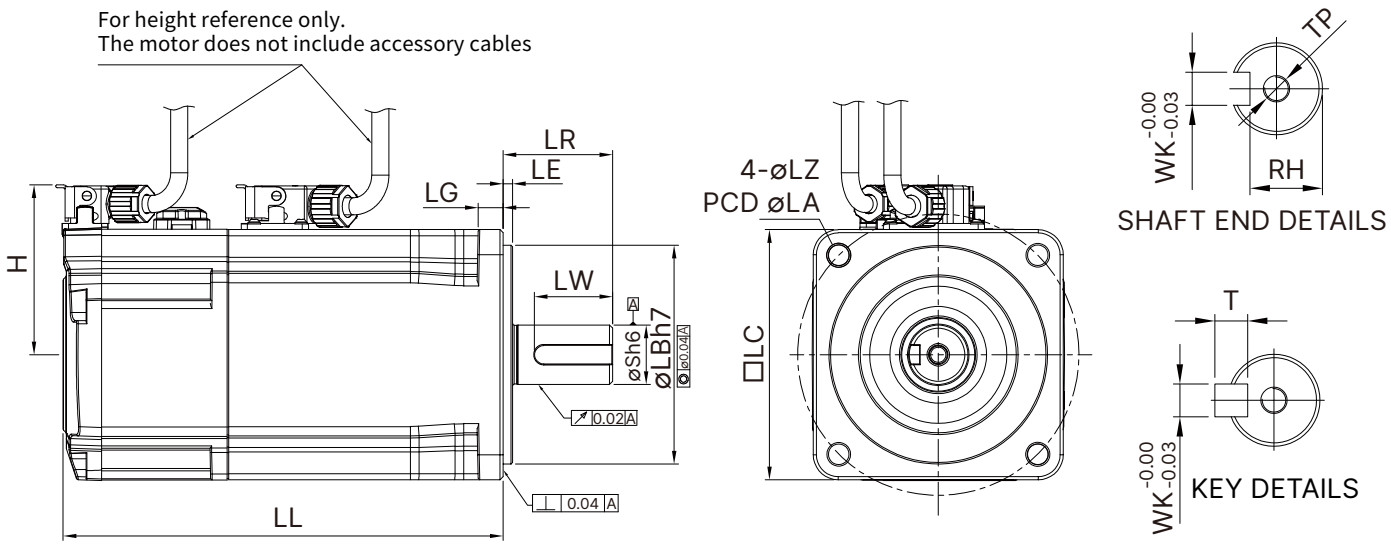
Model	B3L-C ② 0401	B3M-C ② 0602	B3M-C ② 0604	B3M-C ② 0807
LC	40	60	60	80
LZ	5.5	5.5	5.5	6.6
LA	70	70	70	90
S	14($^{+0}_{-0.011}$)	14($^{+0}_{-0.011}$)	14($^{+0}_{-0.011}$)	19($^{+0}_{-0.013}$)
LB	50($^{+0}_{-0.025}$)	50($^{+0}_{-0.025}$)	50($^{+0}_{-0.025}$)	70($^{+0}_{-0.030}$)
LL (w/o brake)	76.2	72.5	91	105.2
LL (with brake)	107.7	104.4	122.9	144.8
LH	300	300	300	300
LP	300	300	300	300
H	44	44	44	54
LR	30	30	30	35
LE	2.5	3	3	3
LG	7.5	7.5	7.5	8
LW	20	20	20	25
RH	11	11	11	15.5
WK	5	5	5	6
W	5	5	5	6
T	5	5	5	6
TP	M4 Depth 15	M4 Depth 15	M4 Depth 15	M6 Depth 20

Note: 1. Servo motor model name: ② = encoder type
2. The length of battery-less encoder frame LL increases as shown below

F40	F60	F80
+5.8 mm	+6.4 mm	+6 mm

ECM-B3 Built-in Series Servo Motor Specifications

220 V Dimensions of Motors with Frame Size of 80 mm or Below



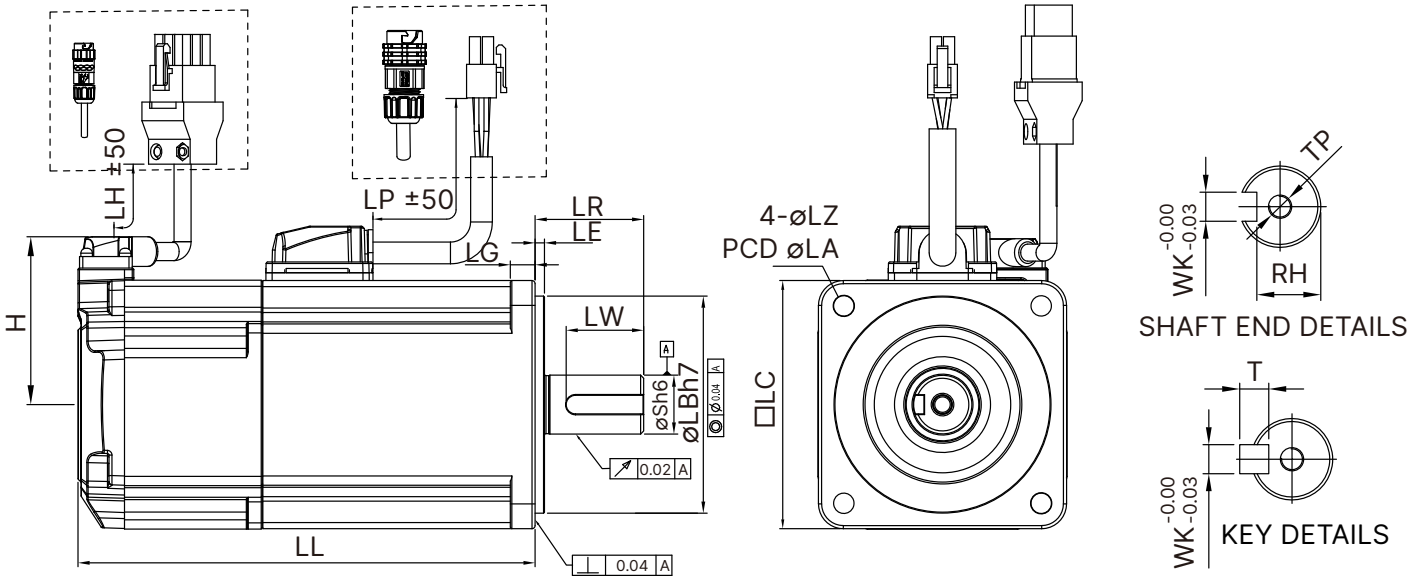
Model	B3M-C ② 0810	B3H-C ② 0602	B3H-C ② 0604	B3H-C ② 807
LC	80	60	60	80
LZ	6.6	5.5	5.5	6.6
LA	90	70	70	90
S	19($^{+0}_{-0.013}$)	14($^{+0}_{-0.011}$)	14($^{+0}_{-0.011}$)	19($^{+0}_{-0.013}$)
LB	70($^{+0}_{-0.030}$)	50($^{+0}_{-0.025}$)	50($^{+0}_{-0.025}$)	70($^{+0}_{-0.030}$)
LL (w/o brake)	118.8	69.6	87.45	95.4
LL (with brake)	154.4	101.5	119.35	131
LH	300	300	300	300
LP	300	300	300	300
H	54	44	44	54
LR	35	30	30	35
LE	3	3	3	3
LG	8	7.5	7.5	8
LW	25	20	20	25
RH	15.5	11	11	15.5
WK	6	5	5	6
W	6	5	5	6
T	6	5	5	6
TP	M6 Depth 20	M4 Depth 15	M4 Depth 15	M6 Depth 20

Note: 1. Servo motor model name: ② = encoder type
2. The length of battery-less encoder frame LL increases as shown below

F40	F60	F80
+5.8 mm	+6.4 mm	+6 mm

ECM-B3 Series Servo Motor with Line Type Specifications

220 V Dimensions of Motors with Frame Size of 80 mm

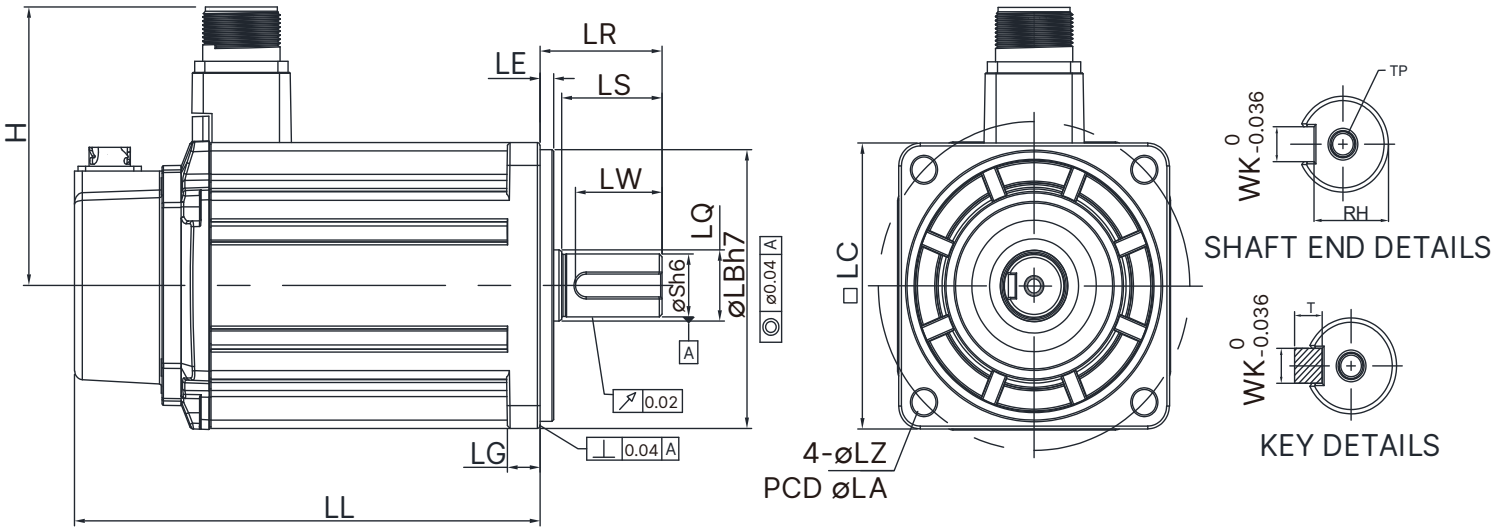


Model	B3L-C ② 0401	B3M-C ② 0602	B3M-C ② 0604	B3M-C ② 0807	B3M-C ② 0810
LC	40	60	60	80	80
LZ	4.5	5.5	5.5	6.6	6.6
LA	46	70	70	90	90
S	8($^{+0}_{-0.009}$)	14($^{+0}_{-0.011}$)	14($^{+0}_{-0.011}$)	19($^{+0}_{-0.013}$)	19($^{+0}_{-0.013}$)
LB	30($^{+0}_{-0.021}$)	50($^{+0}_{-0.025}$)	50($^{+0}_{-0.025}$)	70($^{+0}_{-0.030}$)	70($^{+0}_{-0.030}$)
LL (w/o brake)	77.6	72.5	91	105.2	118.7
LL (with brake)	111.7	109.4	127.9	144.8	158.3
LH	300	300	300	300	300
LP	300	300	300	300	300
H	40	48.5	48.5	58.5	58.5
LR	25	30	30	35	35
LE	2.5	3	3	3	3
LG	5	7.5	7.5	8	8
LW	16	20	20	25	25
RH	6.2	11	11	15.5	15.5
WK	3	5	5	6	6
W	3	5	5	6	6
T	3	5	5	6	6
TP	M3 Depth 8	M4 Depth 15	M4 Depth 15	M6 Depth 20	M6 Depth20

Note: 1. Servo motor model name: ② = encoder type

ECM-B3 Series Servo Motor Specifications

220 V & 400 V Dimensions of Motors with Frame Size of 100 mm



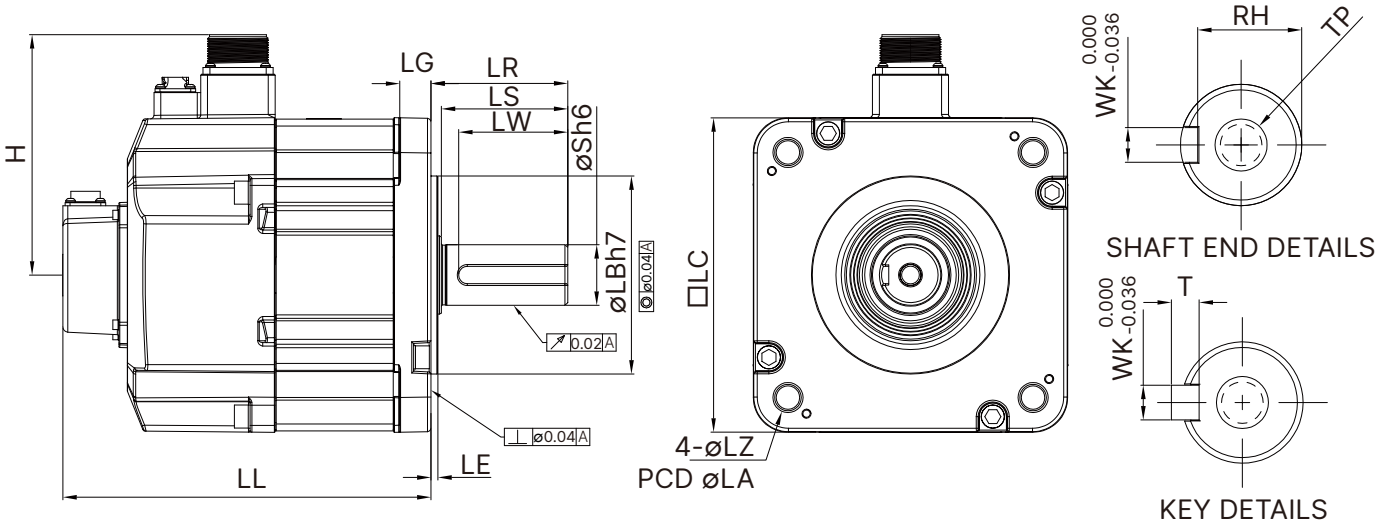
Model	B3M-C ② 1010 B3M-J ② 1010	B3M-C ② 1015 B3M-J ② 1015	B3M-C ② 1020 B3M-J ② 1020
LC	100	100	100
LZ	9	9	9
LA	115	115	115
S	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)
LB	95($^{+0}_{-0.03}$)	95($^{+0}_{-0.03}$)	95($^{+0}_{-0.03}$)
LL (w/o brake)	141.8	156.8	171.8
LL (with brake)	179.9	194.9	209.9
H	97.4	97.4	97.4
LS	37	37	37
LR	45	45	45
LQ	25	25	25
LE	5	5	5
LG	12	12	12
LW	32	32	32
RH	18	18	18
WK	8	8	8
W	8	8	8
T	7	7	7
TP	M6 Depth 12	M6 Depth 12	M6 Depth 12

Note: 1. Servo motor model name: ② = encoder type
2. The length of battery-less encoder frame LL increases as shown below

F100/F130/F180
+6.5 mm

ECM-B3 Series Servo Motor Specifications

220 V & 400 V Dimensions of Motors with Frame Size of 130 mm



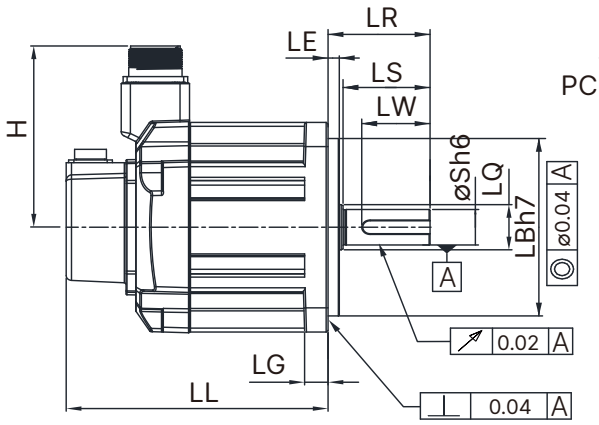
Model	B3M-E ② 1310 B3M-K ② 1310	B3M-E ② 1315 B3M-K ② 1315	B3M-E ② 1320 B3M-K ② 1320	B3M-F ② 1308 B3M-K ② 1308	B3M-F ② 1313 B3M-K ② 1313	B3H-F ② 1318 B3M-K ② 1318
LC	130	130	130	130	130	130
LZ	9	9	9	9	9	9
LA	145	145	145	145	145	145
S	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)	22($^{+0}_{-0.013}$)
LB	110($^{+0}_{-0.035}$)	110($^{+0}_{-0.035}$)	110($^{+0}_{-0.035}$)	110($^{+0}_{-0.035}$)	110($^{+0}_{-0.035}$)	110($^{+0}_{-0.035}$)
LL (w/o brake)	127.9	139.9	151.9	127.9	139.9	151.9
LL (with brake)	168.5	180.5	192.5	168.5	180.5	192.5
H	115	115	115	115	115	115
LS	47	47	47	47	47	47
LR	55	55	55	55	55	55
LQ	28	28	28	28	28	28
LE	6	6	6	6	6	6
LG	12.5	12.5	12.5	12.5	12.5	12.5
LW	36	36	36	36	36	36
RH	18	18	18	18	18	18
WK	8	8	8	8	8	8
W	8	8	8	8	8	8
T	7	7	7	7	7	7
TP	M6 Depth 12	M6 Depth 12	M6 Depth 12	M6 Depth 12	M6 Depth 12	M6 Depth 12

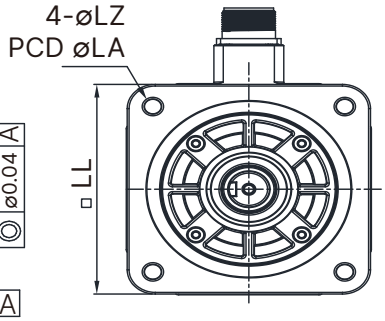
Note: 1. Servo motor model name: ② = encoder type
2. The length of battery-less encoder frame LL increases as shown below (except for 7.5 kW)

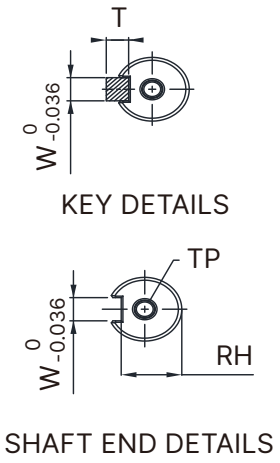
F100/F130/F180
+6.5 mm

ECM-B3 Series Servo Motor Specifications

220 V & 400 V Dimensions of Motors with Frame Size of 180 mm







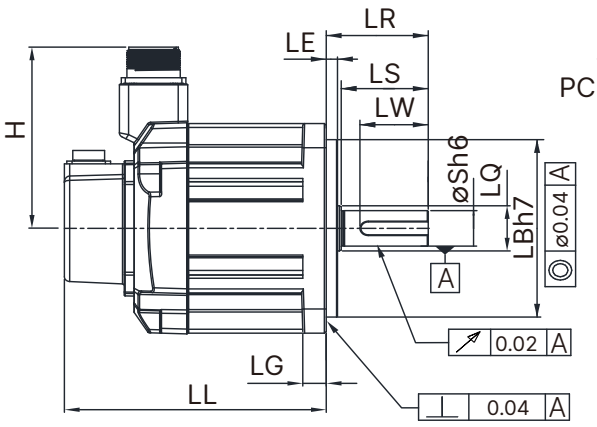
Model	B3M-E ② 1820 B3M-K ② 1820	B3M-F ② 1830 B3M-L ② 1830	B3M-L ② 1845
LC	180	180	180
LZ	13.5	13.5	13.5
LA	200	200	200
S	35($^{+0}_{-0.016}$)	35($^{+0}_{-0.016}$)	35($^{+0}_{-0.016}$)
LB	114.3($^{+0}_{-0.035}$)	114.3($^{+0}_{-0.035}$)	114.3($^{+0}_{-0.035}$)
LL (w/o brake)	137.5	160.5	174
LL (with brake)	189.5	212.5	226
H	139	139	139
LS	73	73	73
LR	79	79	79
LQ	45	45	45
LE	4	4	4
LG	18	18	18
LW	63	63	63
RH	30	30	30
WK	10	10	10
W	10	10	10
T	8	8	8
TP	M12 Depth 25	M12 Depth 25	M12 Depth 25

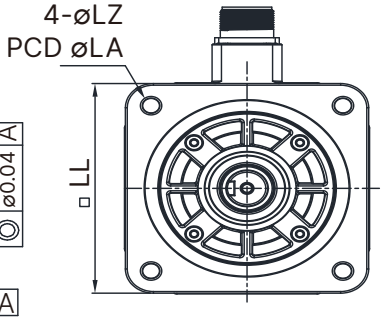
Note: 1. Servo motor model name: ② = encoder type
2. The length of battery-less encoder frame LL increases as shown below (except for 7.5 kW)

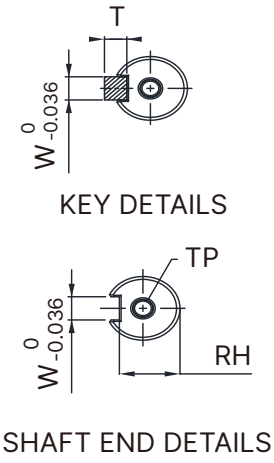
F100/F130/F180
+6.5 mm

ECM-B3 Series Servo Motor Specifications

220 V Dimensions of Motors with Frame Size of 180 mm







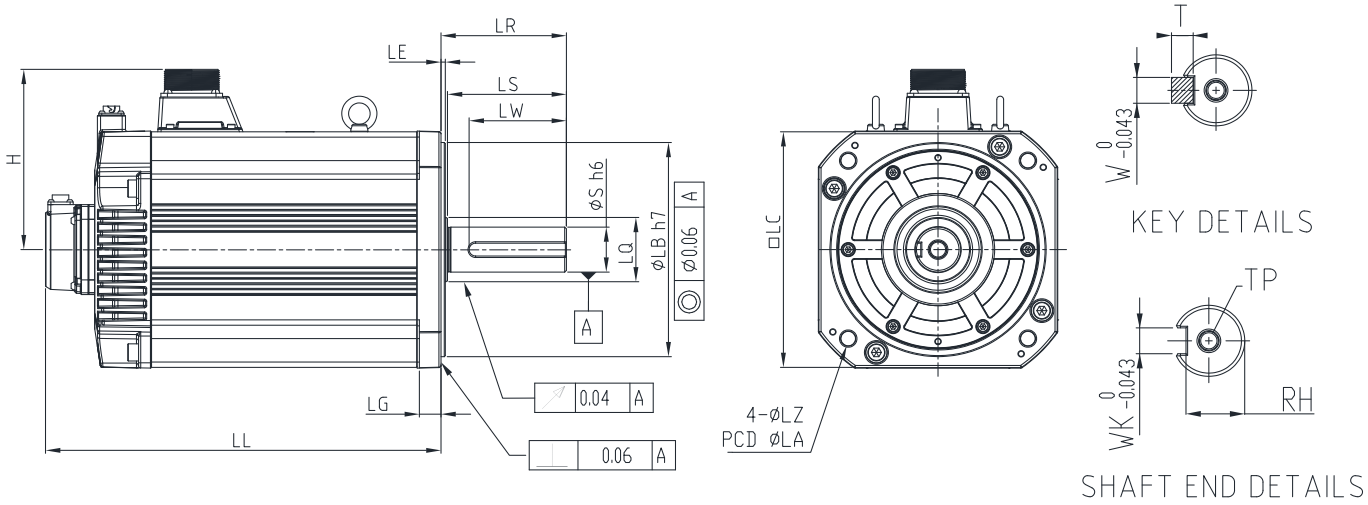
Model	B3M-F ② 1855 B3M-L ② 1845	B3M-F ② 1875 B3M-L ② 1875
LC	180	180
LZ	13.5	13.5
LA	200	200
S	42($^{+0}_{-0.016}$)	42($^{+0}_{-0.016}$)
LB	114.3($^{+0}_{-0.035}$)	114.3($^{+0}_{-0.035}$)
LL (w/o brake)	218	260.1
LL (with brake)	265	307.1
H	144.5	144.5
LS	108.5	108.5
LR	113	113
LQ	45	45
LE	4	4
LG	18	18
LW	90	90
RH	37	37
WK	12	12
W	12	12
T	8	8
TP	M16 Depth 32	M16 Depth 32

Note: 1. Servo motor model name: ② = encoder type
2. The length of battery-less encoder frame LL increases as shown below (except for 7.5 kW)

F100/F130/F180
+6.5 mm

ECM-B3 Series Servo Motor Specifications

200 V & 400 V Dimensions of Motors with Frame Size of 220 mm

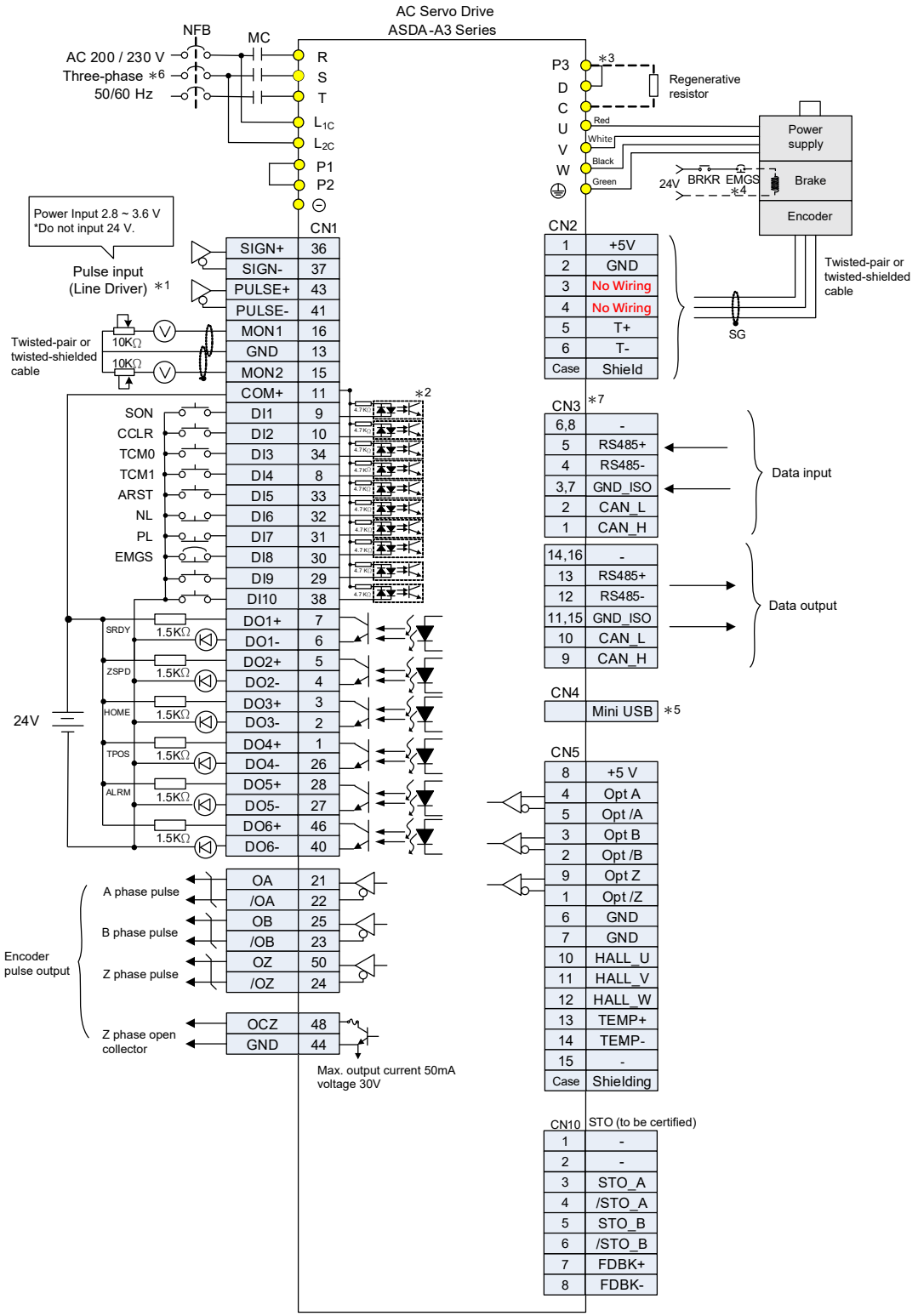


Model	B3M-F ② 221B	B3M-F ② 221F
	B3M-L ② 221B	B3M-L ② 221F
LC	180	180
LZ	13.5	13.5
LA	200	200
S	42($^{+0}_{-0.016}$)	42($^{+0}_{-0.016}$)
LB	114.3($^{+0}_{-0.035}$)	114.3($^{+0}_{-0.035}$)
LL (w/o brake)	218	260.1
LL (with brake)	265	307.1
H	144.5	144.5
LS	108.5	108.5
LR	113	113
LQ	45	45
LE	4	4
LG	18	18
LW	90	90
RH	37	37
WK	12	12
W	12	12
T	8	8
TP	M16 Depth32	M16 Depth32

Note: 1. Servo motor model name: ② = encoder type

Control Mode Wiring

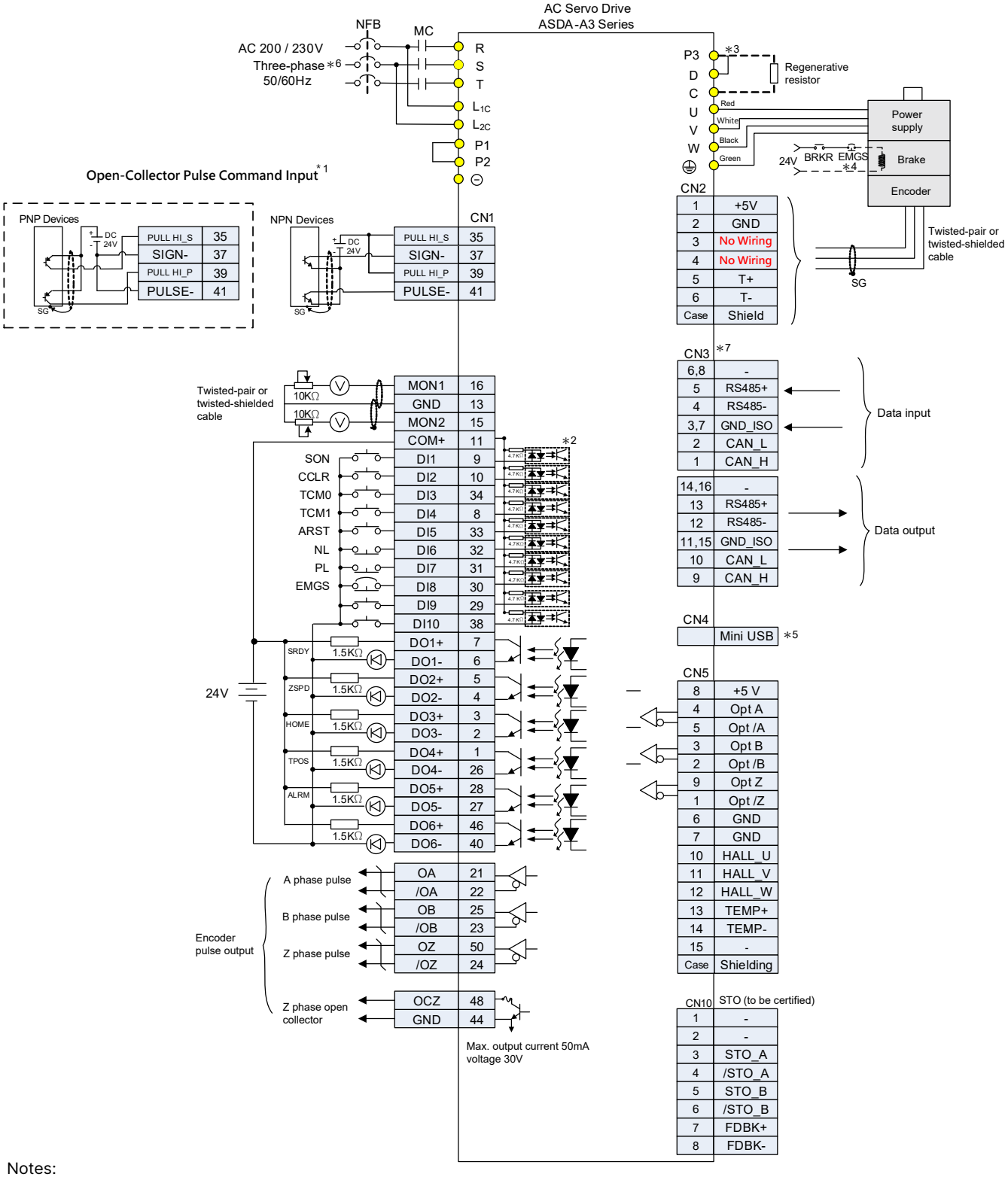
Position (PT) Mode Standard Wiring (Differential Pulse Signals)



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

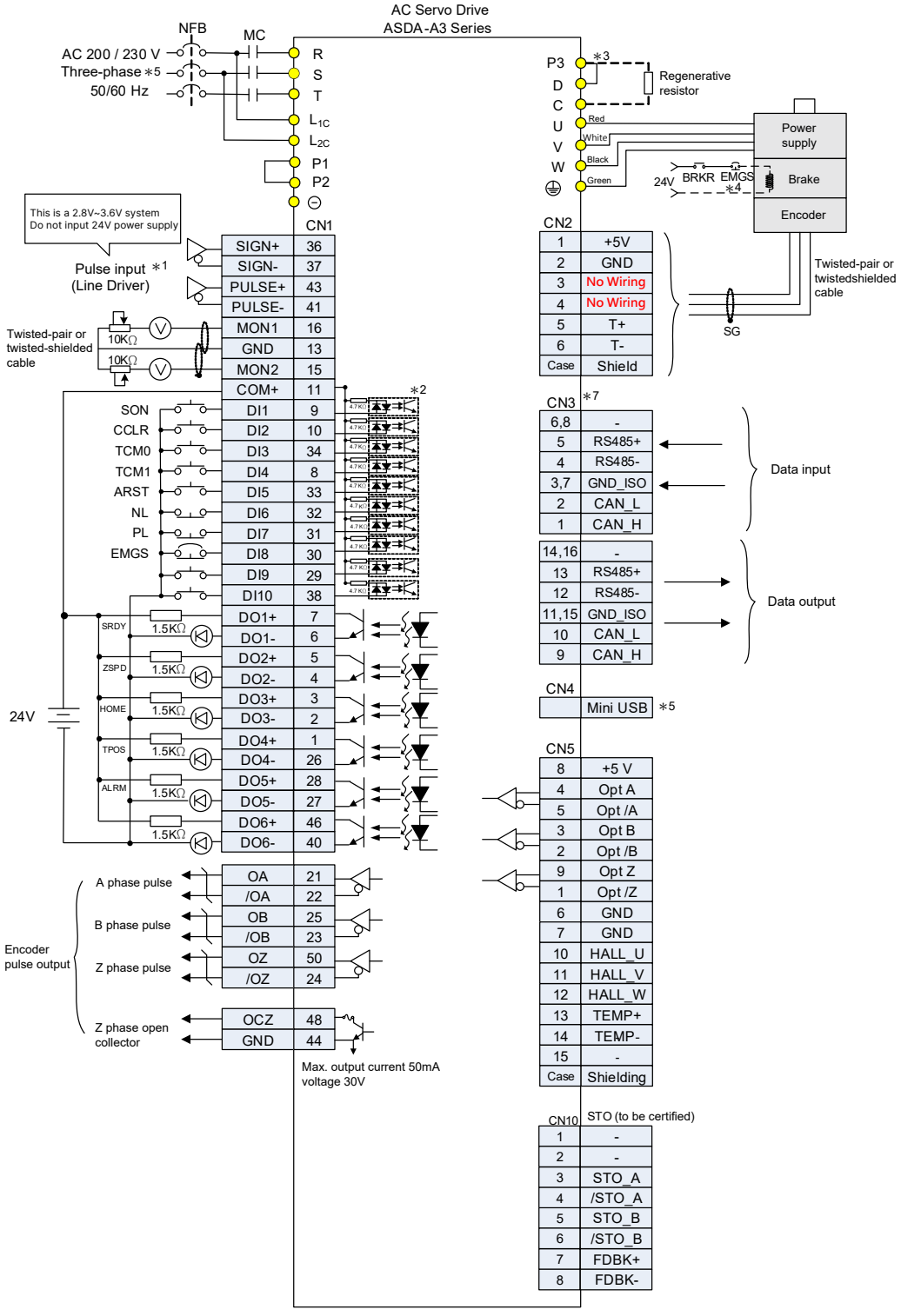
Position (PT) Control Mode (Open-Collector Pulse Signals)



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

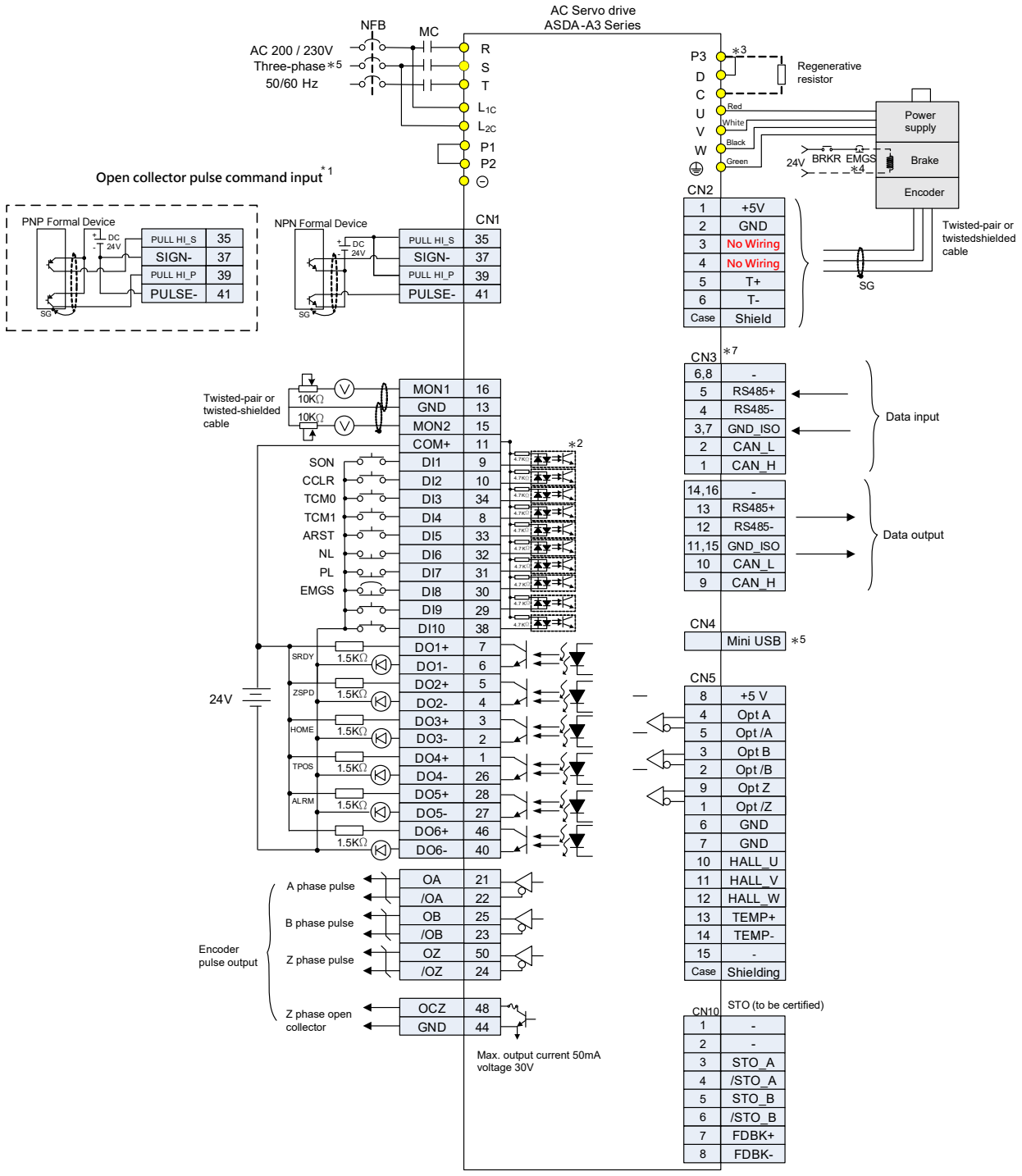
Position (PR) Mode Standard Wiring (Internal Position Commands)



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

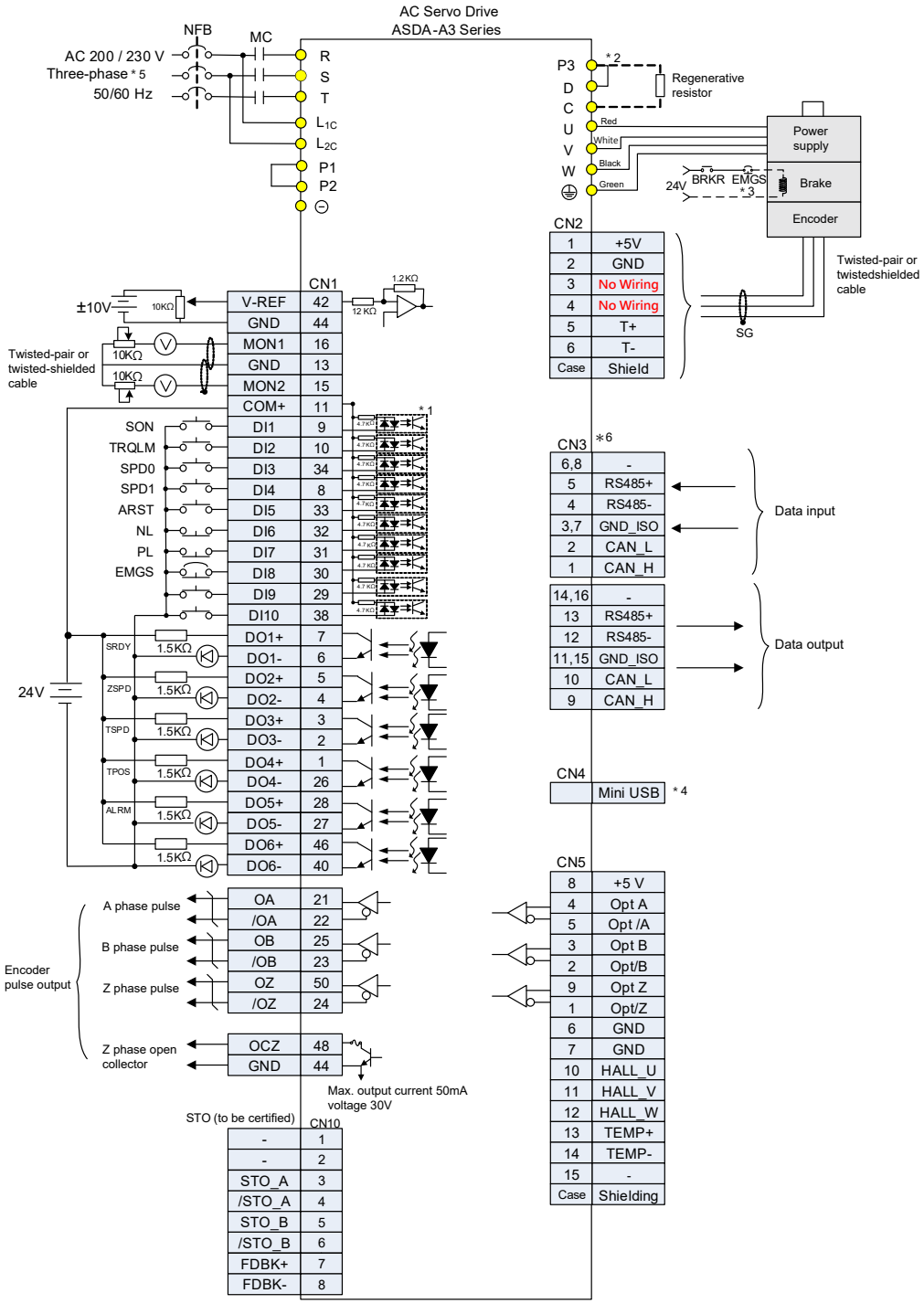
Torque (T) Mode Standard Wiring



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

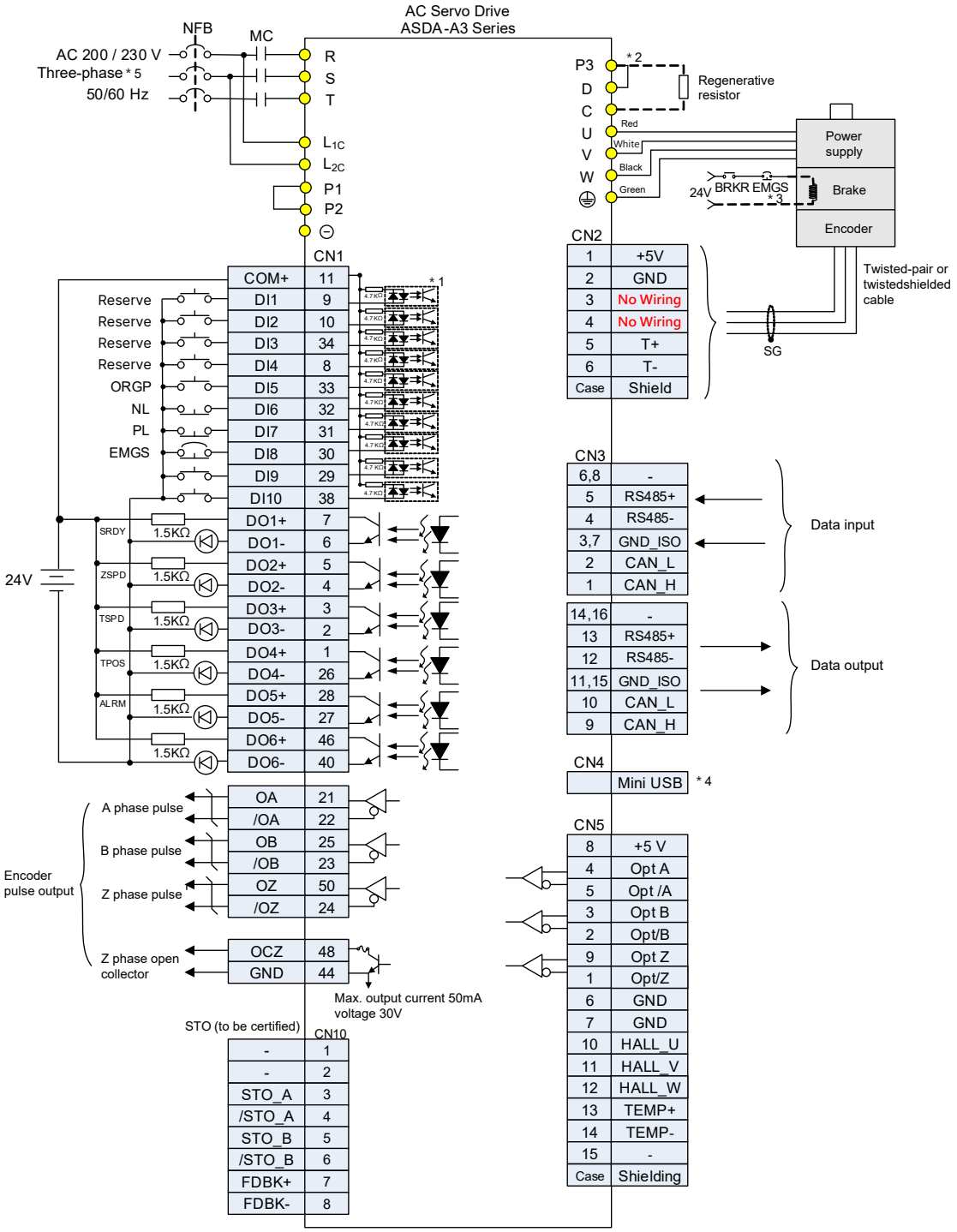
Speed (S) Mode Standard Wiring



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

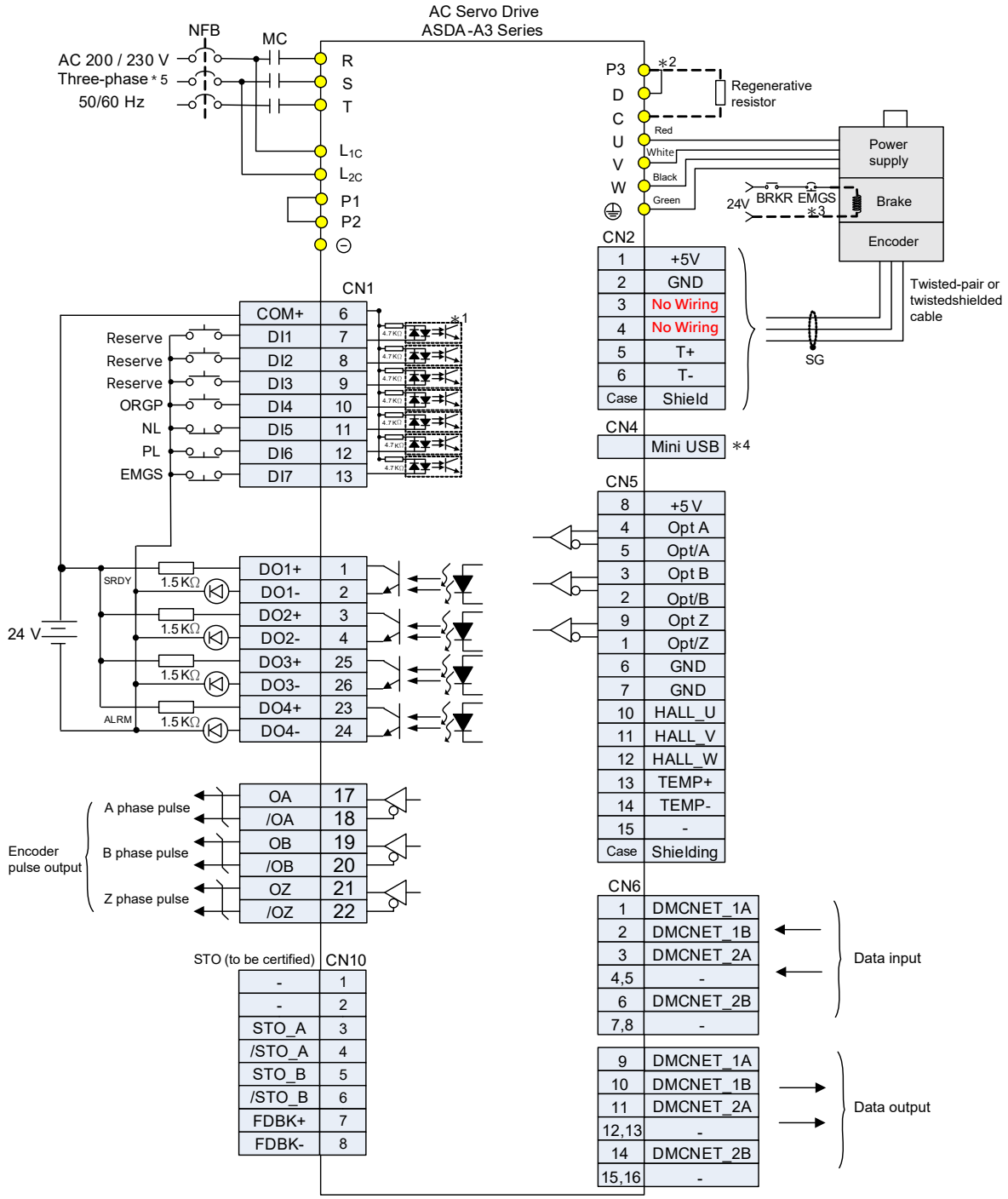
CANopen Communication Mode Standard Wiring



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

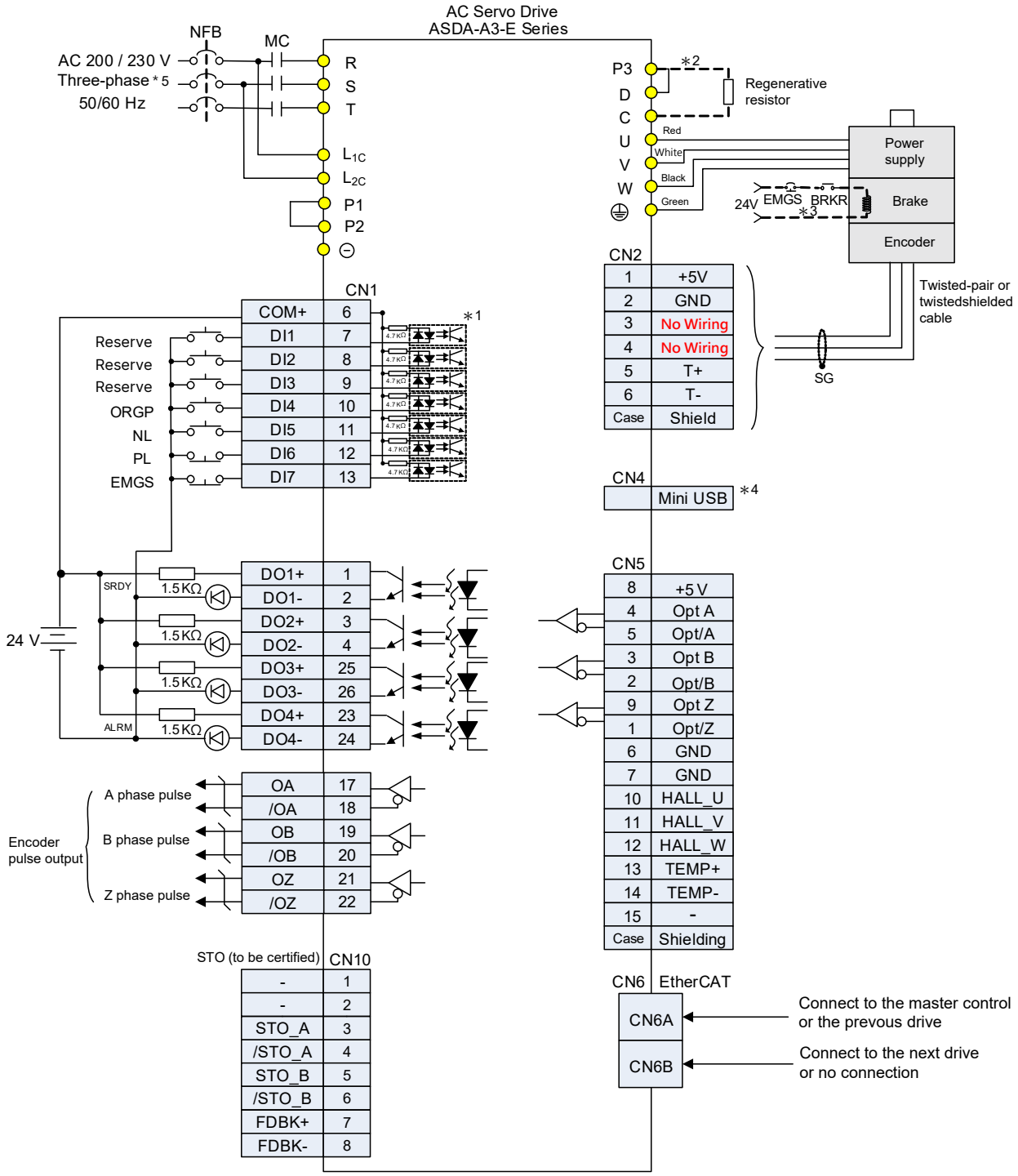
DMCNET Communication Mode Standard Wiring



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

Control Mode Wiring

EtherCAT Communication Mode Standard Wiring



Notes:
*1: Refer to Section 3.3.7 in the ASDA-B3 user manual for CN1 wiring
*2: Models of 200 W and below have no built-in brake resistor
*3: The brake coil has no polarity
*4: Connects to Mini USB (for PC communication)
*5: Models of 1.5 kW and below can use single-phase power supply

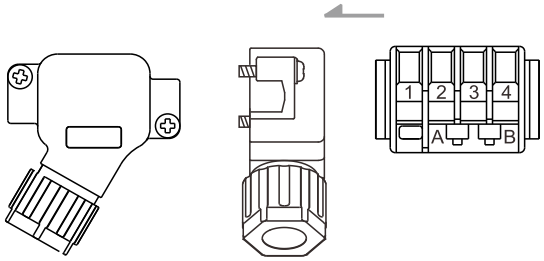
Ordering Information

Accessories Built-in Motor with Frame Size of 80 mm or Below

Power Connectors

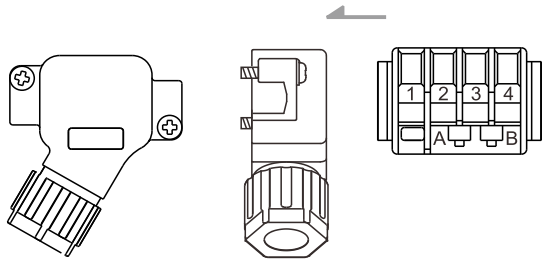
ACS3-AFPWSS00

With or w/o brake
Cable exit direction towards motor shaft



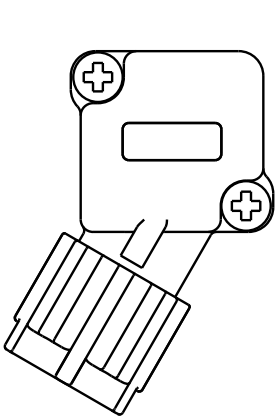
ACS3-ABPWSS00

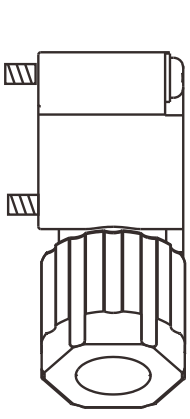
With or w/o brake
Cable exit direction towards encoder

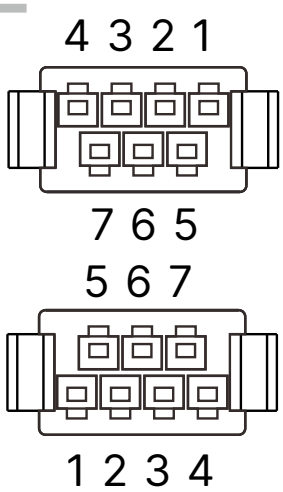


Encoder Connectors

ACS3-AFEASA00







Cable exit direction towards motor shaft

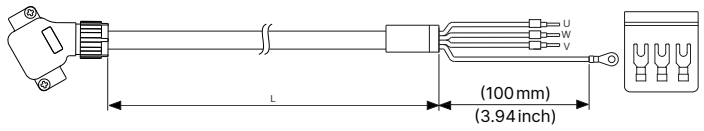
Cable exit direction towards encoder

Ordering Information

Accessories 200 V Built-in Motor with Frame Size of 80 mm or Below

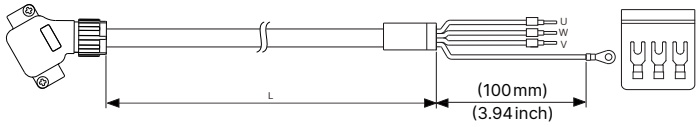
Power Connectors

Without brake - cable exit direction towards motor shaft



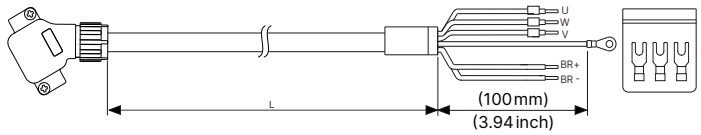
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-AFPWSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPWSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPWSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPWSR20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-AFPRSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPRSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPRSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPRSR20	20 (0.5)	20,000 ± 50	787 ± 4

Without brake - cable exit direction towards encoder



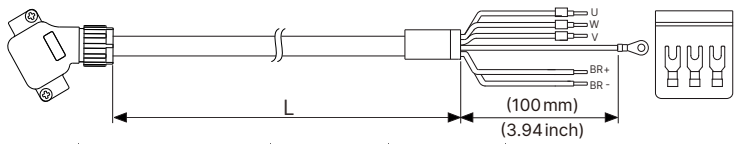
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-ABPWSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPWSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPWSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPWSR20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-ABPRSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPRSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPRSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPRSR20	20 (0.5)	20,000 ± 50	787 ± 4

With brake - cable exit direction towards motor shaft



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-AFPWSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPWSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPWSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPWSS20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-AFPRSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPRSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPRSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPRSS20	20 (0.5)	20,000 ± 50	787 ± 4

With brake - cable exit direction towards encoder



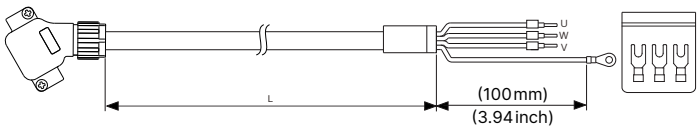
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-ABPWSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPWSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPWSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPWSS20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-ABPRSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPRSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPRSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPRSS20	20 (0.5)	20,000 ± 50	787 ± 4

Ordering Information

Accessories 200 V Built-in Motor with Frame Size of 80 mm or Below

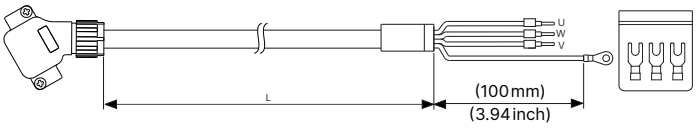
Power Connector w/o Brake

Without brake - cable exit direction towards motor shaft



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-AFPWSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPWSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPWSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPWSR20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-AFPRSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPRSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPRSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPRSR20	20 (0.5)	20,000 ± 50	787 ± 4

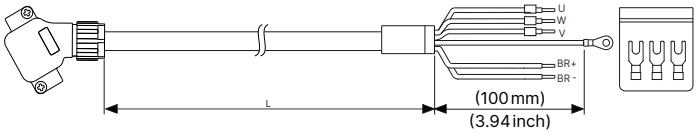
Without brake - cable exit direction towards encoder



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-ABPWSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPWSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPWSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPWSR20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-ABPRSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPRSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPRSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPRSR20	20 (0.5)	20,000 ± 50	787 ± 4

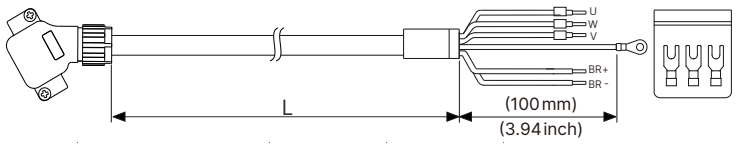
Power Connector with Brake

With brake - cable exit direction towards motor shaft



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-AFPWSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPWSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPWSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPWSS20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-AFPRSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPRSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPRSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPRSS20	20 (0.5)	20,000 ± 50	787 ± 4

With brake - cable exit direction towards encoder



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-ABPWSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPWSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPWSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPWSS20	20 (0.5)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-ABPRSS03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPRSS05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPRSS10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPRSS20	20 (0.5)	20,000 ± 50	787 ± 4

Ordering Information

Accessories 200 V Built-in Motor with Frame Size of 80 mm or Below

Signal adapter cable - Battery-Less / Incremental

Cable exit direction towards motor shaft

Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-AFEASI0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-AFEASI0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-AFEASI0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-AFEASI0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18
Torsion-Resistant	ACS3-AFERSI0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-AFERSI0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-AFERSI0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-AFERSI0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18

Cable exit direction towards encoder

Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-ABEASI0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-ABEASI0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-ABEASI0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-ABEASI0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18
Torsion-Resistant	ACS3-ABERSI0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-ABERSI0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-ABERSI0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-ABERSI0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18

Signal Connector - Absolute

Cable exit direction towards motor shaft

Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-AFEASA0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-AFEASA0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-AFEASA0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-AFEASA0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18
Torsion-Resistant	ACS3-AFERSA0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-AFERSA0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-AFERSA0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-AFERSA0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18

Cable exit direction towards encoder

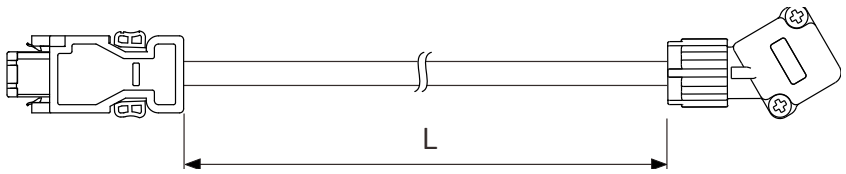
Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-ABEASA0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-ABEASA0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-ABEASA0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-ABEASA0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18
Torsion-Resistant	ACS3-ABERSA0C	22 (0.3)+26 (0.13)	300 ± 30	11.8 ± 1.18
	ACS3-ABERSA0E	22 (0.3)+26 (0.13)	500 ± 30	19.7 ± 1.18
	ACS3-ABERSA0G	22 (0.3)+26 (0.13)	700 ± 30	27.5 ± 1.18
	ACS3-ABERSA0J	22 (0.3)+26 (0.13)	900 ± 30	35.4 ± 1.18

Ordering Information

Accessories 200 V Built-in Motor with Frame Size of 80 mm or Below

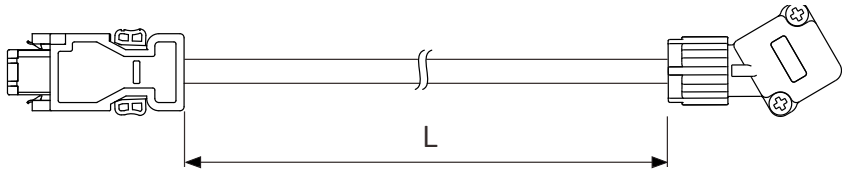
Battery-Less / Incremental Encoder Connectors

Cable exit direction towards motor shaft



Cable	Model Name	L	
		mm	inch
Standard	ACS3-AFEASI03	3,000 ± 50	118 ± 2
	ACS3-AFEASI05	5,000 ± 50	197 ± 2
	ACS3-AFEASI10	10,000 ± 50	394 ± 4
	ACS3-AFEASI20	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-AFERSI03	3,000 ± 50	118 ± 2
	ACS3-AFERSI05	5,000 ± 50	197 ± 2
	ACS3-AFERSI10	10,000 ± 50	394 ± 4
	ACS3-AFERSI20	20,000 ± 50	787 ± 4

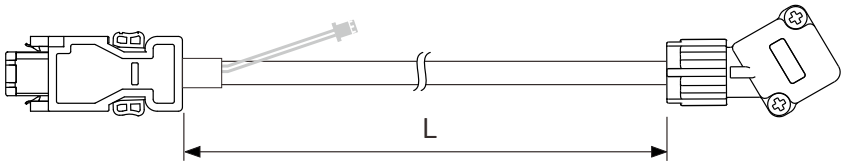
Cable exit direction towards encoder



Cable	Model Name	L	
		mm	inch
Standard	ACS3-ABEASI03	3,000 ± 50	118 ± 2
	ACS3-ABEASI05	5,000 ± 50	197 ± 2
	ACS3-ABEASI10	10,000 ± 50	394 ± 4
	ACS3-ABEASI20	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-ABERSI03	3,000 ± 50	118 ± 2
	ACS3-ABERSI05	5,000 ± 50	197 ± 2
	ACS3-ABERSI10	10,000 ± 50	394 ± 4
	ACS3-ABERSI20	20,000 ± 50	787 ± 4

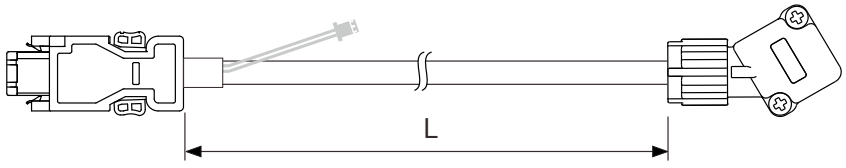
Absolute Encoder Connectors

Cable exit direction towards motor shaft



Cable	Model Name	L	
		mm	inch
Standard	ACS3-AFEASA03	3,000 ± 50	118 ± 2
	ACS3-AFEASA05	5,000 ± 50	197 ± 2
	ACS3-AFEASA10	10,000 ± 50	394 ± 4
	ACS3-AFEASA20	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-AFERSA03	3,000 ± 50	118 ± 2
	ACS3-AFERSA05	5,000 ± 50	197 ± 2
	ACS3-AFERSA10	10,000 ± 50	394 ± 4
	ACS3-AFERSA20	20,000 ± 50	787 ± 4

Cable exit direction towards encoder



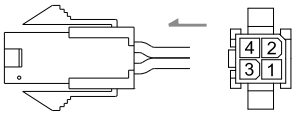
Cable	Model Name	L	
		mm	inch
Standard	ACS3-ABEASA03	3,000 ± 50	118 ± 2
	ACS3-ABEASA05	5,000 ± 50	197 ± 2
	ACS3-ABEASA10	10,000 ± 50	394 ± 4
	ACS3-ABEASA20	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-ABERSA03	3,000 ± 50	118 ± 2
	ACS3-ABERSA05	5,000 ± 50	197 ± 2
	ACS3-ABERSA10	10,000 ± 50	394 ± 4
	ACS3-ABERSA20	20,000 ± 50	787 ± 4

Ordering Information

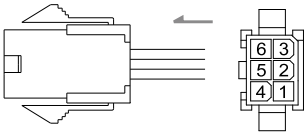
Accessories

Power Connectors (For F80 and below)

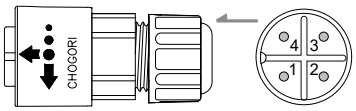
ASDBCAPW0000 (Motor 220 V & 400 V)
(for F80 and below)



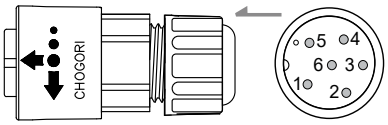
ASDBCAPW0100 (Motor 220 V & 400 V)
(for F80 and below with brake)



ACS3-CNPW1A00 (for F80 and below)
IP67 waterproof connector, for 220 V

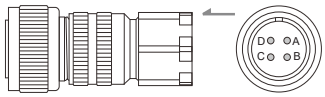


ACS3-CNPW2A00 (for F80 and below)
IP67 waterproof connector, for 220 V

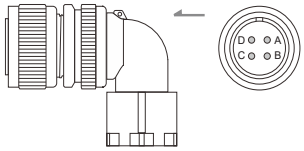


Mil-Spec Connectors (For F100 and above)

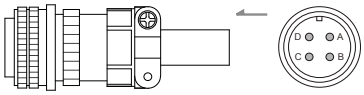
ACS3-CAPWA000
(for F100 - F130)
Mil-Spec: MIL 3106A18-10S



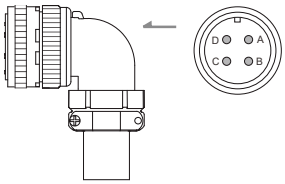
ACS3-CRPWA000
(for F100 - F130)
Mil-Spec: MIL 3108A18-10S



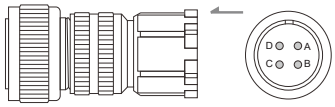
ACS3-CAPWE000
(for F180 5.5 / 7.5 kW & F220)
Mil-Spec: MIL 3106A32-17S



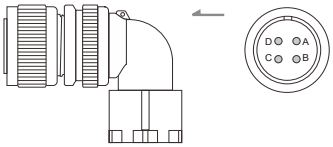
ACS3-CRPWE000
(for F180 5.5 / 7.5 kW & F200)
Mil-Spec: MIL 3108A32-17S



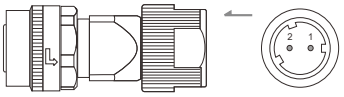
ACS3-CAPWC000
(for F180 2 / 3 / 4.5 kW)
Mil-Spec: MIL 3106A22-22S



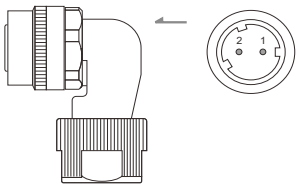
ACS3-CRPWC000
(for F180 2 / 3 / 4.5 kW)
Mil-Spec: MIL 3108A22-22S



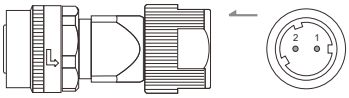
ACS3-CABRA000
(for F100 ~ F220 with brake)
Mil-Spec: CMV1-SP2S



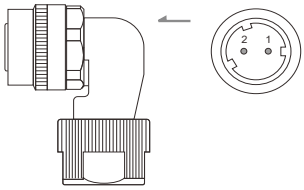
ACS3-CRBRA000
(for F100 - F220 with brake)
Mil-Spec: CMV1-AP2S



ACS3-CABRM000
(for F100~F220 with brake)
Mil-Spec: CM1-SP2S
Threaded (high vibration requirements)



ACS3-CRBRM000
(for F100~F220 with brake)
Mil-Spec: CM1-AP2S
Threaded (high vibration requirements)



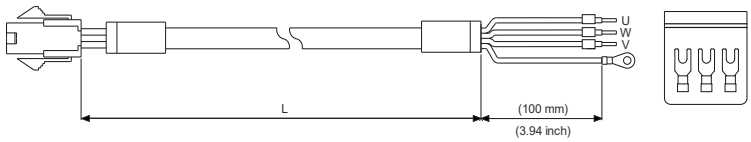
Ordering Information

Accessories

Power Cable

F40 - F80

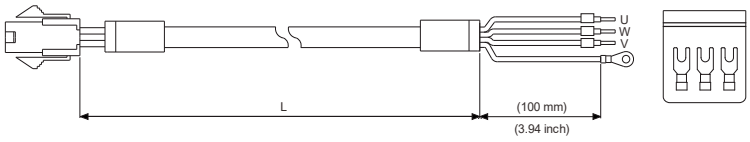
A3 / B3 motor, w/o brake, 220V



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CAPW1103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPW1105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPW1110	18 (0.82)	10,000 ± 50	394 ± 4
	ACS3-CAPW1120	18 (0.82)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-CAPF1103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPF1105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPF1110	18 (0.82)	10,000 ± 50	394 ± 4
	ACS3-CAPF1120	18 (0.82)	20,000 ± 50	787 ± 4

F40 - F80

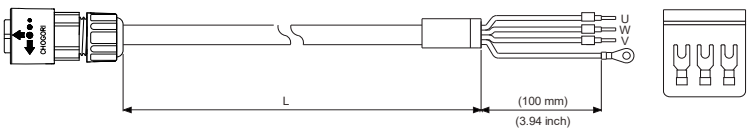
A3 / B3 motor, w/o brake, 400V



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CAPW3103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPW3105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPW3110	18 (0.82)	10,000 ± 50	394 ± 4
	ACS3-CAPW3120	18 (0.82)	20,000 ± 50	787 ± 4
Torsion-Resistant	ACS3-CAPF3103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPF3105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPF3110	18 (0.82)	10,000 ± 50	394 ± 4
	ACS3-CAPF3120	18 (0.82)	20,000 ± 50	787 ± 4

F40 - F80

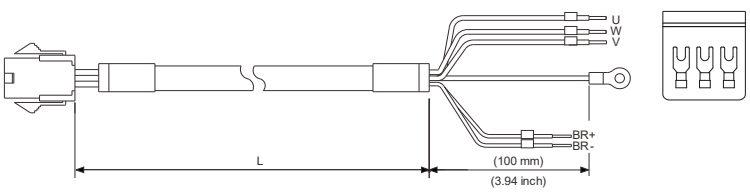
A3 / B3 motor, w/o brake, IP67 waterproof connector, 220V



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CAPW5103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPW5105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPW5110	18 (0.82)	10,000 ± 100	394 ± 4
	ACS3-CAPW5120	18 (0.82)	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAPF5103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPF5105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPF5110	18 (0.82)	10,000 ± 100	394 ± 4
	ACS3-CAPF5120	18 (0.82)	20,000 ± 100	787 ± 4

F40 - F80

A3 / B3 motor, with brake (220V & 400V)



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CAPW2103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPW2105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPW2110	18 (0.82)	10,000 ± 100	394 ± 4
	ACS3-CAPW2120	18 (0.82)	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAPF2103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPF2105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPF2110	18 (0.82)	10,000 ± 100	394 ± 4
	ACS3-CAPF2120	18 (0.82)	20,000 ± 100	787 ± 4

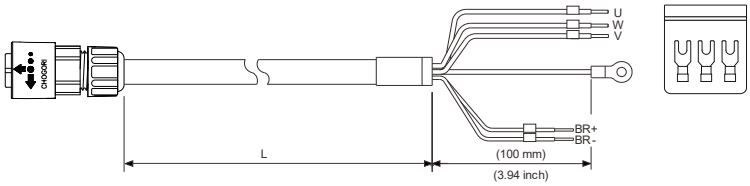
Ordering Information

Accessories

Power Cable

F40 ~ F80

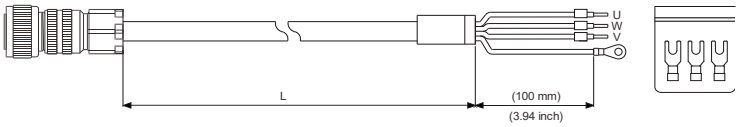
A3/B3 motor, with brake, IP67 waterproof connector, for 220 V



Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Standard	ACS3-CAPW6103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPW6105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPW6110	18 (0.82)	10,000 ± 100	394 ± 4
	ACS3-CAPW6120	18 (0.82)	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAPF6103	18 (0.82)	3,000 ± 50	118 ± 2
	ACS3-CAPF6105	18 (0.82)	5,000 ± 50	197 ± 2
	ACS3-CAPF6110	18 (0.82)	10,000 ± 100	394 ± 4
	ACS3-CAPF6120	18 (0.82)	20,000 ± 100	787 ± 4

F100~F130

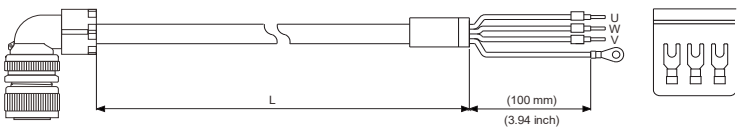
B3 motor, w/o brake, straight connector



Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Standard	ACS3-CAPWA203	16 (1.3)	3,000 ± 50	118 ± 2
	ACS3-CAPWA205	16 (1.3)	5,000 ± 50	197 ± 2
	ACS3-CAPWA210	16 (1.3)	10,000 ± 100	394 ± 4
	ACS3-CAPWA220	16 (1.3)	20,000 ± 100	787 ± 4
	ACS3-CAPWA303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CAPWA305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CAPWA310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CAPWA320	14 (2.1)	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAPFA203	16 (1.3)	3,000 ± 50	118 ± 2
	ACS3-CAPFA205	16 (1.3)	5,000 ± 50	197 ± 2
	ACS3-CAPFA210	16 (1.3)	10,000 ± 100	394 ± 4
	ACS3-CAPFA220	16 (1.3)	20,000 ± 100	787 ± 4
	ACS3-CAPFA303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CAPFA305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CAPFA310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CAPFA320	14 (2.1)	20,000 ± 100	787 ± 4

F100~F130

B3 motor, w/o brake, angular connector



Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Standard	ACS3-CRPWA203	16 (1.3)	3,000 ± 50	118 ± 2
	ACS3-CRPWA205	16 (1.3)	5,000 ± 50	197 ± 2
	ACS3-CRPWA210	16 (1.3)	10,000 ± 100	394 ± 4
	ACS3-CRPWA220	16 (1.3)	20,000 ± 100	787 ± 4
	ACS3-CRPWA303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CRPWA305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CRPWA310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CRPWA320	14 (2.1)	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CRPFA203	16 (1.3)	3,000 ± 50	118 ± 2
	ACS3-CRPFA205	16 (1.3)	5,000 ± 50	197 ± 2
	ACS3-CRPFA210	16 (1.3)	10,000 ± 100	394 ± 4
	ACS3-CRPFA220	16 (1.3)	20,000 ± 100	787 ± 4
	ACS3-CRPFA303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CRPFA305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CRPFA310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CRPFA320	14 (2.1)	20,000 ± 100	787 ± 4

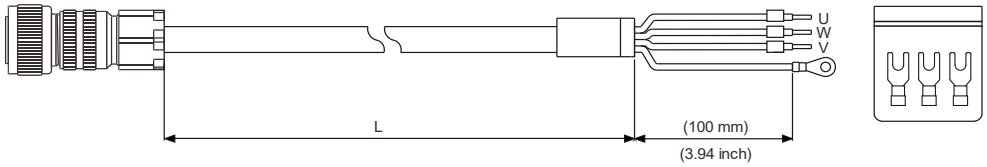
Ordering Information

Accessories

Power Cable

200 V F180 2 kW · 400 V F180 4.5 kW

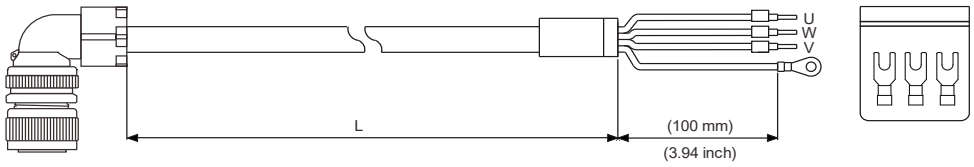
B3 motor, w/o brake, straight connector



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CAPWC403	12 (3.3)	3,000 ± 50	118 ± 2
	ACS3-CAPWC405	12 (3.3)	5,000 ± 50	197 ± 2
	ACS3-CAPWC410	12 (3.3)	10,000 ± 100	394 ± 4
	ACS3-CAPWC420	12 (3.3)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Torsion-Resistant	ACS3-CAPFC403	12 (3.3)	3,000 ± 50	118 ± 2
	ACS3-CAPFC405	12 (3.3)	5,000 ± 50	197 ± 2
	ACS3-CAPFC410	12 (3.3)	10,000 ± 100	394 ± 4
	ACS3-CAPFC420	12 (3.3)	20,000 ± 100	787 ± 4

B3 motor, w/o brake, angular connector



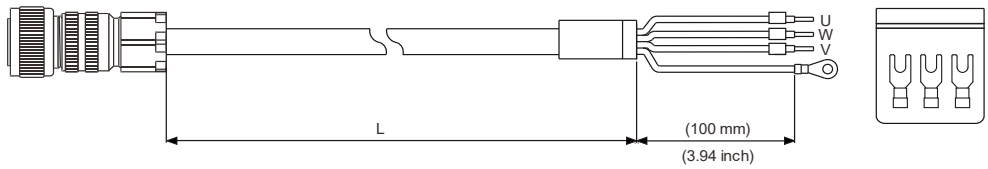
Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CRPWC403	12 (3.3)	3,000 ± 50	118 ± 2
	ACS3-CRPWC405	12 (3.3)	5,000 ± 50	197 ± 2
	ACS3-CRPWC410	12 (3.3)	10,000 ± 100	394 ± 4
	ACS3-CRPWC420	12 (3.3)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Torsion-Resistant	ACS3-CRPFC403	12 (3.3)	3,000 ± 50	118 ± 2
	ACS3-CRPFC405	12 (3.3)	5,000 ± 50	197 ± 2
	ACS3-CRPFC410	12 (3.3)	10,000 ± 100	394 ± 4
	ACS3-CRPFC420	12 (3.3)	20,000 ± 100	787 ± 4

Power Cable

200 V F180 3 kW / 4.5 kW

B3 motor, w/o brake, angular connector



Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Standard	ACS3-CAPWC503	10 (5.3)	3,000 ± 50	118 ± 2
	ACS3-CAPWC505	10 (5.3)	5,000 ± 50	197 ± 2
	ACS3-CAPWC510	10 (5.3)	10,000 ± 100	394 ± 4
	ACS3-CAPWC520	10 (5.3)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW AWG (mm^2)	L mm	L inch
Torsion-Resistant	ACS3-CAPFC503	10 (5.3)	3,000 ± 50	118 ± 2
	ACS3-CAPFC505	10 (5.3)	5,000 ± 50	197 ± 2
	ACS3-CAPFC510	10 (5.3)	10,000 ± 100	394 ± 4
	ACS3-CAPFC520	10 (5.3)	20,000 ± 100	787 ± 4

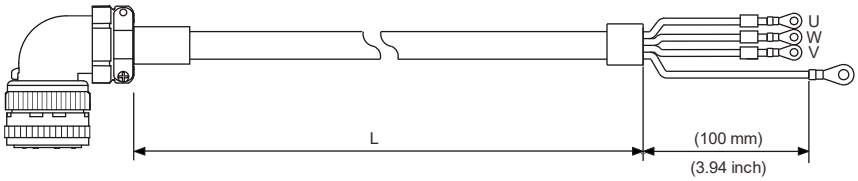
Ordering Information

Accessories

Power Cable

200 V F180, 3 kW / 4.5 kW

B3 motor, w/o brake, angular connector



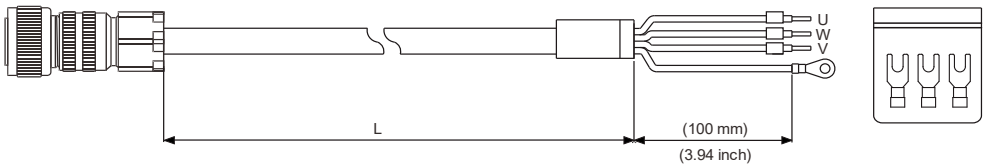
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CRPWC503	10 (5.3)	3,000 ± 50	118 ± 2
	ACS3-CRPWC505	10 (5.3)	5,000 ± 50	197 ± 2
	ACS3-CRPWC510	10 (5.3)	10,000 ± 100	394 ± 4
	ACS3-CRPWC520	10 (5.3)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CRPFC503	10 (5.3)	3,000 ± 50	118 ± 2
	ACS3-CRPFC505	10 (5.3)	5,000 ± 50	197 ± 2
	ACS3-CRPFC510	10 (5.3)	10,000 ± 100	394 ± 4
	ACS3-CRPFC520	10 (5.3)	20,000 ± 100	787 ± 4

Power Cable

400 V F180, 2 kW / 3 kW

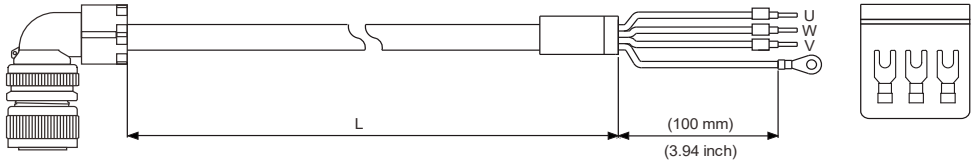
B3 motor, w/o brake, angular connector



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CAPWC303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CAPWC305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CAPWC310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CAPWC320	14 (2.1)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFC303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CAPFC305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CAPFC310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CAPFC320	14 (2.1)	20,000 ± 100	787 ± 4

B3 motor, w/o brake, angular connector



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CRPWC303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CRPWC305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CRPWC310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CRPWC320	14 (2.1)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CRPFC303	14 (2.1)	3,000 ± 50	118 ± 2
	ACS3-CRPFC305	14 (2.1)	5,000 ± 50	197 ± 2
	ACS3-CRPFC310	14 (2.1)	10,000 ± 100	394 ± 4
	ACS3-CRPFC320	14 (2.1)	20,000 ± 100	787 ± 4

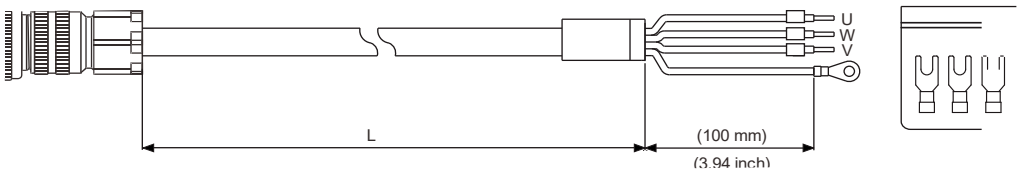
Ordering Information

Accessories

Power Cable

200 V F180 5.5 kW · 400 V F180 5.5 kW

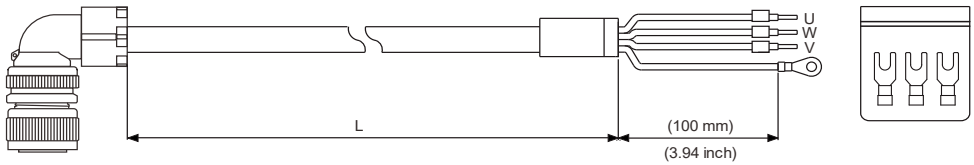
B3 motor, with brake, straight connector



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CAPWC603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPWC605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPWC610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPWC620	8 (8.4)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFC603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPFC605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPFC610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPFC620	8 (8.4)	20,000 ± 100	787 ± 4

B3 motor, with brake, angular connector



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CRPWC603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CRPWC605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CRPWC610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CRPWC620	8 (8.4)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFE603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPFE605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPFE610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPFE620	8 (8.4)	20,000 ± 100	787 ± 4

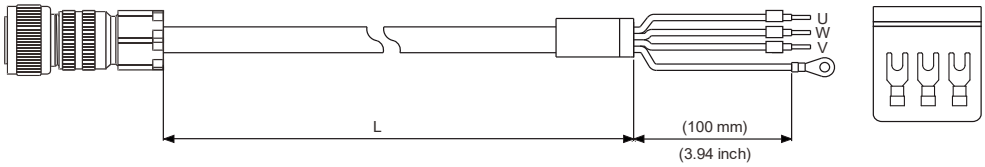
Ordering Information

Accessories

Power Cable

200 V F180 7.5 kW, 400 V F180 5.5 kW / 7.5 kW, 400 V F220 11 kW / 15 kW

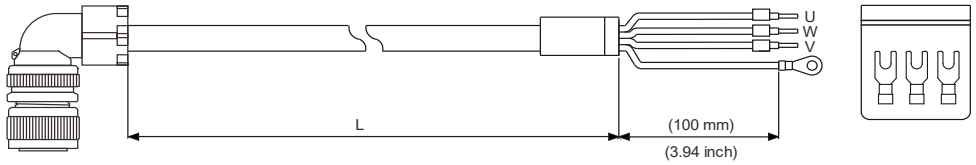
B3 motor, w/o brake, angular connector



Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Standard	ACS3-CAPWC703	6 (13.3)	3,000 ± 50	118 ± 2
	ACS3-CAPWC705	6 (13.3)	5,000 ± 50	197 ± 2
	ACS3-CAPWC710	6 (13.3)	10,000 ± 100	394 ± 4
	ACS3-CAPWC720	6 (13.3)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Torsion-Resistan	ACS3-CAPFE703	12 (3.3)	3,000 ± 50	118 ± 2
	ACS3-CAPFE705	12 (3.3)	5,000 ± 50	197 ± 2
	ACS3-CAPFE710	12 (3.3)	10,000 ± 100	394 ± 4
	ACS3-CAPFE720	12 (3.3)	20,000 ± 100	787 ± 4

B3 motor, w/o brake, angular connector



Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Standard	ACS3-CRPWC703	6 (13.3)	3,000 ± 50	118 ± 2
	ACS3-CRPWC705	6 (13.3)	5,000 ± 50	197 ± 2
	ACS3-CRPWC710	6 (13.3)	10,000 ± 100	394 ± 4
	ACS3-CRPWC720	6 (13.3)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Torsion-Resistan	ACS3-CAPFE703	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPFE705	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPFE710	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPFE720	8 (8.4)	20,000 ± 100	787 ± 4

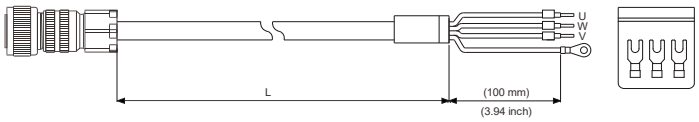
Ordering Information

Accessories

Power Cable

200 V F180, 5.5 kW, 400 V F180, 5.5 kW / 7.5 kW

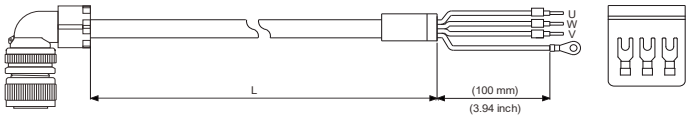
B3 motor, with brake, straight connector



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CAPWC603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPWC605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPWC610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPWC620	8 (8.4)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFC603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPFC605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPFC610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPFC620	8 (8.4)	20,000 ± 100	787 ± 4

B3 motor, with brake, straight connector

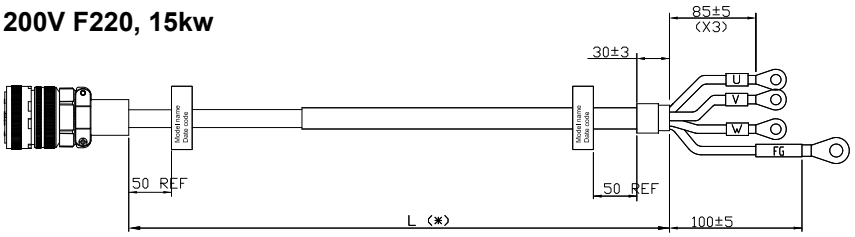


Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CRPWC603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CRPWC605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CRPWC610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CRPWC620	8 (8.4)	20,000 ± 100	787 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFE603	8 (8.4)	3,000 ± 50	118 ± 2
	ACS3-CAPFE605	8 (8.4)	5,000 ± 50	197 ± 2
	ACS3-CAPFE610	8 (8.4)	10,000 ± 100	394 ± 4
	ACS3-CAPFE620	8 (8.4)	20,000 ± 100	787 ± 4

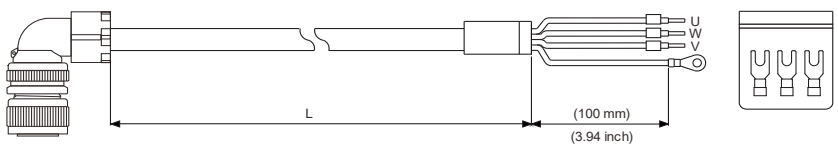
Power Cable

200V F220, 15kw



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CAPWC803	4 (21.2)	3,000 ± 50	118 ± 2
	ACS3-CAPWC805	4 (21.2)	5,000 ± 50	197 ± 2
	ACS3-CAPWC810	4 (21.2)	10,000 ± 100	394 ± 4
	ACS3-CAPWC820	4 (21.2)	20,000 ± 100	788 ± 4

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFC803	4 (21.2)	3,000 ± 50	118 ± 2
	ACS3-CAPFC805	4 (21.2)	5,000 ± 50	197 ± 2
	ACS3-CAPFC810	4 (21.2)	10,000 ± 100	394 ± 4
	ACS3-CAPFC820	4 (21.2)	20,000 ± 100	788 ± 4



Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-CRPWC803	4 (21.2)	3,000 ± 50	118 ± 2
	ACS3-CRPWC805	4 (21.2)	5,000 ± 50	197 ± 2
	ACS3-CRPWC810	4 (21.2)	10,000 ± 100	394 ± 4
	ACS3-CRPWC820	4 (21.2)	20,000 ± 100	788 ± 4

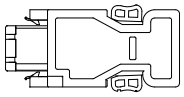
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-CAPFE603	4 (21.2)	3,000 ± 50	118 ± 2
	ACS3-CAPFE605	4 (21.2)	5,000 ± 50	197 ± 2
	ACS3-CAPFE610	4 (21.2)	10,000 ± 100	394 ± 4
	ACS3-CAPFE620	4 (21.2)	20,000 ± 100	788 ± 4

Ordering Information

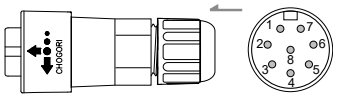
Accessories

Encoder Connectors

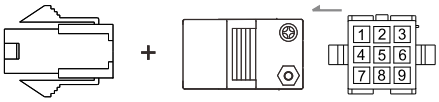
ACS3-CNENC200
(connecting to drive)



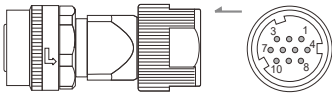
ACS3-CNEN2A00
(for F80 and below)
IP67 waterproof connector



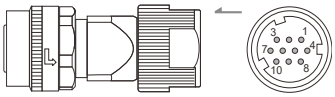
ACS3-CAEN0000
(for F80 and below)



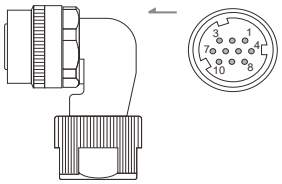
ACS3-CAENA000
(for F100 - F180)
Mil-Spec: CMV1-SP10S
Clip-on



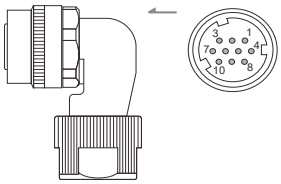
ACS3-CAENM000
(for F100~F180)
Mil-Spec: CM1-SP10S
Threaded (high vibration requirements)



ACS3-CRENA000
(for F100 - F180)
Mil-Spec: CMV1-AP10S
Clip-on



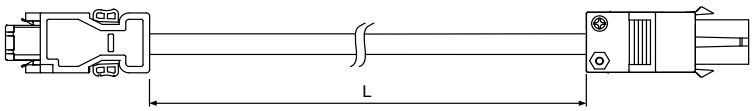
ACS3-CRENA000
(for F100 ~ F180)
Mil-Spec: CMV1-AP10S



Encoder Cable (Incremental Type)

F40 ~ F80

B3 motor, straight connector



Cable	Model Name	L	
		mm	inch
Standard	ACS3-CAEN0103	3,000 ± 50	118 ± 2
	ACS3-CAEN0105	5,000 ± 50	197 ± 2
	ACS3-CAEN0110	10,000 ± 100	394 ± 4
	ACS3-CAEN0120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAEF0103	3,000 ± 50	118 ± 2
	ACS3-CAEF0105	5,000 ± 50	197 ± 2
	ACS3-CAEF0110	10,000 ± 100	394 ± 4
	ACS3-CAEF0120	20,000 ± 100	787 ± 4

Power line wiring non-braking models

Braking / non-braking models - forward outlet

Cable	Model Name	UVW	L	
		AWG (mm^2)	mm	inch
Torsion-Resistant	ACS3-AFPRSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-AFPRSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-AFPRSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-AFPRSR20	20 (0.5)	20,000 ± 50	787 ± 4

Ordering Information

Accessories

Power line wiring non-braking models

Braking / non-braking models - reverse outlet

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Torsion-Resistant	ACS3-ABPRSR03	20 (0.5)	3,000 ± 50	118 ± 2
	ACS3-ABPRSR05	20 (0.5)	5,000 ± 50	197 ± 2
	ACS3-ABPRSR10	20 (0.5)	10,000 ± 50	394 ± 4
	ACS3-ABPRSR20	20 (0.5)	20,000 ± 50	787 ± 4

IP65 power adapter cable

Braking machine type - forward outlet

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-AFESSW0C	20 (0.5)	3,000 ± 10	11.8±0.4
Torsion-Resistant	ACS3-AFEFSW0C	20 (0.5)	3,000 ± 10	11.8±0.4

Brake type - reverse outlet

Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-ABESSW0C	20 (0.5)	3,000 ± 10	11.8±0.4
Torsion-Resistant	ACS3-ABEFSW0C	20 (0.5)	3,000 ± 10	11.8±0.4

IP65 signal adapter cable

Forward outlet

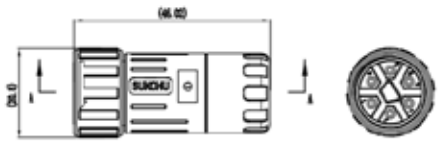
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-AFENSW0C	26 (0.128)	3,000 ± 10	11.8±0.4
Torsion-Resistant	ACS3-AFEBSW0C	26 (0.128)	3,000 ± 10	11.8±0.4

Reverse outlet

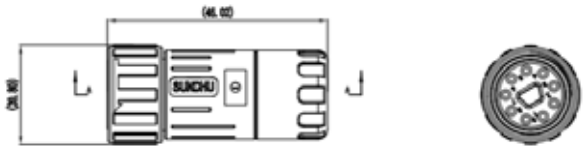
Cable	Model Name	UVW	L	
		AWG (mm²)	mm	inch
Standard	ACS3-ABENSW0C	26 (0.128)	3,000 ± 10	11.8±0.4
Torsion-Resistant	ACS3-ABEBSW0C	26 (0.128)	3,000 ± 10	11.8±0.4

IP65 counterpart parts

ACS3-CNPWU000
Power Counterpart Female



ACS3-CNPWU000
Signal Counterpiece Female



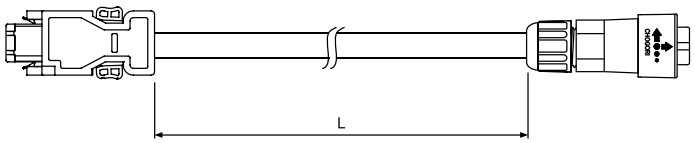
Ordering Information

Accessories

Encoder Cable (Incremental Type)

F40~F80

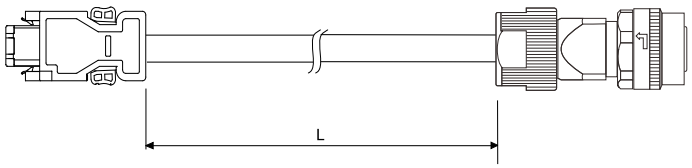
A3/B3 motor, IP67 waterproof connector



Cable	Model Name	L	
		mm	inch
Standard	ACS3-CAEN1103	3,000 ± 50	118 ± 2
	ACS3-CAEN1105	5,000 ± 50	197 ± 2
	ACS3-CAEN1110	10,000 ± 100	394 ± 4
	ACS3-CAEN1120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAEF1103	3,000 ± 50	118 ± 2
	ACS3-CAEF1105	5,000 ± 50	197 ± 2
	ACS3-CAEF1110	10,000 ± 100	394 ± 4
	ACS3-CAEF1120	20,000 ± 100	787 ± 4

F100~F180

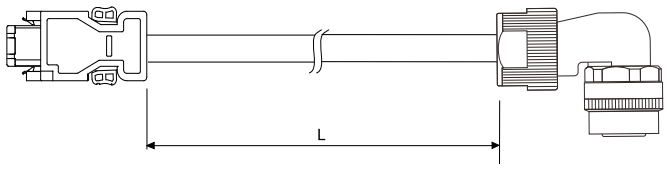
B3 motor, straight connector



Cable	Model Name	L	
		mm	inch
Standard	ACS3-CAENA103	3,000 ± 50	118 ± 2
	ACS3-CAENA105	5,000 ± 50	197 ± 2
	ACS3-CAENA110	10,000 ± 100	394 ± 4
	ACS3-CAENA120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAEFA103	3,000 ± 50	118 ± 2
	ACS3-CAEFA105	5,000 ± 50	197 ± 2
	ACS3-CAEFA110	10,000 ± 100	394 ± 4
	ACS3-CAEFA120	20,000 ± 100	787 ± 4

F100~F180

A3/B3 motor, angular connector

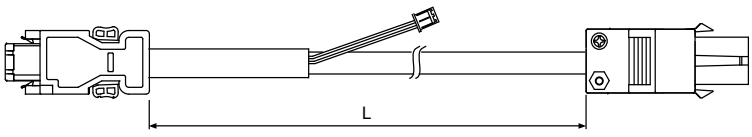


Cable	Model Name	L	
		mm	inch
Standard	ACS3-CREN0103	3,000 ± 50	118 ± 2
	ACS3-CREN0105	5,000 ± 50	197 ± 2
	ACS3-CREN0110	10,000 ± 100	394 ± 4
	ACS3-CREN0120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CREF0103	3,000 ± 50	118 ± 2
	ACS3-CREF0105	5,000 ± 50	197 ± 2
	ACS3-CREF0110	10,000 ± 100	394 ± 4
	ACS3-CREF0120	20,000 ± 100	787 ± 4

Encoder Cable (Absolute Type)

F40~F80

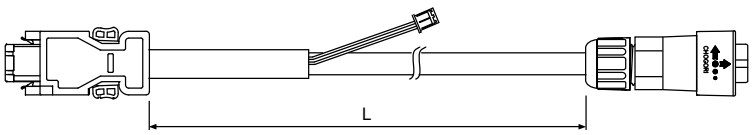
A3/B3 motor



Cable	Model Name	L	
		mm	inch
Standard	ACS3-CAEA0103	3,000 ± 50	118 ± 2
	ACS3-CAEA0105	5,000 ± 50	197 ± 2
	ACS3-CAEA0110	10,000 ± 100	394 ± 4
	ACS3-CAEA0120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAEB0103	3,000 ± 50	118 ± 2
	ACS3-CAEB0105	5,000 ± 50	197 ± 2
	ACS3-CAEB0110	10,000 ± 100	394 ± 4
	ACS3-CAEB0120	20,000 ± 100	787 ± 4

F40~F80

A3/B3 motor, IP67 waterproof connector



Cable	Model Name	L	
		mm	inch
Standard	ACS3-CAEA1103	3,000 ± 50	118 ± 2
	ACS3-CAEA1105	5,000 ± 50	197 ± 2
	ACS3-CAEA1110	10,000 ± 100	394 ± 4
	ACS3-CAEA1120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAEB1103	3,000 ± 50	118 ± 2
	ACS3-CAEB1105	5,000 ± 50	197 ± 2
	ACS3-CAEB1110	10,000 ± 100	394 ± 4
	ACS3-CAEB1120	20,000 ± 100	787 ± 4

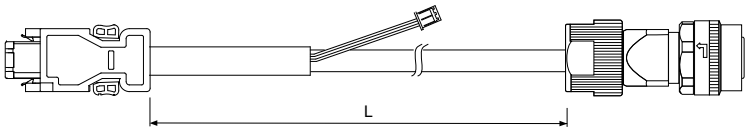
Ordering Information

Accessories

Encoder Cable (Absolute Type)

F100 - F180

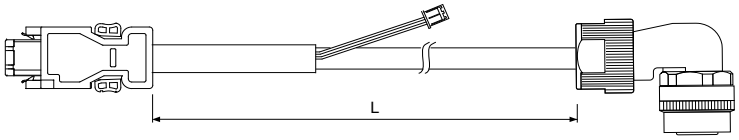
A3 / B3 motor, straight connector



Cable	Model Name	L	
		mm	inch
Standard	ACS3-CAEAA103	3,000 ± 50	118 ± 2
	ACS3-CAEAA105	5,000 ± 50	197 ± 2
	ACS3-CAEAA110	10,000 ± 100	394 ± 4
	ACS3-CAEAA120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CAEBA103	3,000 ± 50	118 ± 2
	ACS3-CAEBA105	5,000 ± 50	197 ± 2
	ACS3-CAEBA110	10,000 ± 100	394 ± 4
	ACS3-CAEBA120	20,000 ± 100	787 ± 4

F100 - F180

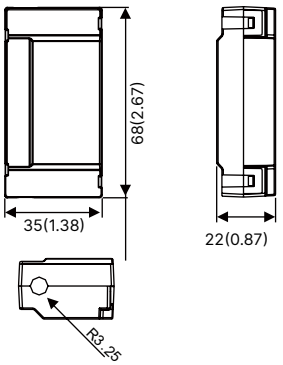
A3 / B3 motor, angular connector



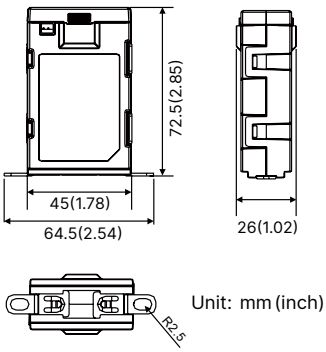
Cable	Model Name	L	
		mm	inch
Standard	ACS3-CREAA103	3,000 ± 50	118 ± 2
	ACS3-CREAA105	5,000 ± 50	197 ± 2
	ACS3-CREAA110	10,000 ± 100	394 ± 4
	ACS3-CREAA120	20,000 ± 100	787 ± 4
Torsion-Resistant	ACS3-CREBA103	3,000 ± 50	118 ± 2
	ACS3-CREBA105	5,000 ± 50	197 ± 2
	ACS3-CREBA110	10,000 ± 100	394 ± 4
	ACS3-CREBA120	20,000 ± 100	787 ± 4

Absolute Battery Box

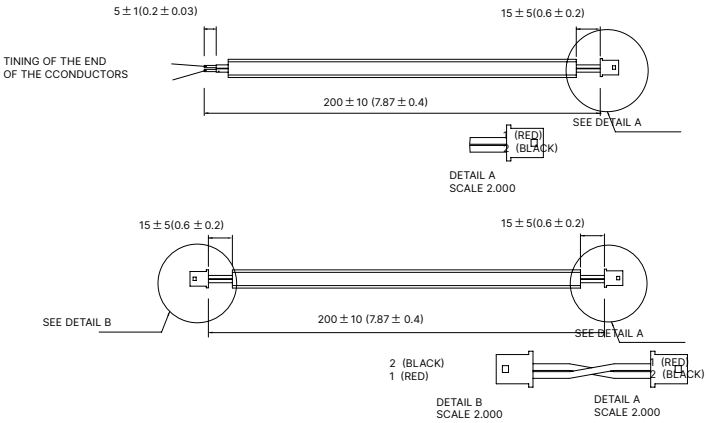
Single Battery Box
ASD-MDBT0100



Double Battery Box
ASD-MDBT0200



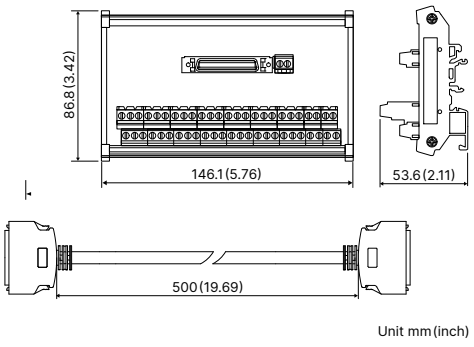
Unit: mm (inch)



Note: Contact Delta Global Service team if ordering battery box cord only

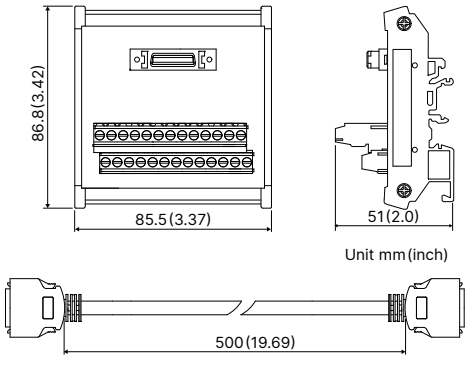
CN1 Terminal Block Module

ACS3-MDTB5000 (for A3-L、A3-M)



Unit mm (inch)

ACS3-MDTB2600 (for A3-F、A3-E)



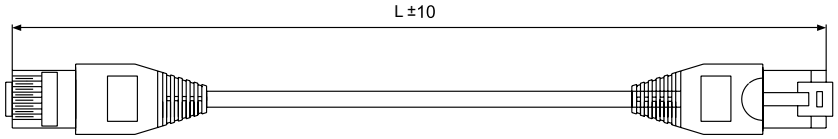
Unit mm (inch)

Ordering Information

Accessories

CCN3 CANopen Communication Cable

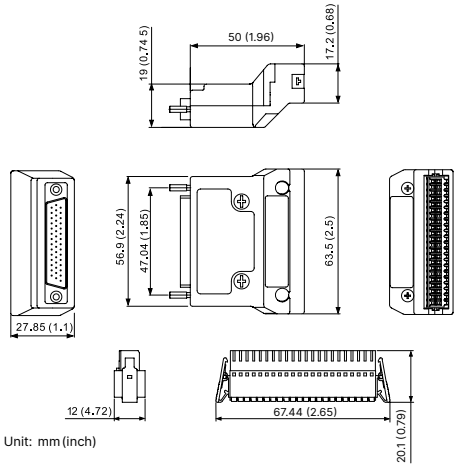
UC-CMC030-01A 、 UC-CMC050-01A



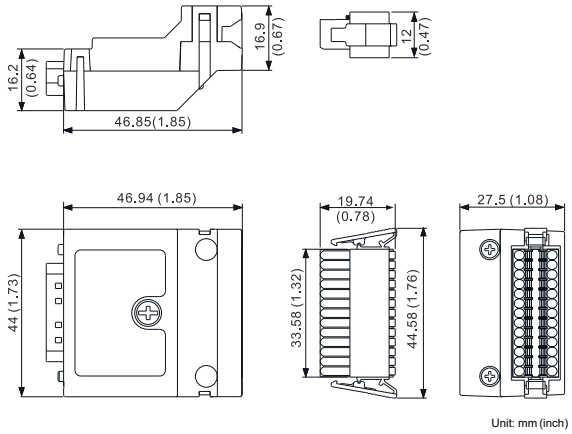
Item	Part No.	L	
		mm	inch
1	UC-CMC030-01A	3,000 ± 10	11 ± 0.4
2	UC-CMC050-01A	5,000 ± 10	19 ± 0.4

CN1 Connectors

ACS3-IFSC5020 (for A3-L、A3-M)

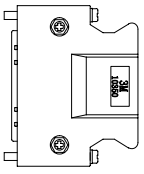


ACS3-IFSC2616 (for A3-L、A3-M)

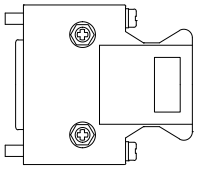


CN1 Connectors

ACS3-CNADC150 (for A3-L、A3-M)

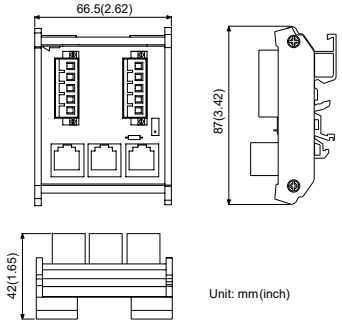


ASD-CNSC002 (for A3-F、A3-E)



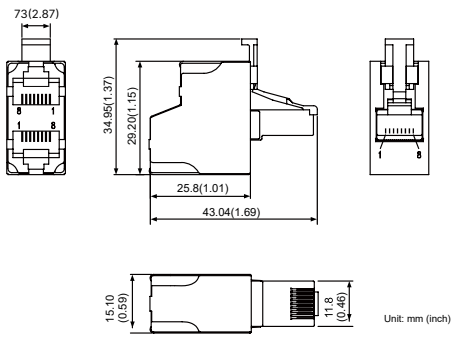
CN3 CANopen Distribution Box

TAP-CN03



CN3 RS-485 Tap

ACS3-CNADC3RC

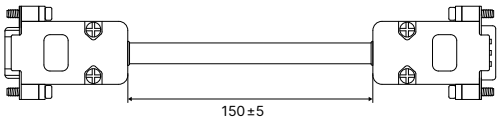


Ordering Information

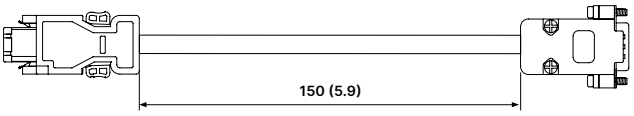
Accessories

B3 / B2 Conversion Cables

A3/A2 CN5 Adapter cable
ACS3-CAADC



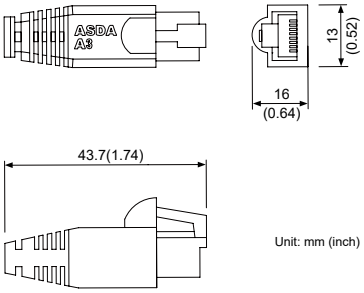
A3/A2 CN2 Adapter cable
ACS3-CAADC2



Unit: mm (inch)

CN3 RS-485 / CANOpen Terminal Resistor

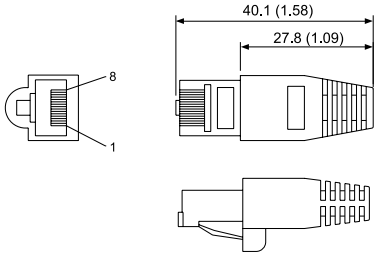
ACS3-CNADC3TR



Unit: mm (inch)

CN6 DMCNET Terminal Resistor

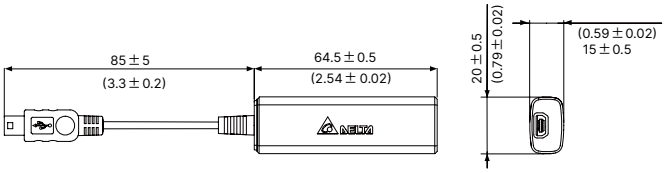
ASD-TR-DM0008

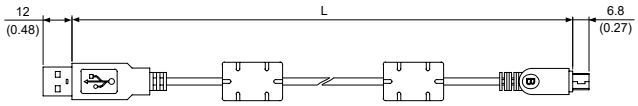


Unit: mm (inch)

CN4 Mini USB Communication Module

UC-PRG015-01B、UC-PRG030-01B



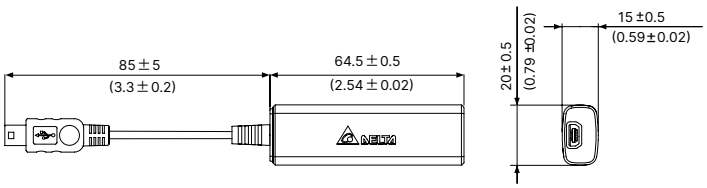


Unit: mm (inch)

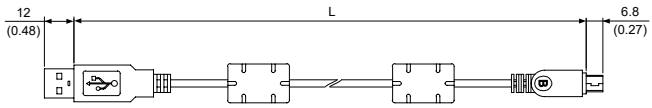
Item	Part No.	L	
		mm	inch
1	UC-PRG015-01B	1,500±10	59±4
2	UC-PRG030-01B	3,000±10	118±4

CN4 Mini USB Communication Module

UC-ADP01-A



UC-PRG015-01A、UC-PRG030-01A



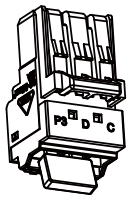
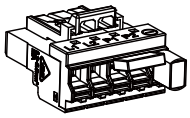
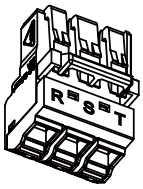
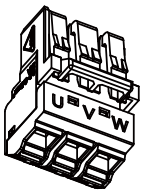
Unit: mm (inch)

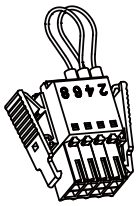
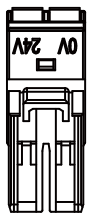
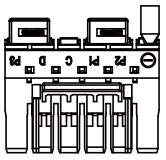
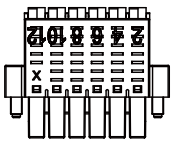
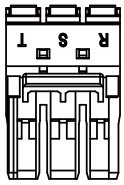
Item	Part No.	L	
		mm	inch
1	UC-PRG015-01A	1,500±10	59±4
2	UC-PRG030-01A	3,000±10	118±4

Ordering Information

A3 Motor Accessory

Service Bag P/N (Can not purchase P/N with 35 opening directly, please place each item P/N below separately.)	Contents
3535043600	A+B+C+D+E
3535043300	A+B+C+D+E+F
3534998200	G+H+J+D+E+F
3535003400	G+H+I+J+D+E+F
3534993900	I+F
3534999700	F

Item	P/N	Picture	Remark
A	3050608746		**BUSS and Regen 200V,**
B	3050606746		**Control Power 200V**
C	3050605546		**Main Power Input 200V**
D	3050605646		**Motor Power 200V**
E	3479065500		**Compression Tool**

Item	P/N	Picture	Remark
F	3050027000		**CN1 STO**
G	3050606846		**Control Power 400V**
H	3050609246		**BUSS and Regen 400V**
I	3050611946		**CN1 for A3-EP**
J	3050609346		**Main Power Input 400V**

Servo Drive Standards

Standard	ASD-A3 servo drive conforms to the highest standards and recommendations for electrical industrial control equipment (IEC, EN)
EMC Immunity	EN61000-4-6 Level 3
	EN61000-4-3 Level 3
	EN61000-4-2 Level 2 and 3
	EN61000-4-4 Level 3
	EN61000-4-8 Level 4
	EN61000-4-5 Level 3
Conducted and Radiated EMC Interference of Servo Drive	EN61800-3 Level 3, with external EMC filter
CE Marking	A3 series servo drives have the CE marking and conform to the European Union Low Voltage Directive (2014/35/EU) and EMC Directive (2014/30/EU)
Product Certification	UL (USA); cUL (CA) Note: B3 400V (with no UL)
STO	EN 61800-5-2:2007
	EN 61800-5-2:2017
	EN 61800-5-1:2007 + A1:2017, 4.3, 5.2.3.8, 5.2.6
	EN IEC 61800-3:2018
	EN 62061:2005 + AC:2010 + A1:2013 + A2:2015
	EN ISO 13849-1:2015
	EN 61508 Parts 1-7:2010
Protection Level	IEC / EN50178, IP20
Vibration Resistance Protection	20 Hz and below (1G), 20 ~ 50 Hz (0.6 G) conforms to IEC / EN50178
Shock Resistance Protection	15 gn 11 ms conforms to IEC / EN600028-2-27
Pollution Degree	Degree 2 conforms to IEC/EN61800-5-1
CE	EN 60034-1
Certification	UL, CE, cRUus
Protection Level	IP67
Vibration Resistance Protection	30 Hz ≦ f ≦ 2,000 Hz Fix Acceleration: 5 G
Energy Efficiency Certification	CHINA ENERGY (Power > 550 W)

Smarter. Greener. Together.

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