

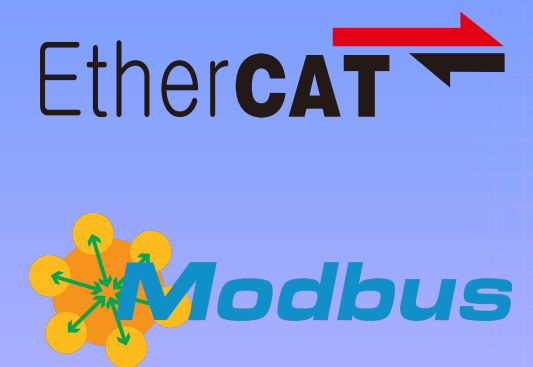


Reliable Motion Control Products

Leading Technology Shining Value

## Servo Products (2020)

- ▶ AC Servo Drives
- ▶ AC Servo Motors
- ▶ Brushless Servo Drives
- ▶ Brushless Servo Motors
- ▶ Integrated Servo Motors



CANopen®



### Leadshine Technology Co., Ltd. (Headquarters)

Address: Floor 11, Block A3, iPark  
1001 Xueyuan Blvd. Nanshan District  
Shenzhen, Guangdong 518055  
China

Fax: 86-755-2640 2718

Website: <http://www.leadshine.com>

Email: [sales@leadshine.com](mailto:sales@leadshine.com)(Sales)

[tech@leadshine.com](mailto:tech@leadshine.com)(Technical Support)

### Leadshine America, Inc. (North America Office)

Address: 26050 Towne Centre Dr.  
Foothill Ranch, CA 92610  
USA

Tel: 1-949-608-7270

Fax: 1-949-638-7298

Website: <http://www.leadshineusa.com>

Email: [sales@leadshineusa.com](mailto:sales@leadshineusa.com)(Sales)

[tech@leadshineusa.com](mailto:tech@leadshineusa.com)(Technical Support)

[info@leadshineusa.com](mailto:info@leadshineusa.com)(General Inquiry)

# Company Profile

Founded in 1997 by Warren Li, a MIT PhD graduate and former USA professor, Leadshine Technology Co., Ltd. is a leading technology company dedicated to design, manufacture, market, and support reliable and affordable motion control products based on the latest control technologies. Leadshine offers a full complement of products including motion controllers, control systems, integrated servos, servo drives & motors, easy servo drives & motors (closed loop steppers), integrated easy servo motors, integrated steppers, stepper drives & motors. Today, Leadshine is one of the largest motion control companies in the world to provide solutions and quality products to tens of industries, and thousands of OEM clients in Asia, Europe, North & South America, Australia, and Africa.

## R&D

Led by Dr. Li, a PhD majored in robotics & servo controls from MIT, Leadshine has one of the strongest R&D teams in the motion control industry. The team consists of more than 100 R&D engineers and all of them are highly educated with most of them carry PhD & Master degrees in controls, electrical & electronics engineering, mechanical engineering, mechatronics, computer engineering, and computer science. Their strong background and experience allow Leadshine capable of designing superior quality products based the latest technology in the most efficient way.

## Product Quality

Leadshine operates manufacturing facilities which are superiorly equipped, professionally staffed, and ISO-9001 certified. That allows Leadshine to provide highly reliable quality motion control products OEM clients in the shortest time.

Leadshine's products have proven records of being successfully adopted in thousands of applications such as CNC routers, mills, plasmas, lathes, laser cutters/engravers/markers, inkjet printers, plotters, electronics equipments, medical equipments, semiconductor assembly & inspection machines, electronics machines, packaging equipments, textile machines, robotics, pick-and-place devices, etc. In most cases, Leadshine's standard "off-the-shelf" products are able to satisfy the motion control needs for most applications. For many OEM applications with special requirements, Leadshine also offers customized products with optimized performance.

## Support and Service

Leadshine believes the key to be a successful motion product supplier is the commitment to fully understanding our customer's applications and working closely with our OEM clients. In many cases, Leadshine engineers can participate in the whole process of client product development, including initial application evaluation, product selection, design help & suggestion. Our expertise and experience allow us to help OEM clients to produce competitive high quality machines in their industries.



# Product Overview

## AC Servo Systems



**Voltage Input:** 220VAC 1/3ph input  
**Motor frame size:** 40mm, 60mm, 80mm, 130mm  
**Motor Power(W):** 100, 200, 400, 750, 850, 1000, 1200, 1500, 1800, 2000

**Encoder:**  
 ■ 17bit incremental encoder  
 ■ 23bit multi-turn absolute encoder

**Features:**  
 ■ Automatic motor identification  
 ■ RS485/Modbus/EtherCAT  
 ■ Notch filter, Damping filter

**Command source:**  
 ■ Pulse+Direction  
 ■ Analog input  
 ■ Modbus RTU  
 ■ EtherCAT  
   • Cia402  
   • CoE-Based on DSP-402 Device Profile  
 ■ PR Mode  
   • Programmable 16-segment position table,  
   • support positioning/homing/ limit/  
   • quick stop/ JOG...

**Inputs and Outputs:**  
 ■ Pulse: 0-500kHz, 5V differential input/24V Single-ended  
 ■ 9 inputs(common+ and common- two wiring modes)  
 ■ 6 outputs(4 single-ended, 2 differential)  
 ■ Encoder ABZ output(3 single-ended, 3 differential)  
 ■ -10Vdc~+10Vdc Analog

Position Mode

Velocity Mode

Torque Mode

## Brushless Servo Systems



**Voltage Input:** 24~70VDC  
**Motor Frame Size:** 40mm, 42mm, 57mm, 60mm, 80mm  
**Motor Power(W):** 100, 200, 400, 750, 1000, 1200

**Encoder:**  
 1000 line, 2500 lines, 17 bit

**Features:**  
 ■ RS485/Modbus/Canopen  
 ■ Notch filter, Damping filter  
 ■ Internal resistor

**Command source:**  
 ■ Pulse+Direction(for position control)  
 ■ Analog input(for velocity/torque control )  
 ■ Modbus based on RS485  
 ■ PR Mode  
   • Programmable 16-segment position table,  
   • Support positioning/homing/ limit/  
   • Quick stop/ JOG...  
 ■ CANopen

**Inputs and Outputs:**  
 ■ 2 fast pulse input, 5V only  
 ■ 7 programmable OC inputs, 24V  
 ■ 2 programmable differential outputs  
 ■ 3 programmable OC outputs, 24V  
 ■ 1 analog output: -10V to +10V(Optional)

Position Mode

Velocity Mode

Torque Mode

## Integrated Servo Motors



**Voltage Input:** 24~50VDC  
**Motor Frame Size:** 57mm, 60mm  
**Motor Power(W):** 90, 100, 130, 180, 200

**Encoder:** 1000-line, 16-Bit

**Features:**  
 ■ Highly Intergrated  
 ■ Easy tuning, flexible to control  
 ■ Lower Cable Cost  
 ■ Save Mounting Space

**Command source:**  
 ■ Pulse+Direction

**Inputs and Outputs:**  
 ■ Alarm output

Position Mode



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# ELP Series AC Servo Drives



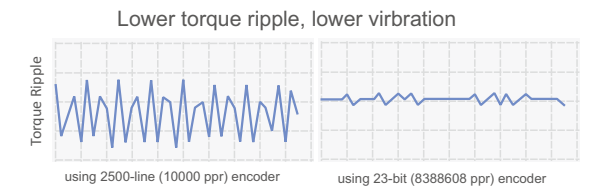
- Power range: 100W - 2kW
- 220 Vac input
- Automatic motor identification
- Easy tuning
- Built-in dynamic brake

ELP Series AC servo products are high performance AC digital servo which is designed for position/velocity/torque high accurate control, power range up to 2kW and it can provide intelligent performance with easy tuning process. Combined with abundant features like MFC, vibration suppression, Multi-mode filter function, etc. It provides machines a compact size, low tuning works, but high resolution encoder up to 23 Bits, which can be used for high accuracy applications.

ELP-D Pulse Version ELP-D Series Drive	ELP-RS Version ELP-RS Series Drive	ELP-EC Version ELP-EC Series Drive
<b>Position</b>	<b>Position/Velocity/Torque Mode</b>	<b>Position/Velocity/Torque Mode</b>
<ul style="list-style-type: none"> <li>• 5V differential pulse/24V single-ended pulse</li> <li>• 17bit Single-turn Incremental Encoder /23bit Multi-turn Absolute Encoder</li> <li>• Built-in dynamic brake</li> <li>• New protuner-Motion Studio supported</li> </ul>	<ul style="list-style-type: none"> <li>• Rs485 based on Modbus</li> <li>• 16paths Motion-PR Mode</li> <li>• 17bit Single-turn Incremental Encoder/ 23bit Multi-turn Absolute Encoder</li> <li>• Built-in dynamic brake</li> <li>• New protuner-Motion Studio supported</li> </ul>	<ul style="list-style-type: none"> <li>• EtherCAT—Cia402 · CoE</li> <li>• 14 Inputs and 6 outputs</li> <li>• 17bit Single-turn Incremental Encoder/ 23bit Multi-turn Absolute Encoder</li> <li>• Built-in dynamic brake</li> <li>• New protuner-Motion Studio supported</li> </ul>

### High Precision

- Up to 23bit(8388608 ppr) high resolution encoder.
- Motors come with up to 23bit (8388608 ppr) high resolution encoders are also available for applications require higher precision, smoother movement and lower torque ripple



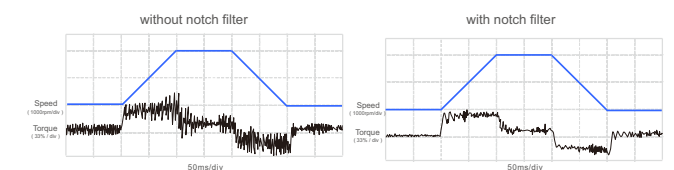
### Excellent Position Following Capability

- By adopting load identification and torque feedforward advanced control algorithms, very small velocity ripple and position following error can be achieved. It is a great feature of the ELP when multi-axis synchronization such as interpolations are required.



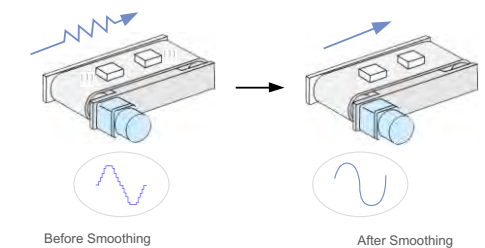
### Vibration Suppression

- Adaptive filter makes the notch filter frequency automatically follow the machine resonance frequency.
- Can suppress vibration occurring at both starting and stopping in low stiffness machine.
- Suppress vibration frequency up to 1500 Hz.

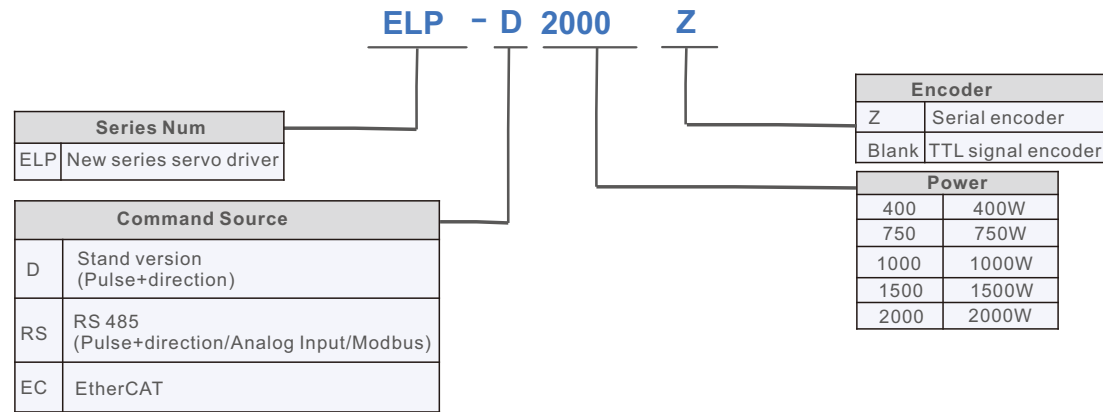


### Command Signal Smoothing

- Command signal smoothing can soften the effect of immediate change in velocity and direction, delivering smoother movement and longer lifetime.



## Part Numbers



## Specifications

Servo drive model	ELP-*400Z	ELP-*750Z	ELP-*1000Z	ELP-*1500Z	ELP-*2000Z
Rated output power	400W	750W	1000W	1500W	2000W
Rated output current [A]	2	5.5	7	9.5	12
Max output current [A]	8.5	16.5	21	28.5	36
Dimensions(mm)	40*175*156	50*175*156	50*175*156	80*175*175	80*175*175
Main power	1-phase 190Vac – 240Vac , 50/60Hz		1 or 3-phase 190Vac – 240Vac,50/60Hz		
Control power	1-phase 190Vac–240Vac, 50/60Hz				
Control mode	IGBT SVPWM sinusoidal wave control				
Feedback mode	17bit single-turn incremental encoder/23bit multi-turn absolute encoder				
Input pulse	0-500kHz,5V differential input				
Position band width	200HZ				
Electronic gear ratio	1~32767/1~32767				
Analog input	-10~10Vdc,input resistance 20KΩ, no isolation				
Velocity band width	500HZ				
Input signal	Di : 9 inputs (common-cathode , common-anode ) Servo enable, over-travel inhibition, gain switching, command pulse inhibition, speed zero clamp, deviation counter clear, alarm clear				
Output signal	Do : 6 outputs ( 4 single-ended , 2 differential ) Alarm output, servo-ready, at-speed, zero-detection, velocity coincidence				
Encoder signal output	A phase, B phase, Z phase, long-distance drive mode output				
Alarm function	Over-voltage, under-voltage, over-current, over-load, encoder error, position deviation error, brake alarm, limit alarm, over-speed error etc.				
Debug software	All setting values of current loop, velocity loop , position loop can be modified and saved with Motion Studio software , all setting values can be downloaded and uploaded				
Communication interface	USB : Based on Modbus protocol (according to USB2.0 specification) RS485				
Brake mode	Built-in brake resistor or external resistor				
Adapt load inertia	Less than 30 times motor inertia				
weight	About 1.5-3Kg				

Servo drive series	ELP-D***Z	ELP-RS***Z	ELP-EC***Z
Control mode	<ul style="list-style-type: none"> <li>Position control</li> <li>JOG</li> </ul>	<ul style="list-style-type: none"> <li>Position control</li> <li>Velocity control</li> <li>Torque control</li> <li>Built-in PR mode Modbus RTU</li> <li>JOG</li> </ul>	<ul style="list-style-type: none"> <li>CSP(Cyclic Synchronous Position)</li> <li>CSV(Cyclic Synchronous Velocity)</li> <li>CST(Cyclic Synchronous Torque)</li> <li>PP(Profile Position)</li> <li>PV(Profile Velocity)</li> <li>PT(Profile Torque)</li> <li>HM(Homing)</li> </ul>
Encoder output	5V Differential , 0-500kHz 24Vsingle-ended,0-200kHz	5V Differential , 0-500kHz 24Vsingle-ended,0-200kHz	--
Digital input	9 inputs (common-cathode , common-anode)	9 inputs (common-cathode , common-anode)	14 inputs (common-cathode/ common-anode) 2 differential (for capture probe)
Digital output	6 inputs (4 single-ended , 2 differential)		
Analog input	--	2 analog input: -10 ~ +10Vdc	--
Network	--	Modbus RTU (RJ 45)	EtherCAT (RJ45)
Maximum frequency Of pulse input	5V Differential , 500kHz 24Vsingle-ended, 200kHz	5V Differential , 500kHz 24Vsingle-ended, 200kHz	--

## Motion Studio - New Tuning Software

- Information such as parameter setting and monitoring are consolidated easily just by connecting a personal computer to servo drive.
- Display parameter setting in list or visual formats, and set parameters by selecting from the drop down list
- Adjust control gain finely on the [Tuning] window manually for better performance.
- State monitoring and 4 channel wave showing with high accuracy.
- Easy to set the values of object dictionary for drive with EtherCAT version.
- Easy to read/save/download/compare/reset all parameters.

The image displays several screenshots of the Motion Studio software interface. The top-left screenshot shows the 'Setup Progress' window with various configuration options like 'Control mode', 'Motor configuration', and 'Performance adjustment'. The top-right screenshot shows the 'Wave Show' window with a graph of 'Position error' and 'Velocity feedback' over time, with status indicators for 'Comm.Online', 'Servo Disable', and 'Alarm.no alarm'. The bottom-left screenshot shows the 'Alarm' window with a table of alarm codes and descriptions. The bottom-right screenshot shows the 'Edit Object Dictionary' window with a table of object dictionary entries.

Alarm Code	Alarm Name	Ala. Reason	Alarm Check	Alarm Handle
Err150	encoder line loss.	1 Encoder line d. Check wiring if s.	Make encoder wiring	
Err150	encoder line loss.	2 Encoder warn. Check encoder w.	Reconnect encoder w.	
Err150	encoder line loss.	3 Encoder warn.	replace the encoder w.	
Err150	motor vibration	4 Encoder mea.	replace the gear with	
Err150	encoder line loss.	5 Encoder mea.		
Err150	motor vibration	6 Motor Speed(m/s)		
Err150	motor vibration	7 Motor Temp(°C)		
Err150	motor vibration	8 Current Phase U(Δ%)		
Err150	motor vibration	9 Current Phase V(Δ%)		
Err150	motor vibration	10 Current Phase W(Δ%)		
Err150	motor vibration	11 DC Bus Voltage(V)		
Err150	motor vibration	12 Driver Temperature(°C)		
Err150	motor vibration	13 Instellation Position(°)		
Err150	motor vibration	14 Feedback Position/Time Pulse Interval(°)		
Err150	motor vibration	15 Encoder Error Count(Count)		
Err150	motor vibration	16 Maximum Current of Motor in 2 Second(%)		
Err150	motor vibration	17 Motor Overload Rate(%)		
Err150	motor vibration	18 Discharge Resistance Overload Rate(%)		
Err150	motor vibration	19 Internal Status		
Err150	motor vibration	20 Input Status		
Err150	motor vibration	21 Output Status		

## Servo Drive Connectors and Terminals

V ELP-D Series
 V ELP-RS Series
 V ELP-EC Series

- Communication Port(CN4,CN5)**
  - ELP-D series—Reserved
  - ELP-RS series—RS485. Standard modbus protocol
  - ELP-EC series—EtherCAT
- USB Communication Port(CN3)**
  - Connect to PC Tuning Software(Motion Studio)
- Control Signal Port(CN1)**
  - Connect to PLC, Motion Controller, CNC controller. Etc
- Encoder Input Port(CN2)**
  - Motor Encoder Feedback Input
- Power LED**
- Heat-dissipation base**
  - Mounting Base and Heat-dissipation Base
- Power Port(L1, L2)**
  - For 200W~1000W: single phase 220V, +15~-15% · 50/60Hz
  - For 1500W~2000W: single/three phase 220V, +15~-15% · 50/60Hz
- External Regenerative Resistor Terminal (P+, Br)**
  - P+: External regenerative resistor P terminal
  - Br: External regenerative resistor terminal
- 3 Phase Motor Power Input(UVW, PE)**
  - UVW: Motor power input
  - PE : Frame ground
- Ground Protection Terminal**



- LED Display**
  - Five LED lights to display monitor value, parameter value and set value
- Key of Mode Switch**
  - Press this key to switch among 4 mode:
    1. Data monitor mode
    2. Parameter setting mode
    3. Auxiliary function mode
    4. EEPROM written mode
- Confirming Key**
  - Entrance for submenu, confirming input
- Down Key**
  - Press this key to decrease the set value of current flash bit
- Up Key**
  - Press this key to increase the set value of current flash bit
- Left Key**
  - Press this key to shift to the next digit on the left

## External Regenerative Resistor

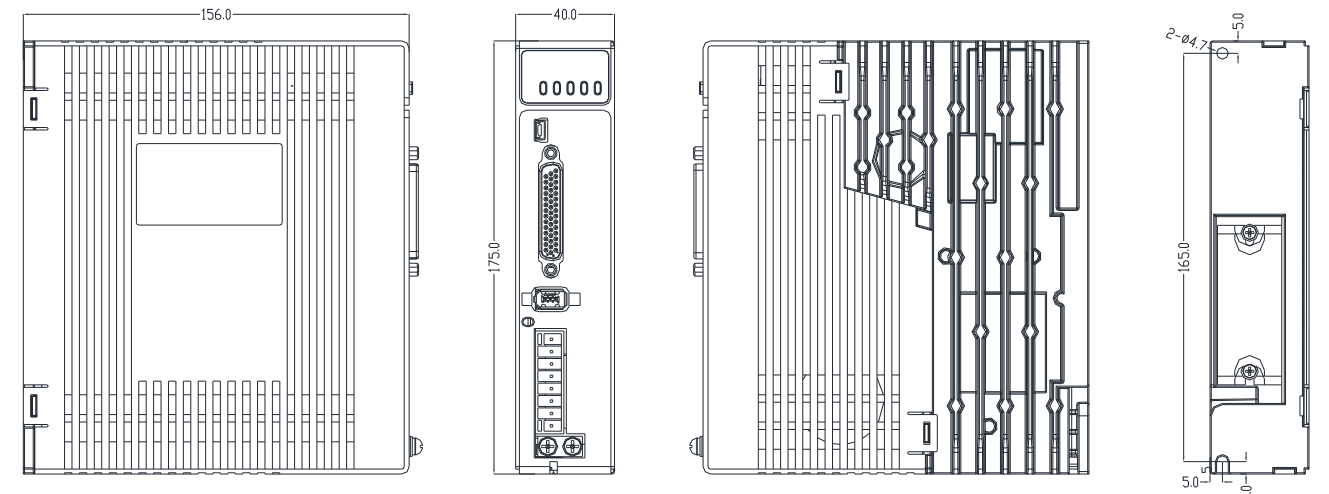
Type	Power	Resistance
RXLG-50W	50W	100Ω
RXLG-100W	100W	100Ω
RXLG-200W	200W	50Ω
RXLG-400W	400W	50Ω
RXLG-800W	800W	50Ω

## Drive Mechanical Specifications

Unit: mm

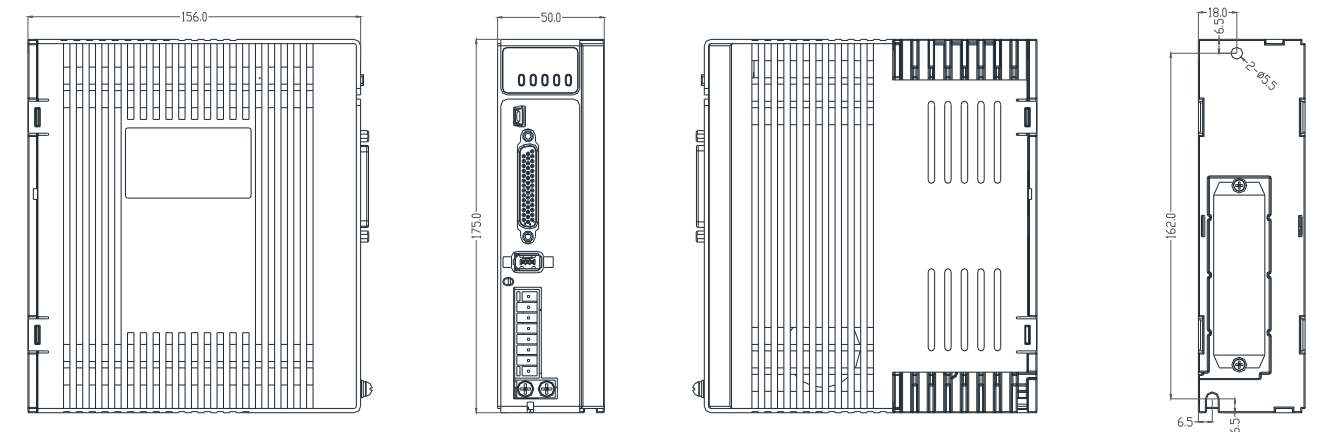
### • 200W/400W

V ELP-D Series
 V ELP-RS Series
 V ELP-EC Series



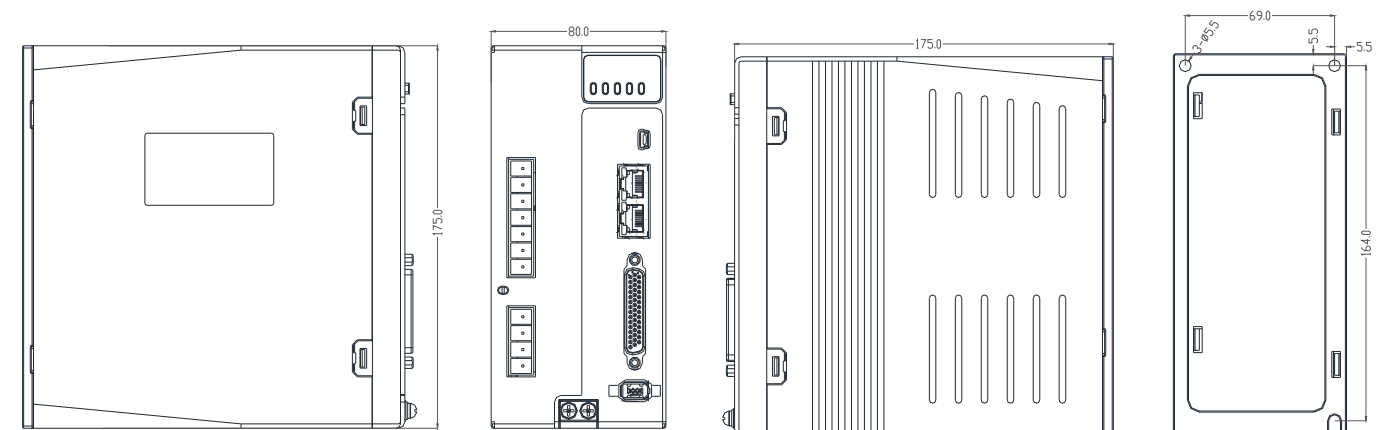
### • 750W/1000W

V ELP-D Series
 V ELP-RS Series
 V ELP-EC Series



### • 1500W/2000W

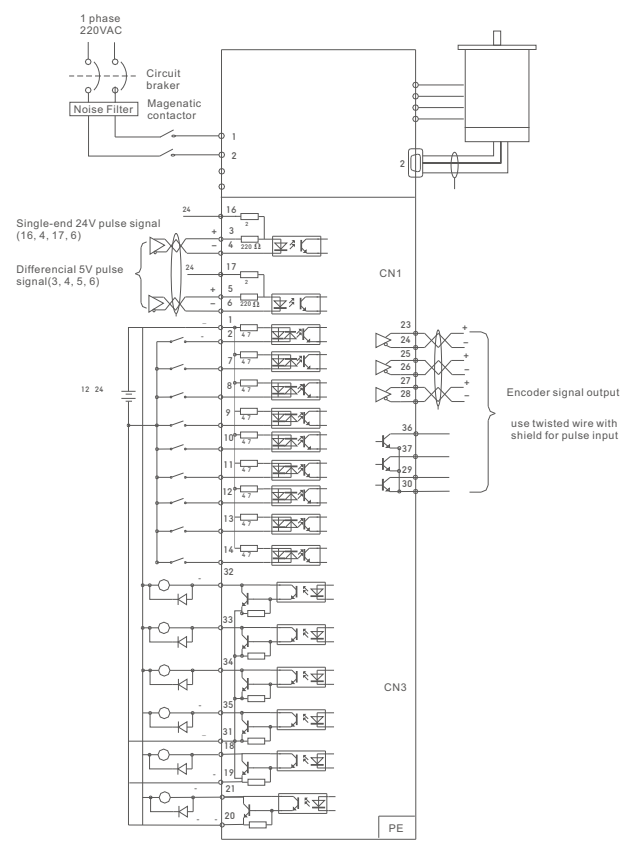
V ELP-D Series
 V ELP-RS Series
 V ELP-EC Series



# Drive Connections

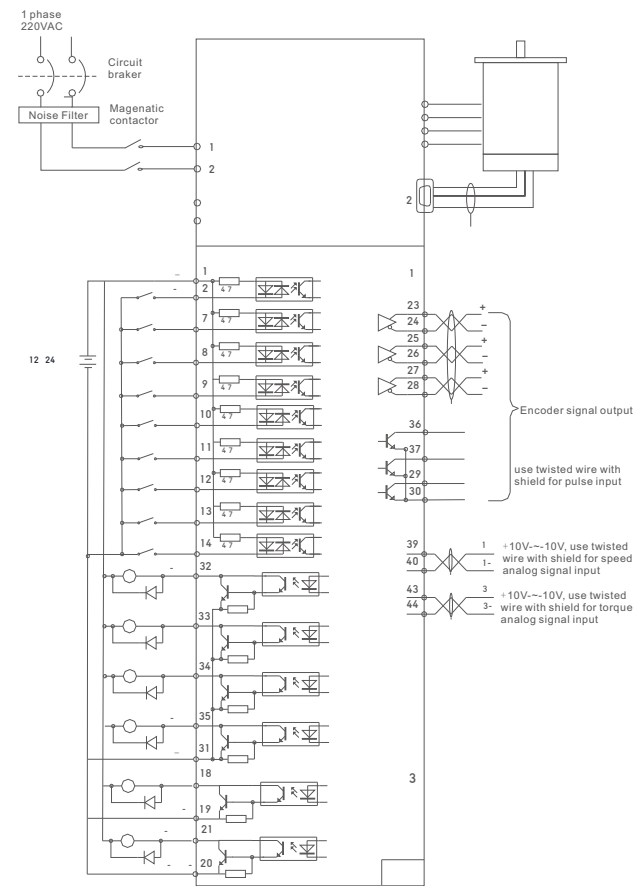
## • Positional Control

ELP-D Series 
  ELP-RS Series 
  ELP-EC Series



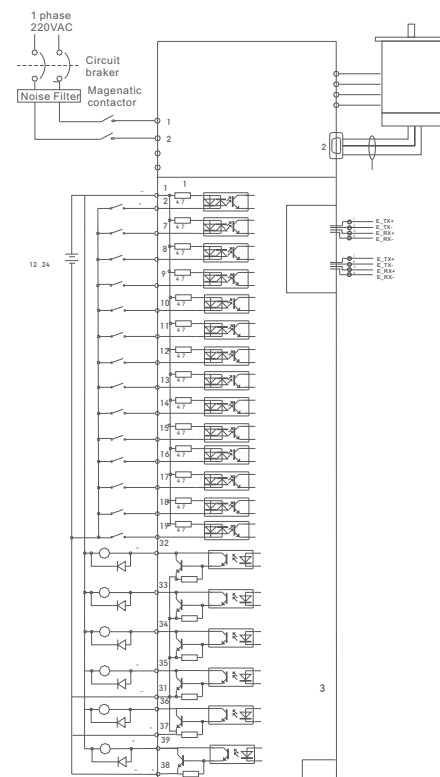
## • Torque/Velocity Control

ELP-D Series 
  ELP-RS Series 
  ELP-EC Series



## • EtherCAT Control

ELP-D Series 
  ELP-RS Series 
  ELP-EC Series



# ELM Series AC Servo Motors

- Power range: 100 - 3kw
- Voltage: 220vac
- Feedback: 1000line, 2500line, 17bit, 23bit absolute encoder
- Frame size: 40mm, 60mm, 80mm, 110mm, 130mm



## Part Numbers

ELM - 0750 L H 80 F -SS

Series Num	
ELM series motor	

Power	
0100	100W
0200	200W
0400	400W
0750	750W
0850	850W
1000	1000W
1200	1200W
1300	1300W
1500	1500W
1800	1800W
2000	2000W
2500	2500W
3000	3000W

Encoder Type	
A	1000-Line Incremental
B	2500-Line Incremental
D	17-Bit single-turn
E	17-Bit multi-turn
F	17-Bit magnetic
L	23-Bit absolute

Inertia Ratio	
L	Low
M	Medium
H	High

Encoder Connector Type	
SS	9-Pin Plastic Connector
HS	15-pin Aviation Connector
H	Plug Aviation Connector
HH	6-Pin Aviation Connector
HD	Special Type Connector

	Shaft Type		Brake		Oil Seal	
	Rotary	Keyway	Yes	No	Yes	No
A	•		•		•	
B	•			•		
C	•		•			•
D	•			•		•
E		•	•		•	
F		•	•			•
G		•	•			•
H		•	•			•

Frame Size	
40	40mm
60	60mm
80	80mm
110	110mm
130	130mm

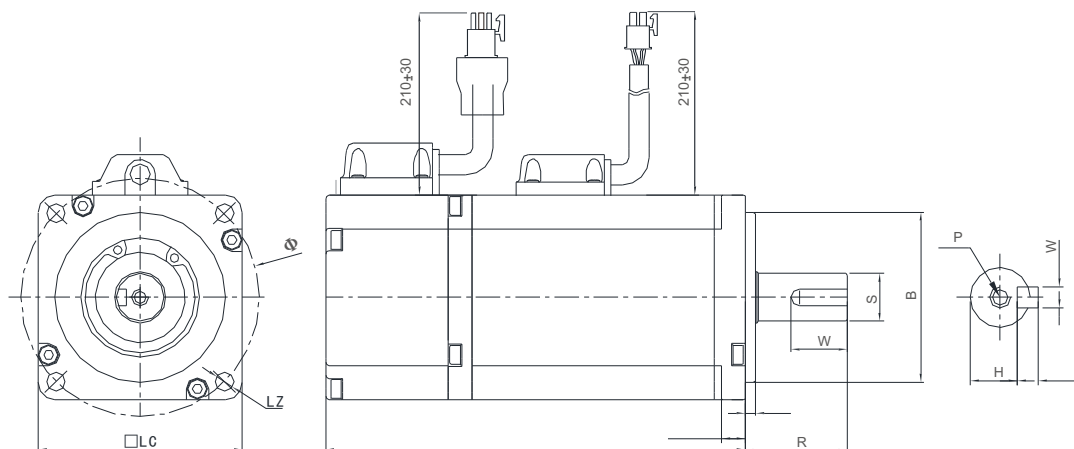


# Servo Motors with 17-Bit Encoders

## • Models

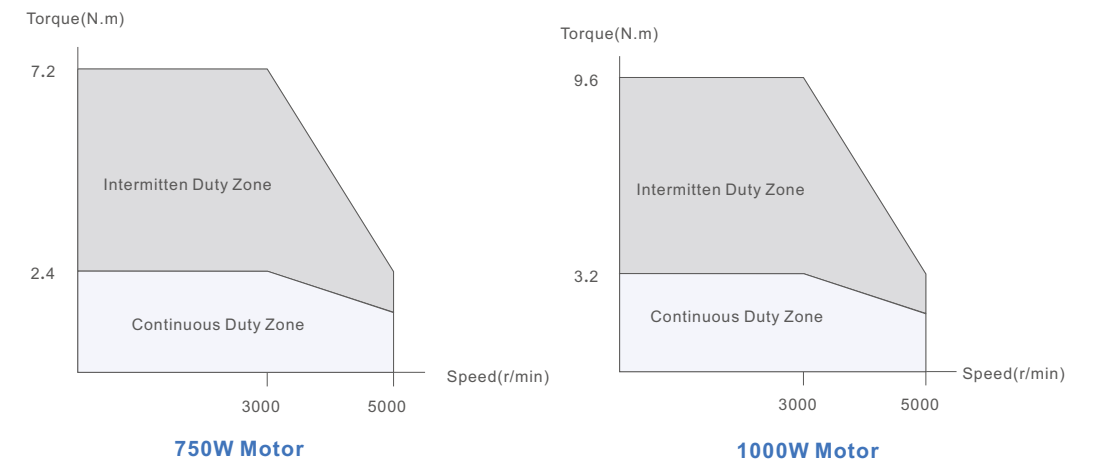
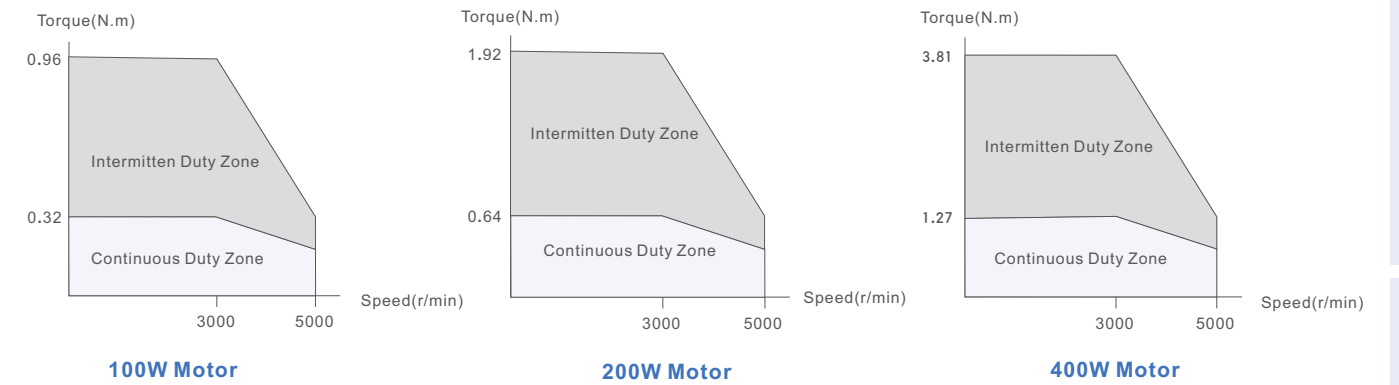
ELM Series	0100FL40H-**	0200FL60H-**	0400FL60H-**	0400FM60H-**	0750FM80H-**	1000FM80H-**	
	0100FL40G-**	0200FL60G-**	0400FL60G-**	0400FM60G-**	0750FM80G-**	1000FM80G-**	
Frame Size [mm]	40	60		80			
Rated Power [w]	100	200	400	400	750	1000	
Voltage [VAC]	220						
Rated Torque [Nm]	0.32	0.64	1.27	1.27	2.4	3.2	
Rated Current [A]	1.1	1.7	2.8	2.8	4.5	5.7	
Rated Speed [r/min]	3000	3000	3000	3000	3000	3000	
Peak Torque [Nm]	0.96	1.92	3.81	3.81	7.2	9.6	
Peak Current [A]	3.3	5.1	8.4	8.4	13.5	17.1	
Max Speed [r/min]	6000	5000	5000	5000	4500	4500	
Torque Const [Nm/A]	0.290	0.376	0.454	0.454	0.533	0.561	
Voltage Const [V/krpm]	20.5	29.2	30.2	30.2	35.7	36.5	
Resistance [Ω]	14.3	6.45	3.82	3.82	1.51	1.13	
Inductance [mH]	14.8	11.5	12.6	12.6	8.2	6.2	
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	0.046	0.22	0.32	0.67	1.53	1.77	
Oil Seal	X	X	X	X	X	X	
Encoder	17 bit Single-turn Incremental Encoder						
Structure	Totally Enclosed, Natural Cooling(IP rating: IP54)						
Mass (kg)	Standard	0.47	1.05	1.43	1.59	2.93	3.32
	With Brake	0.59	1.41	1.79	1.95	3.6	4.01
Length(mm)	Standard	79	86.5	127	134	142.2	139.5
	With Brake	109	118.5	159	166	175	172.5
Permissible Load for the Shaft	L [mm]	22.5	27	27	27	32	32
	Radial [N]	78	245	245	245	392	392
	Thrust [N]	54	74	74	74	147	147

## • Dimensions



Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELM0100FL40H-**	40	Φ4.5	46	Φ8	Φ30	79	25	2.5	5	15.5	6.2	3	3	M3 7B
ELM0100FL40G-**	40	Φ4.5	46	Φ8	Φ30	109	25	2.5	5	15.5	6.2	3	3	M3 7B
ELM0200FL60H-**	60	Φ5.5	70	Φ14	Φ50	86.5	30	3	7	16.5	11	5	5	M5 7B
ELM0200FL60G-**	60	Φ5.5	70	Φ14	Φ50	118.5	30	3	7	16.5	11	5	5	M5 7B
ELM0400FL60H-**	60	Φ5.5	70	Φ14	Φ50	115.5	30	3	7	16.5	11	5	5	M5 7B
ELM0400FL60G-**	60	Φ5.5	70	Φ14	Φ50	147.5	30	3	7	16.5	11	5	5	M5 7B
ELM0400FM60H-**	60	Φ5.5	70	Φ14	Φ50	115.5	30	3	7	16.5	11	5	5	M5 7B
ELM0400FM60G-**	60	Φ5.5	70	Φ14	Φ50	147.5	30	3	7	16.5	11	5	5	M5 7B
ELM0750FM80H-**	80	Φ7	90	Φ19	Φ70	124.5	35	3	8	25	15.5	6	6	M5 7/2
ELM0750FM80G-**	80	Φ7	90	Φ19	Φ70	157.3	35	3	8	25	15.5	6	6	M5 7/2
ELM1000FM80H-**	80	Φ6.5	90	Φ19	Φ70	139.5	35	3	8	25	15.5	6	6	M6 7/0
ELM1000FM80G-**	80	Φ6.5	90	Φ19	Φ70	172.3	35	3	8	25	15.5	6	6	M6 7/0

## • Torque-Speed Curves



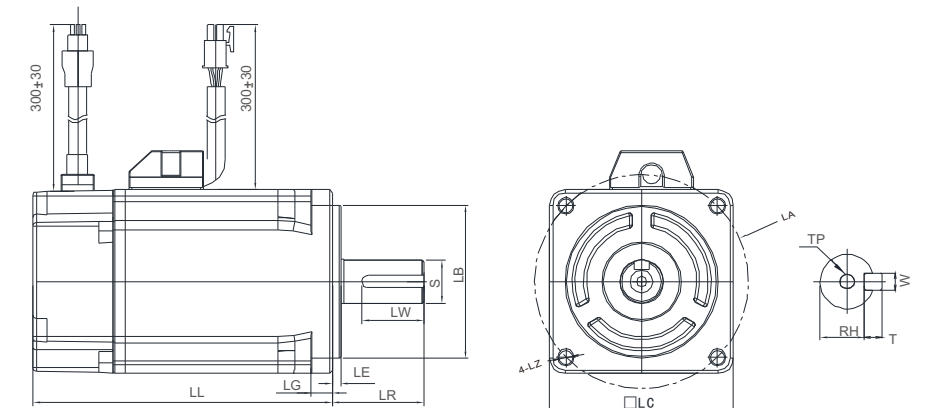
# Servo Motors with 23-Bit Encoders

## • Models

ELM Series	0100LL40F-**	0200LH60F-**	0400LH60F-**	0750LH80F-**	
	0100LL40E-**	0200LH60E-**	0400LH60E-**	0750LH80E-**	
Frame Size [mm]	40	60		80	
Rated Power [w]	100	200	400	750	
Voltage [VAC]	220				
Rated Torque [Nm]	0.32	0.64	1.27	2.4	
Rated Current [A]	1.1	1.9	3.2	5.1	
Rated Speed [r/min]	3000	3000	3000	3000	
Peak Torque [Nm]	0.96	1.92	3.81	7.2	
Peak Current [A]	3.3	5.7	9.6	15.3	
Max Speed [r/min]	6500	6500	6500	6500	
Torque Const [Nm/A]	0.290	0.337	0.397	0.471	
Voltage Const [V/krpm]	14.8	21.8	22.6	28.8	
Resistance [Ω]	12.4	6.3	2.64	1.00	
Inductance [mH]	12.25	12.2	7.9	5.8	
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	0.048	0.29	0.56	1.56	
Oil seal	✓	✓	✓	✓	
Encoder	23bit Multi-turn Absolute Encoder				
Structure	Totally Enclosed, Natural Cooling(IP Rating: IP65)				
Mass (kg)	Standard	0.48	0.8	1.2	2.2
	With Brake	0.75	1.3	1.6	2.93
Length(mm)	Standard	80.7	73.1	89.5	95.7
	With Brake	114.7	103.6	120.2	130.7
Permissible Load for the Shaft	L [mm]	22	27.2	27.2	32
	Radial [N]	68	245	245	392
	Thrust [N]	58	98	98	147

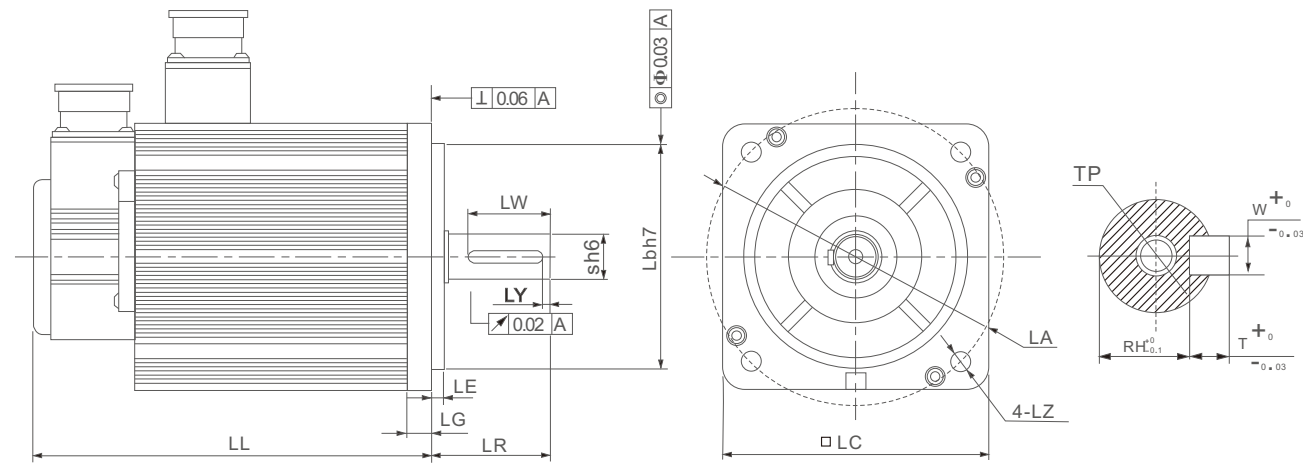
ELM Series	0850LH130F-HD	1000LM130F-H	1300LH130F-HD	1500LM130F-H	1800LH130F-HD	2000LM130F-H	
	0850LH130E-HD	1000LM130E-H	1300LH130E-HD	1500LM130E-H	1800LH130E-HD	2000LM130E-H	
Frame Size [mm]	130						
Rated Power [w]	850	1000	1300	1500	1800	2000	
Voltage [VAC]	220						
Rated Torque [Nm]	5.4	4	8.4	6	11.5	7.7	
Rated Current [A]	6.5	4	9.5	6	9	7.5	
Rated Speed [r/min]	1500	2500	1500	2500	1500	2500	
Peak Torque [Nm]	16.2	12	25.2	18	34.5	22	
Peak Current [A]	19.5	12	28.5	18	27	21	
Max Speed [r/min]	3000	3000	3000	3000	3000	3000	
Torque Const [Nm/A]	0.831	1000	0.884	1000	1.278	1.027	
Voltage Const [V/krpm]	62.23	72	60.1	65	87	68	
Resistance [Ω]	11	2.76	0.5	1.27	0.68	1.01	
Inductance [mH]	4.94	6.42	3.0	3.87	4.26	2.94	
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	13.8	8.5	20.59	12.6	30.15	15.3	
Oil Seal	✓	✓	✓	✓	✓	✓	
Encoder	23bit Multi-turn Absolute Encoder						
Structure	Totally Enclosed, Natural Cooling(IP rating: IP65)						
Mass (kg)	Standard	8	62	10.3	7.4	12.4	8.3
	With Brake	10	7.5	12.3	8.9	14.4	9.9
Length(mm)	Standard	145	166	165	179	192	241
	With Brake	172	223	192	236	219	249
Permissible Load for the Shaft	L [mm]	51	52	51	52	51	52
	Radial [N]	300	460	460	460	530	460
	Thrust [N]	147	202	202	202	270	202

## • Dimensions

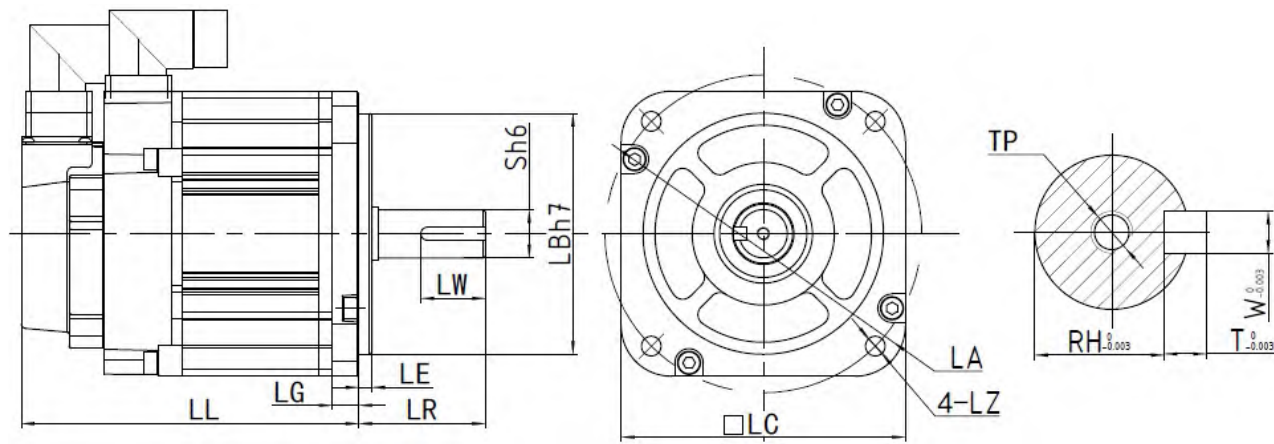


Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELM0100LL40F-**	40	Φ4.5	46	Φ8	Φ30	80.7	25	3	6.5	15.5	6.2	3	3	M3 76
ELM0100LL40E-**	40	Φ4.5	46	Φ8	Φ30	114.7	25	3	6.5	15.5	6.2	3	3	M3 76
ELM0200LH60F-**	60	Φ5.5	70	Φ14	Φ50	73.1	30	2.8	7	22.5	11	5	5	M5 70
ELM0200LH60E-**	60	Φ5.5	70	Φ14	Φ50	103.6	30	2.8	7	22.5	11	5	5	M5 70
ELM0400LH60F-**	60	Φ5.5	70	Φ14	Φ50	89.5	30	2.8	7	22.5	11	5	5	M5 70
ELM0400LH60E-**	60	Φ5.5	70	Φ14	Φ50	120.2	30	2.8	7	22.5	11	5	5	M5 70
ELM0750LH80F-**	80	Φ7	90	Φ19	Φ70	95.7	35	3	8.5	25	15.5	6	6	M5 72
ELM0750LH80E-**	80	Φ7	90	Φ19	Φ70	130.7	35	3	8.5	25	15.5	6	6	M5 72



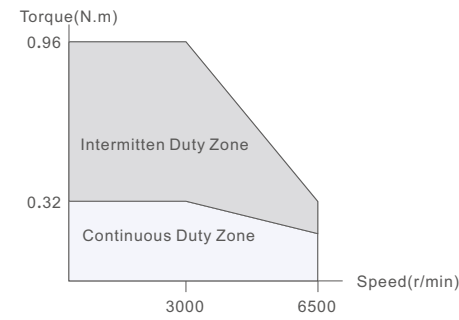


Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	LY (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELM1000LM130F-H	130	Φ9	145	Φ22	Φ110	166	57	5	14	40	2.5	18.5	6	6	M6 <sup>+</sup> T20
ELM1000LM130E-H	130	Φ9	145	Φ22	Φ110	223	57	5	14	40	2.5	18.5	6	6	M6 <sup>+</sup> T20
ELM1500LM130F-H	130	Φ9	145	Φ22	Φ110	179	57	5	14	40	2.5	18.5	6	6	M6 <sup>+</sup> T20
ELM1500LM130E-H	130	Φ9	145	Φ22	Φ110	236	57	5	14	40	2.5	18.5	6	6	M6 <sup>+</sup> T20
ELM2000LM130F-H	130	Φ9	145	Φ22	Φ110	192	57	5	14	40	2.5	18.5	6	6	M6 <sup>+</sup> T20
ELM2000LM130E-H	130	Φ9	145	Φ22	Φ110	249	57	5	14	40	2.5	18.5	6	6	M6 <sup>+</sup> T20

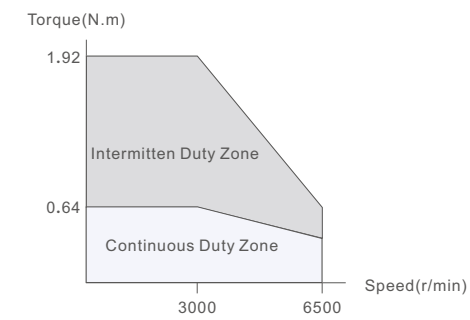


Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELM0850LH130F-HD	130	Φ8.5	145	Φ19	Φ110	145	57	6	12	30	16	5	5	M5 <sup>+</sup> T12
ELM0850LH130E-HD	130	Φ8.5	145	Φ19	Φ110	172	57	6	12	30	16	5	5	M5 <sup>+</sup> T12
ELM1300LH130F-HD	130	Φ8.5	145	Φ22	Φ110	165	57	6	12	30	18.5	6	6	M5 <sup>+</sup> T12
ELM1300LH130E-HD	130	Φ8.5	145	Φ22	Φ110	192	57	6	12	30	18.5	6	6	M5 <sup>+</sup> T12
ELM1800LH130F-HD	130	Φ8.5	145	Φ24	Φ110	192	57	6	12	30	20.5	8	7	M5 <sup>+</sup> T12
ELM1800LH130E-HD	130	Φ8.5	145	Φ24	Φ110	219	57	6	12	30	20.5	8	7	M5 <sup>+</sup> T12

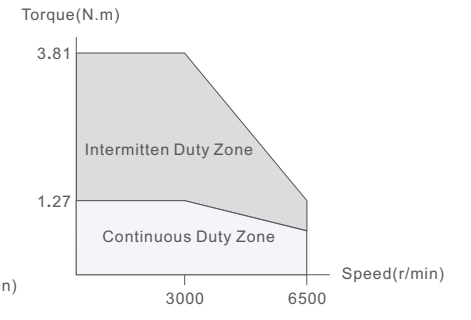
• Torque-Speed Curves



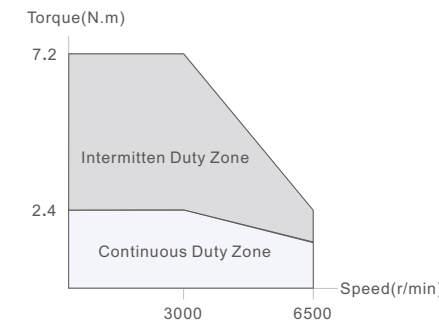
100W Motor



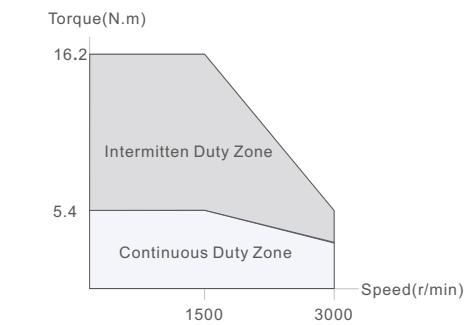
200W Motor



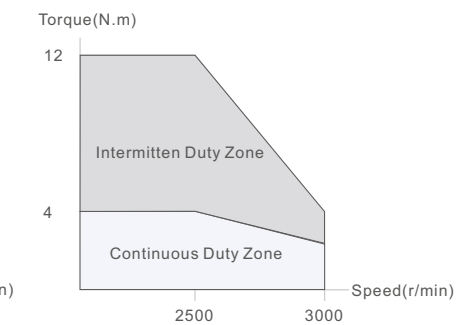
400W Motor



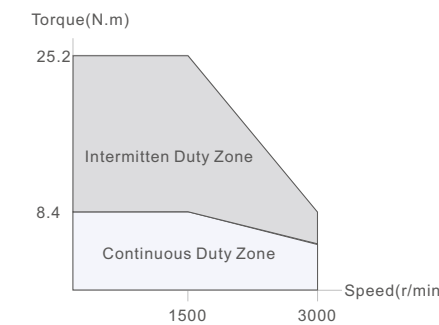
750W Motor



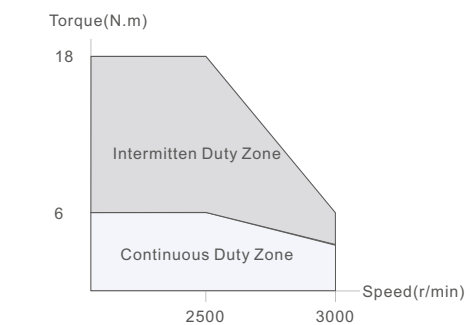
850W Motor



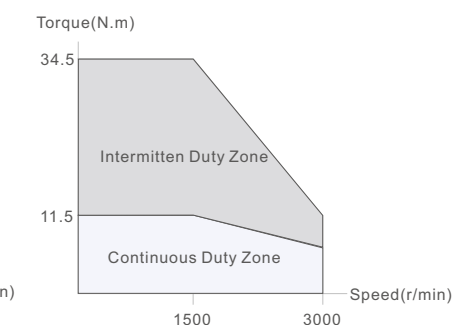
1000W Motor



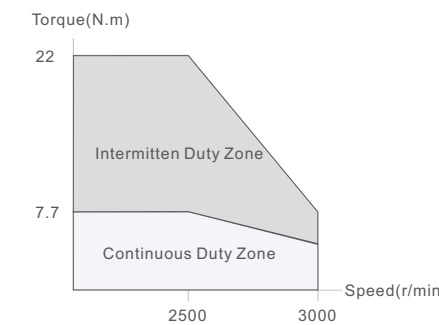
1300W Motor



1500W Motor



1800W Motor



2000W Motor

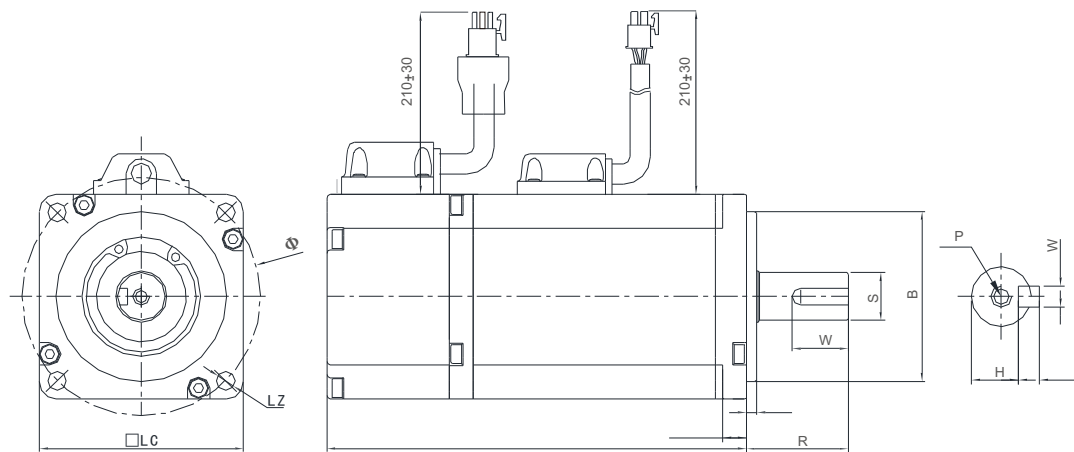
# Servo Motors with 2500-Line Encoders

## • Models

ELM Series	0100BL40H-**	0200BL60H-**	0400BL60H-**	0400BM60H-**	0750BM80H-**		
	0100BL40G-**	0200BL60G-**	0400BL60G-**	0400BM60G-**	0750BM80G-**	1000BM80G-**	
Frame Size [mm]	40	60			80		
Rated Power [w]	100	200	400	400	750	1000	
Voltage [VAC]	220						
Rated Torque [Nm]	0.32	0.64	1.27	1.27	2.4	3.2	
Rated Current [A]	1.27	1.5	3.0	3.0	4.5	5.6	
Rated Speed [r/min]	3000	3000	3000	3000	3000	3000	
Peak Torque [Nm]	0.96	2.2	3.80	3.80	7.2	9.6	
Peak Current [A]	3.81	5.6	9.0	9.0	13.5	16.8	
Max Speed [r/min]	4500	5000	5000	6000	4500	4500	
Torque Const [Nm/A]	0.290	0.42	0.524	0.524	0.533	0.57	
Voltage Const [V/krpm]	18.3	28.1	31.7	31.7	37	38.7	
Resistance [Ω]	11.5	6.45	2.7	2.7	1.51	1.0	
Inductance [mH]	10.9	11.5	6	6	7.5	3.3	
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	0.046	0.21	0.42	0.67	1.5	2.3	
Oil Seal	X	X	X	X	X	X	
Encoder	2500 Lines Incremental Encoder						
Structure	Totally Enclosed, Natural Cooling(IP rating: IP54)						
Mass (kg)	Standard	0.4	1.2	1.6	1.8	3	
	With Brake	0.6	1.7	2.2	2.4	3.8	7.5
Length(mm)	Standard	102.5	96	125.6	134.6	142	
	With Brake	135.6	137	163.6	172.6	178	202
Permissible Load for the Shaft	L [mm]	22.5	27	27	27	37	32
	Radial [N]	100	200	200	200	200	200
	Thrust [N]	25	50	50	50	50	50

Notes: Motor with 1000 Lines can be customized, please contact [tech@leadshine.com](mailto:tech@leadshine.com) for more details.

## • Dimensions



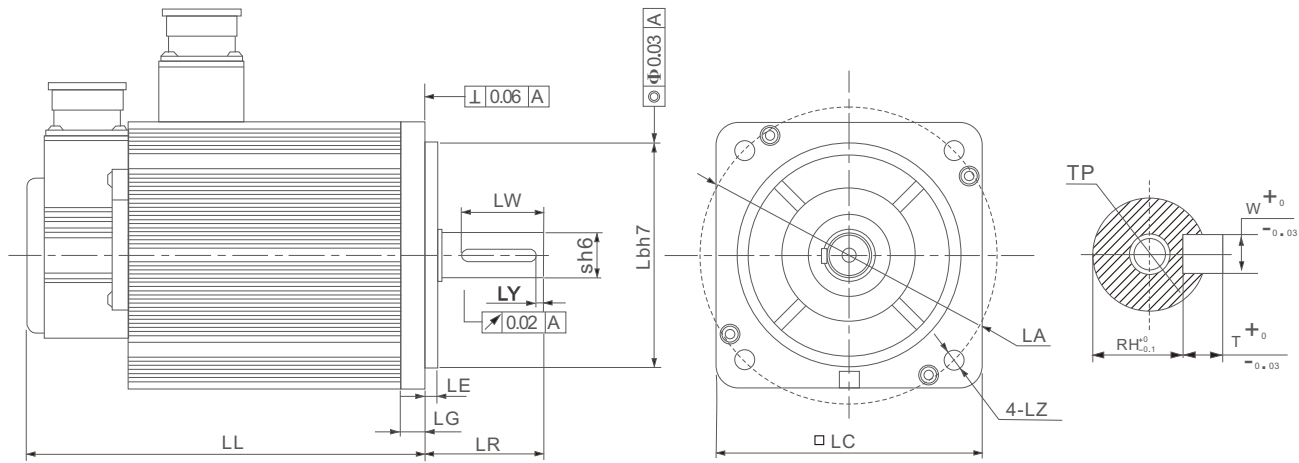
Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELM0100BL40H-HS	40	Φ4.5	46	Φ8	Φ30	102.5	25	2.5	5	15.5	6.2	3	3	M3 𠄎
ELM0100BL40G-HS	40	Φ4.5	46	Φ8	Φ30	135.6	25	2.5	5	15.5	6.2	3	3	M3 𠄎
ELM0200BL60H-HS	60	Φ5.5	70	Φ14	Φ50	96	30	3	6.5	16.5	11	5	5	M5 𠄎
ELM0200BL60G-HS	60	Φ5.5	70	Φ14	Φ50	137	30	3	6.5	16.5	11	5	5	M5 𠄎
ELM0400BL60H-HS	60	Φ5.5	70	Φ14	Φ50	125.6	30	3	6.5	16.5	11	5	5	M5 𠄎
ELM0400BL60G-HS	60	Φ5.5	70	Φ14	Φ50	163.6	30	3	6.5	16.5	11	5	5	M5 𠄎
ELM0400BM60H-HS	60	Φ5.5	70	Φ14	Φ50	134.6	30	3	6.5	16.5	11	5	5	M5 𠄎
ELM0400BM60G-HS	60	Φ5.5	70	Φ14	Φ50	172.6	30	3	6.5	16.5	11	5	5	M5 𠄎
ELM0750BM80H-HS	80	Φ7	90	Φ19	Φ70	142	40	3	8	25	15.5	6	6	M6 𠄎
ELM0750BM80G-HS	80	Φ7	90	Φ19	Φ70	178	40	3	8	25	15.5	6	6	M6 𠄎
ELM1000BM80G-HS	80	Φ6.6	90	Φ19	Φ70	202	35	3	8	25	15.5	6	6	M6 𠄎

## • Models

ELM Series	1000BM130F-**	1200BM110F-**	1500BM110F-**	1500BM130F-**	1800BM110F-**	2000BM130F-**	2500BM130F-**	3000BM130F-**	
	1000BM130E-**		1500BM110E-**	1500BM130E-**		2000BM130E-**	2500BM130E-**	3000BM130E-**	
Frame Size [mm]	130	110	110	130	110	130	130	130	
Rated Power [w]	1000	1200	1500	1500	1800	2000	2500	3000	
Voltage [VAC]	220								
Rated Torque [Nm]	4	4	5	6	6	7.7	10	15	
Rated Current [A]	4	5	6	6	6	7.5	10	13.5	
Rated Speed [r/min]	2500	3000	3000	2500	3000	2500	2500	2500	
Peak Torque [Nm]	12	12	15	18	18	22	25	30	
Peak Current [A]	12	15	18	18	18	22.5	25	27	
Max Speed [r/min]	3000	4500	4500	3000	4500	3000	3000	3000	
Torque Const [Nm/A]	1.0	0.8	0.83	1.0	1.0	1.01	1.01	1.11	
Voltage Const [V/krpm]	72	54	62	65	60	68	68	67	
Resistance [Ω]	2.76	1.09	1.02	1.27	0.81	1.04	0.73	0.49	
Inductance [mH]	6.42	3.3	3.43	3.87	2.59	2.94	2.45	1.68	
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	8.5	5.4	6.3	12.6	7.6	15.3	19.4	27.7	
Oil Seal	√	√	√	√	√	√	√	√	
Encoder	2500 Lines Incremental Encoder								
Structure	Totally Enclosed, Natural Cooling(IP rating: IP65)								
Mass (kg)	Standard	6.2	6	6.8	7.4	12.4	8.3	9.8	11
	With Brake	7.5		8.3	8.9	14.4	9.9	11.5	13
Length (mm)	Standard	166	189	204	179	219	179	209	231
	With Brake	223		278	236		249	290	312
Permissible Load for the Shaft	L [mm]	52	55	55	52	50	52	52	55
	Radial [N]	900	600	600	900	600	900	900	900
	Thrust [N]	300	180	180	300	180	300	300	300

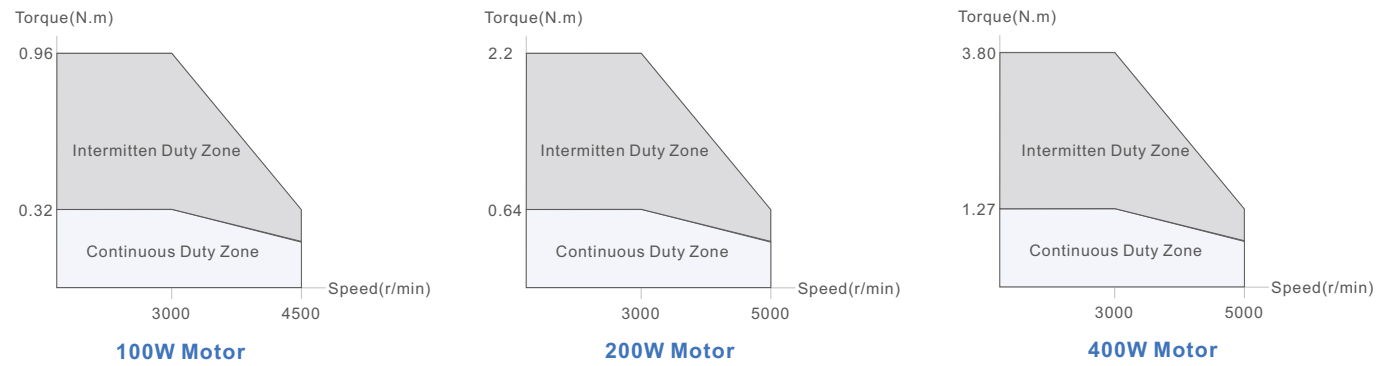
Notes: Motor with 1000 Lines can be customized, please contact [tech@leadshine.com](mailto:tech@leadshine.com) for more details.

• Dimensions



Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	LY (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELM1000BM130F-H	130	Φ9	145	Φ22	Φ110	166	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM1000BM130E-H	130	Φ9	145	Φ22	Φ110	223	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM1200BM110F-H	110	Φ9	130	Φ19	Φ95	189	55	5	12	40	2.5	15.5	6	6	M6 <sup>T</sup> 22
ELM1500BM110F-H	110	Φ9	130	Φ19	Φ95	204	55	5	12	40	2.5	15.5	6	6	M6 <sup>T</sup> 22
ELM1500BM110E-H	110	Φ9	130	Φ19	Φ95	278	55	5	12	40	2.5	15.5	6	6	M6 <sup>T</sup> 22
ELM1500BM130F-H	130	Φ9	145	Φ22	Φ110	179	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM1500BM130E-H	130	Φ9	145	Φ22	Φ110	236	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM1800BM110F-H	110	Φ9	130	Φ19	Φ95	219	55	5	12	40	2.5	15.5	6	6	M6 <sup>T</sup> 22
ELM2000BM130F-H	130	Φ9	145	Φ22	Φ110	179	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM2000BM130E-H	130	Φ9	145	Φ22	Φ110	249	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM2500BM130F-H	130	Φ9	145	Φ22	Φ110	209	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM2500BM130E-H	130	Φ9	145	Φ22	Φ110	290	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM3000BM130F-H	130	Φ9	145	Φ22	Φ110	230	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22
ELM3000BM130E-H	130	Φ9	145	Φ22	Φ110	312	57	5	14	40	2.5	18.5	6	6	M6 <sup>T</sup> 22

• Torque-Speed Curves





# Accessories

Each servo drive comes with:  
 (1) Power Connector  
 (2) 44-Pin Signal Connector  
 (3) Press Rod



## • Extension Cables

### Power Cable

- Length options: 1.5M, 3M, 5M, 7M, 10M, 13M
- Connector options: Plastic plug Optional: Injection plug



### Encoder Cable

- Length options: 1.5M, 3M, 5M, 7M, 10M, 13M
- Connector options: Plastic plug Optional: Injection plug



### Brake Cable

- Length options: 1.5M, 3M, 5M, 7M, 10M, 13M
- Connector options: Plastic plug Optional: Injection plug



## ■ Cable Details

Cables for motors of 80mm frame size and below

(1) CABLE-RZ\*M\*-S1(V3.0) Power Cable



Accessories Details				
Part No.	Model No.	Mount	Components	Notes
11600371	4pin 172159-1 LS-17215901-AMP RoHS	1	4 Plastic Shell	
11600353	170362-1 RoHS AMP	4	4 Pin Needle	

### Tuning Cable

- Connect the drive to computer
- The interface standard is USB
- Mode: CABLE-USB1M5

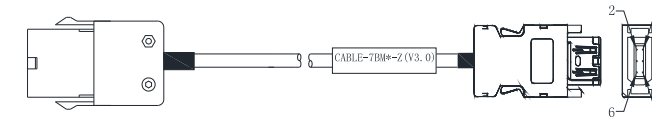


### RS485/EtherCAT Communication Cable

- Model: CABLE-TX0M2-BUS
- Length options: 1.5M, 3M, 5M, 7M, 10M, 13M

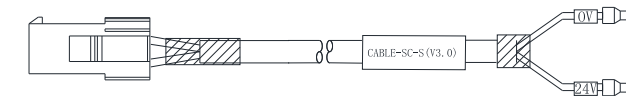


(2) CABLE-7BM\*M\*-Z(V3.0) Encoder Cable



Accessories Details				
Part No.	Model No.	Mount	Components	Notes
11600372	9pin 172161-1 LS-17216101-AMP RoHS	1	9 Pin Plastic Shell	
11600354	170361-1 RoHS AMP	5	9 Pin Needle	
11600383	SC-06 SC-06 RoHS	1	Encoder-Drive(Connector)	

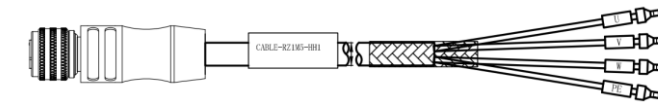
(3) CABLE-SC\*M\*-S1(V3.0) Brake Cable



Accessories Details				
Part No.	Model No.	Mount	Components	Notes
11600369	2pin 172157-1 LS-17215701-AMP RoHS	1	2 Pin Plastic Shell	Only optional for motor with brake
11600353	170362-1 RoHS AMP	2	2 Pin Needle	Only optional for motor with brake

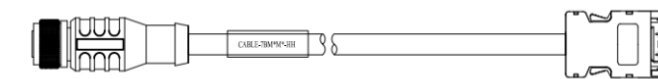
Injection plug cables for motor of 80mm frame size and below

(1) CABLE-RZ\*M\*-HH1 Power Cable



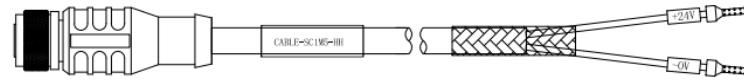
Accessories Details				
Part No.	Model No.	Mount	Components	Notes
	PK-EK5-0.3M	1	Injection Plug	

(2) CABLE-7BM\*M\*-HH Encoder Cable



Accessories Details				
Part No.	Model No.	Mount	Components	Notes
	EK5-*M/T797	1	Injection Plug	
11600383	SC-06 RoHS	1	Encoder-Drive(Connector)	

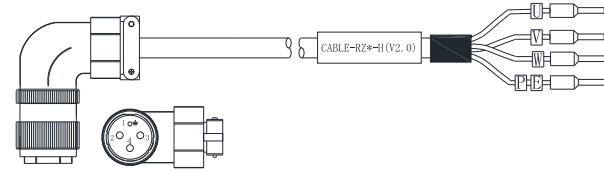
(3) CABLE-SC\*M\*-HH Brake Cable



Part No.	Model No.	Mount	Components	Notes
	EZ4.2-*M/T797-01	1	Injection Plug	

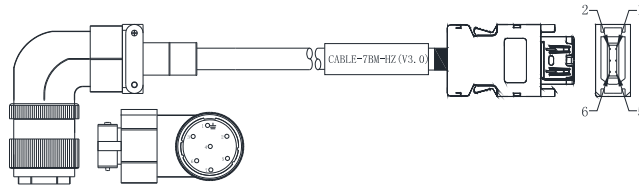
Accessories of Motor with 130mm Size

(1) CABLE-RZ\*M\*-H(V2.0) Power Cable



Part No.	Model No.	Mount	Components	Notes
11600072	4P OD: 9.5mm RoHS MG	1	Aviation Plug	

(2) CABLE-7BM\*M\*-HZ(V3.0) Encoder Cable



Part No.	Model No.	Mount	Components	Notes
11600383	SC-06 SC-06 RoHS	1	Encoder - Drive(connector)	
11600076	OD: 6.5mm RoHS MG	1	Aviation Plug	

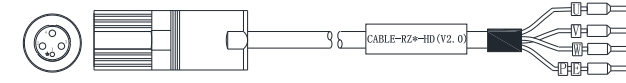
(3) CABLE-SC\*M\*-H(V3.0) Brake Cable



Part No.	Model No.	Mount	Components	Notes
11600070	3 PIN RoHS	1	Aviation Plug	Only optional for motor with brake

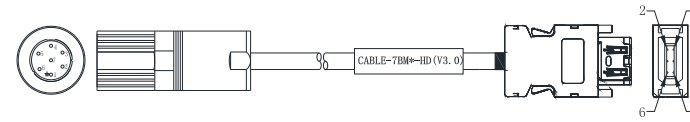
Accessories of Motor with 130mm Size for Engraving Machine

(1) CABLE-RZ\*M\*-HD(V2.0) Power Cable



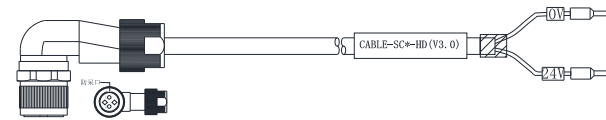
Part No.	Model No.	Mount	Components	Notes
11600077	4pin RoHS HD	1	Aviation Plug	

(2) CABLE-7BM\*M\*-HD(V3.0) Encoder Cable



Part No.	Model No.	Mount	Components	Notes
11600079	7pin RoHS HD	1	Aviation Plug	
11600383	SC-06 SC-06 RoHS	1	Encoder - Drive(connector)	

(3) CABLE-SC\*M\*-HD(V3.0) Brake Cable



Part No.	Model No.	Mount	Components	Notes
11600078	2pin RoHS HD	1	Aviation Plug	Only optional for motor with brake

## Ordering Information

### • Servo Motors with 17-Bit Encoders

Frame (mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable			
40	ELM0100FL40H-SS	79	Φ8	ELP-D400Z ELP-RS400Z ELP-EC400Z	CABLE-RZ*M*-S1	CABLE-7BM*M*-Z				
	ELM0100FL40G-SS	109					CABLE-SC*M*-S			
60	ELM0200FL60H-SS	86.5	Φ14							
	ELM0200FL60G-SS	118.5					CABLE-SC*M*-S			
	ELM0400FL60H-SS	115.5								
	ELM0400FL60G-SS	147.5					CABLE-SC*M*-S			
	ELM0400FM60H-SS	115.5								
	ELM0400FM60G-SS	147.5					CABLE-SC*M*-S			
80	ELM0750FM80H-SS	124.5	Φ19				ELP-D750Z ELP-RS750Z ELP-EC750Z	CABLE-RZ*M*-S		
	ELM0750FM80G-SS	157.3					CABLE-SC*M*-S			
	ELM1000FM80H-SS	139.5					ELP-D1000Z ELP-RS1000Z ELP-EC1000Z			
	ELM1000FM80G-SS	172.3					CABLE-SC*M*-S			

Frame (mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable			
40	ELM0100FL40H-HH	79	Φ8	ELP-D400Z ELP-RS400Z ELP-EC400Z	CABLE-RZ*M*-HH1	CABLE-7BM*M*-HH				
	ELM0100FL40G-HH	109					CABLE-SC*M*-HH			
60	ELM0200FL60H-HH	86.5	Φ14							
	ELM0200FL60G-HH	118.5					CABLE-SC*M*-HH			
	ELM0400FL60H-HH	115.5								
	ELM0400FL60G-HH	147.5					CABLE-SC*M*-HH			
	ELM0400FM60H-HH	115.5								
	ELM0400FM60G-HH	147.5					CABLE-SC*M*-HH			
80	ELM0750FM80H-HH	124.5	Φ19				ELP-D750Z ELP-RS750Z ELP-EC750Z	CABLE-RZ*M*-HH		
	ELM0750FM80G-HH	157.3					CABLE-SC*M*-HH			
	ELM1000FM80H-HH	139.5					ELP-D1000Z ELP-RS1000Z ELP-EC1000Z			
	ELM1000FM80G-HH	172.3					CABLE-SC*M*-HH			

### • Servo Motors with 23-Bit Encoders

Frame (mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable			
40	ELM0100LL40F-SS	80.7	Φ8	ELP-D400Z ELP-RS400Z ELP-EC400Z	CABLE-RZ*M*-S1	CABLE-7BM*M*-Z ..... CABLE-7BMA*M*-Z (23bit Multi-turn absolute encoder)				
	ELM0100LL40E-SS	114.7					CABLE-SC*M*-S			
60	ELM0200LH60F-SS	73.1	Φ14							
	ELM0200LH60E-SS	103.6					CABLE-SC*M*-S			
	ELM0400LH60F-SS	89.5								
	ELM0400LH60E-SS	120.2					CABLE-SC*M*-S			
80	ELM0750LH80F-SS	95.7	Φ19				ELP-D750Z ELP-RS750Z ELP-EC750Z	CABLE-RZ*M*-S		
	ELM0750LH80E-SS	130.7					CABLE-SC*M*-S			

Frame (mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable			
40	ELM0100LL40F-HH	80.7	Φ8	ELP-D400Z ELP-RS400Z ELP-EC400Z	CABLE-RZ*M*-HH1	CABLE-7BM*M*-HH				
	ELM0100LL40E-HH	114.7					CABLE-SC*M*-HH			
60	ELM0200LH60F-HH	73.1	Φ14							
	ELM0200LH60E-HH	103.6					CABLE-SC*M*-HH			
	ELM0400LH60F-HH	89.5								
	ELM0400LH60E-HH	120.2					CABLE-SC*M*-HH			
80	ELM0750LH80F-HH	95.7	Φ19				ELP-D750Z ELP-RS750Z ELP-EC750Z	CABLE-RZ*M*-HH		
	ELM0750LH80E-HH	130.7					CABLE-SC*M*-HH			

Frame (mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable
130	ELM1000LM130F-H	166	Φ22	ELP-D1000Z ELP-RS1000Z ELP-EC1000Z	CABLE-RZ*M*-H (V1.1)	CABLE-7BM*M*-HZ	
	ELM1000LM130E-H	223		CABLE-SC*M*-H			
	ELM1500LM130F-H	179		ELP-D1500Z ELP-RS1500Z ELP-EC1500Z			
	ELM1500LM130E-H	236		.....			
	ELM2000LM130F-H	192		CABLE-RZ*M*-H (V2.0) (flexible)			
	ELM2000LM130E-H	249		CABLE-SC*M*-H			

Frame (mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable
130	ELM0850LH130F-HD	145	Φ19	ELP-D1000Z ELP-RS1000Z ELP-EC1000Z	CABLE-RZ*M*-HD (V2.0)	CABLE-7BM*M*-HD (V3.0)	
	ELM0850LH130E-HD	172	Φ19	CABLE-SC*M*-HD			
	ELM1300LH130F-HD	165	Φ22	ELP-D1500Z ELP-RS1500Z ELP-EC1500Z			
	ELM1300LH130E-HD	192	Φ22	.....			
	ELM1800LH130F-HD	192	Φ24	ELP-D2000Z ELP-RS2000Z ELP-EC2000Z			
	ELM1800LH130E-HD	219	Φ24	CABLE-SC*M*-HD			



# ELD Series Brushless Servo Drives

- ELD2 Series Brushless Servo Drives
- ELD5 Series Brushless Servo Drives



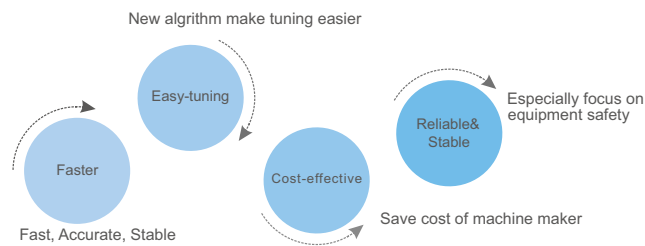
## ELD2 Series Brushless Servo Drives

ELD2 series brushless servo drives, power range from 25W to 1200W, are special DC input, motion control product designed for machines and applications that request a best balance between reasonable cost and outstanding performance with MFC/vibration suppression.

- Voltage : 24-70Vdc
- Power range : 0.25 - 1.2kw
- Up to 90Amp peak current
- Compact size
- Pulse+Direction, analog input
- Modbus, CANopen

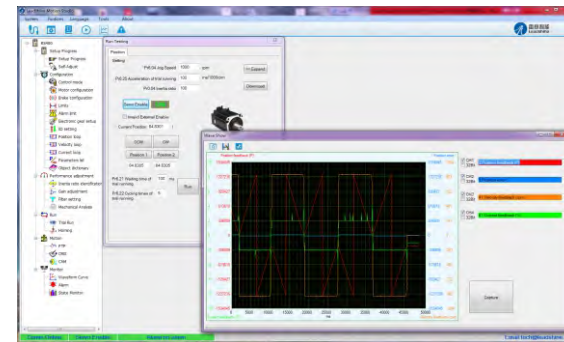


### Easy Tuning

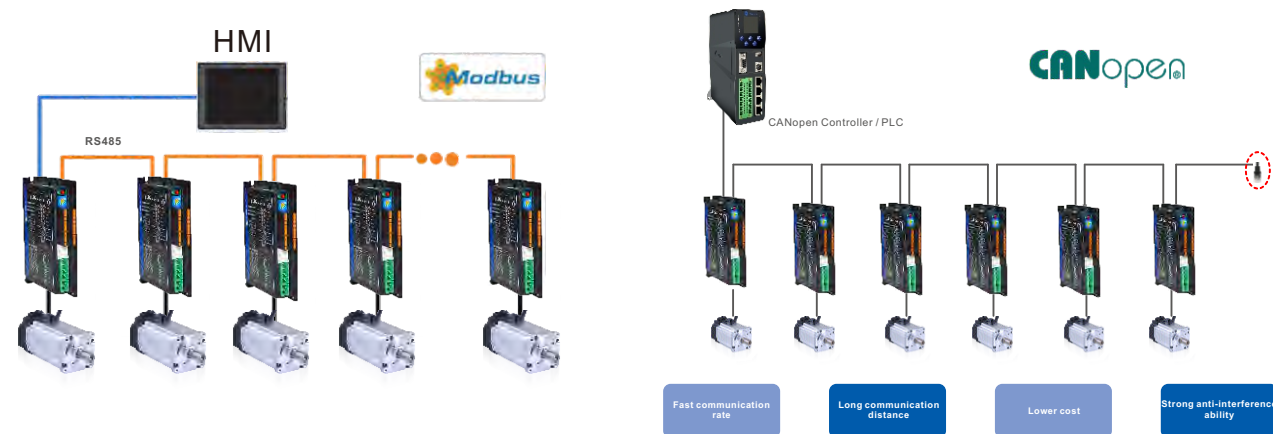


### Motion Studio

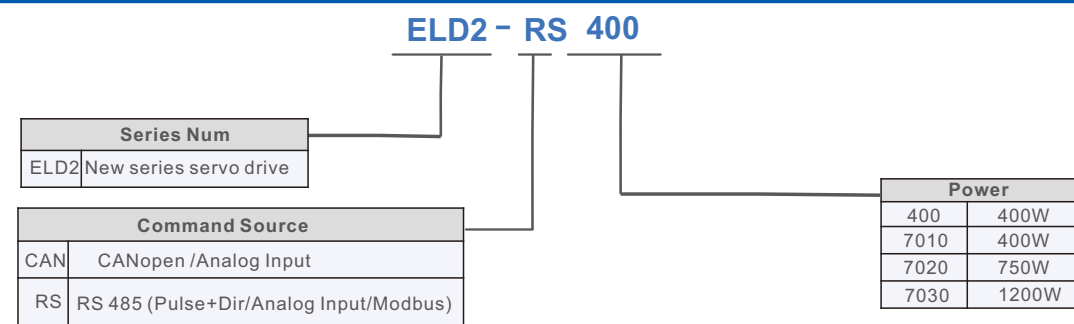
- Convenient GUI user interface
- Easy Tuning
- Real-time motion state monitoring
- Error history and resolution guide



### Supported Network



### Part Numbers

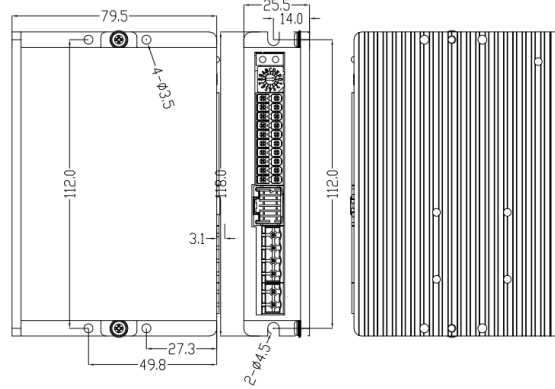


### Specifications

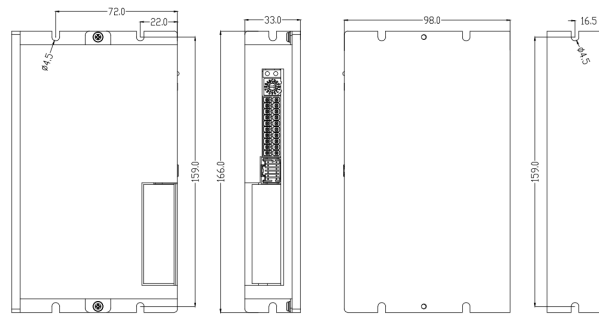
Power & Environment					
Driver Model	ELD2-RS7010B	ELD2-CAN7010B	ELD2-RS7015B ELD2-CAN7015B	ELD2-RS7020B ELD2-CAN7020B	ELD2-RS7030B ELD2-CAN7030B
Size(mm)	118*75.5*25.5	140*79.5*25.5	175*100.5*31	175*100.5*31	175*100.5*31
Rated Power (kw)	0.4	0.4	0.6	0.75	1.2
Rated Output Current (A)	10	10	15	20	30
Max Output Current (A)	30	45	45	80	90
Main Power	Voltage (V) Current (A)	DC24-70 48-60 Vdc: 7Arms 60-70Vdc: 6Arms	DC24-70 48-60 Vdc: 7Arms 60-70Vdc: 6Arms	DC24-70 48-60 Vdc: 10Arms 60-70Vdc: 9Arms	DC24-70 48-60Vdc: 14Arms 60-70Vdc: 12Arms
Control Method	IGBT PWM Sinusoidal Wave Drive				
Overload	300%				
Brake Resistor	External Connection				
Communication Interface	RS485/CAN				
Protection Rank	IP20				
CANopen Specifications					
Link Layer Protocol	CAN Field-bus				
Application Layer Protocol	CANopen protocol				
CAN-ID Type	CAN 2.0A				
Communication Rate	1Mbit/s, 500Kbit/s, 250Kbit/s, 125Kbit/s, 100Kbit/s, 50Kbit/s, 20Kbit/s				
Sub-protocol	DS 301 V4.02: CANopen application layer protocol and communication protocol DSP 402 V2.0: Device profile for drives and motion control				
CANopen Length	0 - 8bit				
Support Service	NMT: Network Management Service SDO: Service Data Object PDO: Process Data Object Devices Monitor: Node protection and heartbeat message SYNC: Synchronous generator and synchronous detection, applied to the PDO transmission EMCY: Emergency object Services				
PDO Transmission Modes	Time trigger, event trigger, asynchronization/synchronization trigger(configurable)				
PDO Number	4 TPDOs, 4 RPDOs				
Control Modes	PP (Profile Position) PV (Profile Velocity) PT (Profile Torque) HM (Homing)				
Communication & Connection					
	ELD2-RS	ELD2-CAN			
Pulse Input	2 fast pulse input, 5V-24v only	-			
Pulse Encoder Output	5V differential outputs, A/B phase	5V differential outputs, A/B phase			
Digital Input/Output	4 programmable OC inputs, 1 programmable differential output 2 programmable OC outputs, 24V	4 programmable OC inputs, 2 programmable OC outputs, 24V			
Analog Input	1 analog input: -10V to +10V	-			
Feedback Supported	1000line, 2500line, 17-Bit incremental encoder				
Matched Motors					
Motor Model	BLM Series / ACM Series / ELDM Series / Third-party Brushless + Brushed motor				
Power Range	25W - 1200W				
Voltage Range	24 - 70Vdc				
Encoder Type	1000-line, 2500-line, 17-Bit				
Motor Size	40mm, 42mm, 57mm, 60mm, 80mm Frame Size				
Other Requirements	Brake. oil-seal. protection level. shaft & connector can be customized				

## Mechanical Specifications

### • ELD2-\*\*7010



### • ELD2-\*\*7015/ELD2-\*\*7020/ELD2-\*\*7030



## Typical Applications



Printing Machines



Logistic



ELD2+ELDM Brushless + Brushed System



AGV Machines



Medical

## ELD5 Series Brushless Servo Drives

ELD5 series brushless servo drives are special motion control product designed for machines and applications that request a best balance between outstanding performance and reasonable cost.

Combined with abundant features like MFC, vibration suppression, multi-mode filter function etc. It provide machines a compact size, low tuning works, but high resolution encoder up to 23 bits, an unique servo system.

- Easy tuning
- Automatic motor identification
- Model following control
- Notch filter, damping filter
- RS485/Modbus
- Up to 30 types motor supported



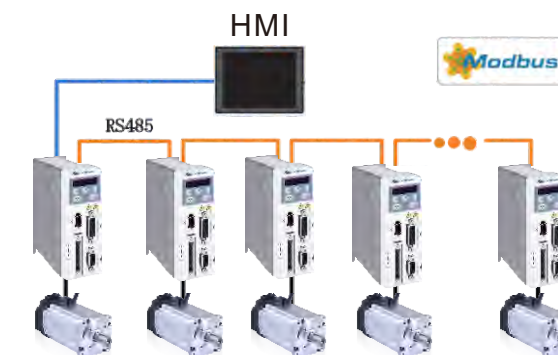
### Control Types

- Pulse+Direction(for position control)
  - Analog input(for velocity/torque control )
  - Modbus based on Rs485
  - CANopen
  - Built-in indexer
- Programmable 16-segment position table, support positioning/homing/ limit/ quick stop/ JOG...

### Inputs/Outputs

- 2 fast pulse input, 5V only
- 7 programmable OC inputs, 24V
- 2 programmable differential outputs
- 3 programmable OC outputs, 24V
- 1 analog output: -10V to +10V(Optional)

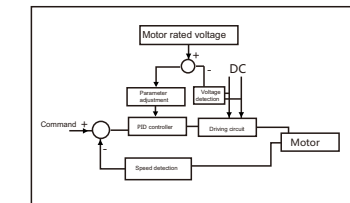
### Communication Network



## Enhanced Features

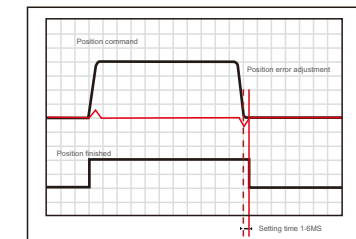
### Self-adaption for voltage input

The performance of current loop can be self-adapted with different voltage input and maintain the best performance



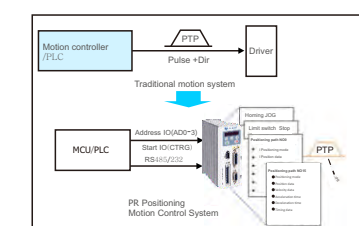
### Fast response

Frequency of velocity response can up to 1.2KHz  
Advanced feed-forward algorithm fasten the response  
frequency cut down setting time



### More intelligent saving controller

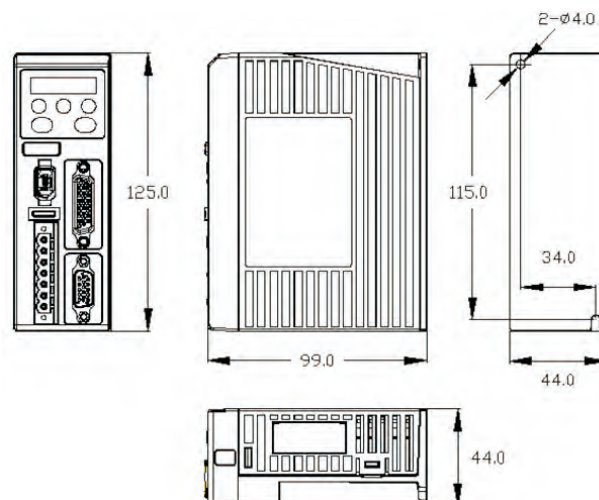
Position programmable mode with IO trigger/ RS485 trigger  
Position/velocity/torque mode, and can be switched in different mode  
16 programmable paths for choosing with IO trigger, 35 kinds of homing mode (for single-axis robot, electric-cylinder)



## Specifications

Power & Environment		
Driver model	ELD5-400 / ELD5-400Z / ELD5-750 / ELD5-750Z	
Size(mm)	125*99*44	
Rated power (kw)	0.4/0.75	
Rated output current (A)	10Arms	
	48-60Vdc: 7Arms/60-70Vdc: 6Arms      20Arms 48-60Vdc: 14Arms/60-70Vdc: 12Arms	
Max output current (A)	30/50	
Main power	Voltage (V)	DC24-70
	Current (A)	10/20
Control power	Voltage (V)	DC12-24
	Current (A)	≥12mA
Control method	IGBT PWM Sinusoidal Wave Drive	
Overload	300%	
Brake resistor	External connection	
Communication interface	RS-232, RS485, Modbus	
Protection rank	IP20	
Communication & Connection		
USB	Mini USB	
Pulse input	2 fast pulse inputs, 5V-24v all compatible	
Pulse encoder output	5V differential outputs, A/B/Z phase (optional frequency divider)	
Digital input/output	4 programmable OC outputs, 5 programmable common-anode	
Analog input	1 analog output: -10V to +10V	
Feedback Supported	1000, 2500line incremental encoder(ELD5-400 / ELD5-750)	
	serial encoder(ELD5-400Z / ELD5-750Z)	
Matched Motors		
Power Range	50W - 750W	
Voltage Range	24V - 70V	
Encoder Type	1000-line, 2500-line, 17bit	
Motor Size	40mm, 42mm, 57mm, 60mm, 80mm Frame	
Other Requirements	Brake. oil-seal. protection level. shaft & connector can be customized	

## Mechanical Specifications



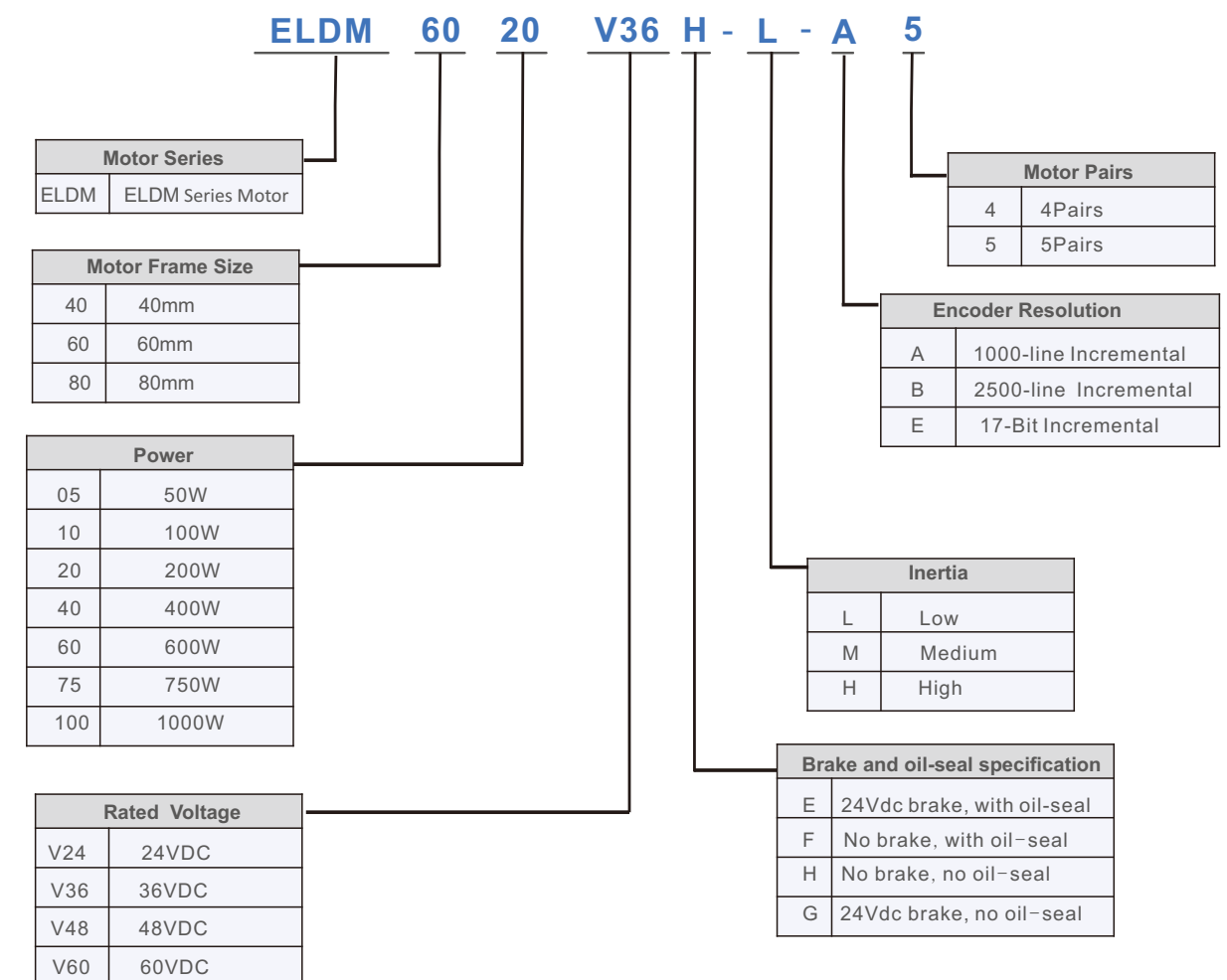
# ELDM Series Brushless Servo Motors



- Power range: 50w - 1000w
- Frame size: 40mm,60mm,80mm;
- Voltage range: 24 - 60Vdc
- Feedback: 1000line/2500line/17-Bit incremental encoder

ELDM series brushless servo motors offer high performance with modes ranging from 50w to 750w. Mounting is compatible with most AC servo motors on the market. Standard models come with a 1000line/2500line/17-Bit incremental encoder, When driven by ELD2/ELD5/ELD5Z series servo drives, ELDM series motors meet normal and high accuracy application requirement.

## Part Numbers





# Servo Motors with 1000/2500 Line/17-Bit Encoders

## • Models

ELDM Series	4010V24HL-**	6020V24HL-**	6020V36HL-**	6040V48HL-**	6040V60HL-**	6060V48HL-**	6060V60HL-**
	4010V24GL-**	6020V24GL-**	6020V36GL-**	6040V48GL-**	6040V60GL-**	6060V48GL-**	6060V60GL-**
Frame Size [mm]	40	60					
Rated Power [w]	100	200	200	400	400	600	600
Voltage [VAC]	24	24	26	48	60	48	60
Rated Torque [Nm]	0.32	0.64	0.64	1.27	1.27	1.9	1.9
Rated Current [A]	5.8	11	7	10	9	15.1	10.6
Rated Speed [r/min]	3000	3000	3000	3000	3000	3000	3000
Peak Torque [Nm]	0.96	0.96	1.92	3.81	3.81	5.7	5.7
Peak Current [A]	17.4	33	21	31	27	45.3	33.5
Max Speed [r/min]	4000	4000	4000	4000	4000	4000	4000
Torque Const [Nm/A]	0.055	0.058	0.091	0.127	0.141	0.126	0.18
Voltage Const [V/krpm]	3.6	3.9	6.19	7.68	9.73	8.3	11.8
Resistance [Ω]	0.5	0.2	0.39	0.27	0.34	0.16	0.29
Inductance [mH]	0.5	0.23	0.55	0.35	0.6	0.26	0.52
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	0.11	0.21	0.21	0.42	0.42	0.67	0.67
Oil Seal	X	X	X	X	X	X	X
Encoder	1000/2500 Lines/17-Bit Incremental Encoder						
Structure	Totally Enclosed, Natural Cooling(IP rating: IP54)						
Mass (kg)	Standard	0.47	1.05	1.05	1.43	1.43	1.83
	With Brake	0.59	1.41	1.41	1.79	1.79	2.79
Length (mm)	Standard	85	92	92	116	116	136
	With Brake	115	131	121.8	155	155	175
Permissible Load for the Shaft	L [mm]	22.5	27	27	27	27	27
	Radial [N]	78	245	245	245	245	245
	Thrust [N]	54	74	74	74	74	74

## The pin assignment of 1000 line encoder

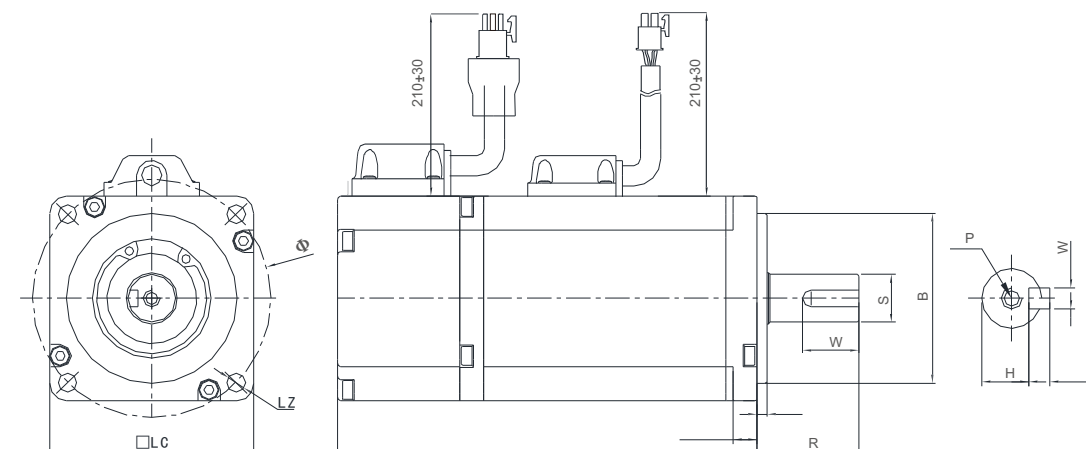
Pin	Name	Pin	Name
6	PE	2	EB+
13	+5V	12	EB-
3	GND	5	HU
1	EA+	4	HV
11	EA-	9	HW

## The pin assignment of 2500 line encoder

Pin	Name	Pin	Name
1	PE	5	Z-
2	+5V	6	HU+
3	GND	8	HU-
9	EA+	10	HV+
13	EA-	12	HV-
4	EB+	11	HW+
14	EB-	15	HW-
7	Z+		

ELDM Series	8075V48HM-**	8075V60HM-**	80100V48HM-**	6005V24HM-A5-600		8006V24HM-A5-150
	8075V48GM-**	8075V60GM-**	80100V48GM-**		6013V24GM-A5	8006V24GM-A5-150
Frame Size [mm]	80			60		80
Rated Power [w]	750	750	1000	50	125	55
Voltage [VAC]	48	60	48	24	24	24
Rated Torque [Nm]	2.39	2.39	3.2	0.8	0.4	1.9
Rated Current [A]	19	13	28	11	9	15.1
Rated Speed [r/min]	3000	3000	3000	600	3000	3000
Peak Torque [Nm]	7.17	7.17	9.6	2.4	1.2	5.7
Peak Current [A]	57	39	86	35	28.5	45.3
Max Speed [r/min]	4000	4000	4000	1200	5000	300
Torque Const [Nm/A]	0.13	0.18	0.11	0.07	0.044	0.126
Voltage Const [V/krpm]	8.7	12.5	7.7	5	3.2	8.3
Resistance [Ω]	0.09	0.2	0.06	0.2	0.09	0.16
Inductance [mH]	0.31	0.7	0.17	0.3	0.23	0.26
Inertia [kgm <sup>2</sup> *10 <sup>-4</sup> ]	1.5	1.5	2.2	0.27	0.15	0.67
Oil Seal	X	X	X	X	X	X
Encoder	1000 /2500Lines Incremental Encoder			1000 Lines Incremental Encoder		
Structure	Totally Enclosed, Natural Cooling(IP rating: IP54)					
Mass (kg)	Standard	2.93	2.93	3.32	1.1	1.9
	With Brake	3.6	3.6	4.01		2.1
Length (mm)	Standard	142	142	165	96	116
	With Brake	175	175	201		151
Permissible Load for the Shaft	L [mm]	32	32	32	27	32
	Radial [N]	392	392	392	245	392
	Thrust [N]	147	147	147	74	147

## • Dimensions



Motor Series	LC (mm)	LZ (mm)	LA (mm)	S (mm)	LB (mm)	LL (mm)	LR (mm)	LE (mm)	LG (mm)	LW (mm)	RH (mm)	W (mm)	T (mm)	TP (mm)
ELDM4010V24HL-**	40	Φ4.5	46	Φ8	Φ30	85	25	2.5	7	15.5	6	3	3	M3T6
ELDM4010V24GL-**	40	Φ4.5	46	Φ8	Φ30	115	25	2.5	7	15.5	6	3	3	M3T6
ELDM6020V24HL-**	60	Φ5.5	70	Φ14	Φ50	92	30	3	6.5	16.5	11	5	5	M5T10
ELDM6020V24GL-**	60	Φ5.5	70	Φ14	Φ50	131	30	3	6.5	16.5	11	5	5	M5T10
ELDM6020V36HL-**	60	Φ5.5	70	Φ14	Φ50	92	30	3	6.5	16.5	11	5	5	M5T10
ELDM6020V36GL-**	60	Φ5.5	70	Φ14	Φ50	121.8	30	3	6.5	16.5	11	5	5	M5T10
ELDM6040V48HL-**	60	Φ5.5	70	Φ14	Φ50	116	30	3	6.5	16.5	11	5	5	M5T10
ELDM6040V48GL-**	60	Φ5.5	70	Φ14	Φ50	155	30	3	6.5	16.5	11	5	5	M5T10
ELDM6040V60HL-**	60	Φ5.5	70	Φ14	Φ50	116	30	3	6.5	16.5	11	5	5	M5T10
ELDM6040V60GL-**	60	Φ5.5	70	Φ14	Φ50	155	30	3	6.5	16.5	11	5	5	M5T10
ELDM6060V48HL-**	60	Φ5.5	70	Φ14	Φ50	136	30	3	6.5	16.5	11	5	5	M5T10
ELDM6060V48GL-**	60	Φ5.5	70	Φ14	Φ50	175	30	3	6.5	16.5	11	5	5	M5T10
ELDM6060V60HL-**	60	Φ5.5	70	Φ14	Φ50	136	30	3	6.5	16.5	11	5	5	M5T10
ELDM6060V60GL-**	60	Φ5.5	70	Φ14	Φ50	175	30	3	6.5	16.5	11	5	5	M5T10
ELDM8075V48HM-**	80	Φ6.6	90	Φ19	Φ70	142	35	3	8	25	15.5	6	6	M6T10
ELDM8075V48GM-**	80	Φ6.6	90	Φ19	Φ70	177	35	3	8	25	15.5	6	6	M6T10
ELDM8075V60HM-**	80	Φ6.6	90	Φ19	Φ70	142	35	3	8	25	15.5	6	6	M6T10
ELDM8075V60GM-**	80	Φ6.6	90	Φ19	Φ70	177	35	3	8	25	15.5	6	6	M6T10
ELDM80100V48HM-**	80	Φ6.6	90	Φ19	Φ70	165	35	3	8	25	15.5	6	6	M6T10
ELDM80100V48GM-**	80	Φ6.6	90	Φ19	Φ70	201	35	3	8	25	15.5	6	6	M6T10
ELDM6005V24HM-A5-600	60	Φ5.5	70	Φ14	Φ50	96	30	3	6.5	16.5	11	5	5	M6T10
ELDM6013V24GM-A5	60	Φ5.5	70	Φ14	Φ50	113	30	3	6.5	16.5	11	5	5	M6T10
ELDM8006V24HM-A5-150	80	Φ6.6	90	Φ19	Φ70	116	35	3	8	25	15.5	6	6	M6T10
ELDM8006V24GM-A5-150	80	Φ6.6	90	Φ19	Φ70	151	35	3	8	25	15.5	6	6	M6T10

## Ordering Information

Frame(mm)	NO.	Length (mm)	Diameter (mm)	Servo Drive	Power Cable	Encoder Cable	Brake Cable			
40	ELDM4010V24HL-**	85	Φ8	ELD2-RS400 ELD2-CAN400 ELD5-400 ELD5-400Z	CABLE-ACM*M*	CABLE-LD2-BM** (ELD2 Series) ..... CABLE-ENCODER-** (ELD5 Series)				
	ELDM4010V24GL-**	115					CABLE-SC*M*-S			
60	ELDM6020V24HL-**	92	Φ14				ELD5-750 ELD2-RS7030 ELD2-CAN7030	CABLE-ACM*M*	CABLE-LD2-BM** (ELD2 Series) ..... CABLE-ENCODER-** (ELD5 Series)	
	ELDM6020V24GL-**	131								CABLE-SC*M*-S
	ELDM6020V36HL-**	92								
	ELDM6020V36GL-**	121.8								CABLE-SC*M*-S
	ELDM6040V48HL-**	116								
	ELDM6040V48GL-**	155								CABLE-SC*M*-S
	ELDM6040V60HL-**	116								
	ELDM6040V60GL-**	155								CABLE-SC*M*-S
	ELDM6060V48HL-**	136								
	ELDM6060V48GL-**	175								CABLE-SC*M*-S
	ELDM6060V60HL-**	136								
	ELDM6060V60GL-**	175								CABLE-SC*M*-S
80	ELDM8075V48HM-**	142	Φ19	ELD2-RS7030 ELD2-CAN7030	CABLE-ACM*M*	CABLE-LD2-BM** (ELD2 Series) ..... CABLE-ENCODER-** (ELD5 Series)				
	ELDM8075V48GM-**	177					CABLE-SC*M*-S			
	ELDM8075V60HM-**	142								
	ELDM8075V60GM-**	177					CABLE-SC*M*-S			
	ELDM80100V48HM-**	165								
	ELDM80100V48GM-**	201					CABLE-SC*M*-S			
60	ELDM6005V24HM-A5-600	96	Φ14	ELD2-RS400 ELD2-CAN400 ELD5-400	CABLE-ACM*M*	CABLE-LD2-BM** (ELD2 Series) ..... CABLE-ENCODER-** (ELD5 Series)				
60	ELDM6013V24GM-A5	113	Φ14				CABLE-SC*M*-S			
80	ELDM8006V24HM-A5-150	116	Φ19							
	ELDM8006V24GM-A5-150	151		CABLE-SC*M*-S						

**ELD2 Series**  
Tuning Cable: CABLE-PC-1  
485 Communication Cable: CABLE-TX1M0-LD2

**ELD5 Series**  
Tuning Cable: CABLE-ACH1000  
485 Communication Cable: CABLE-TX1M0-BUS

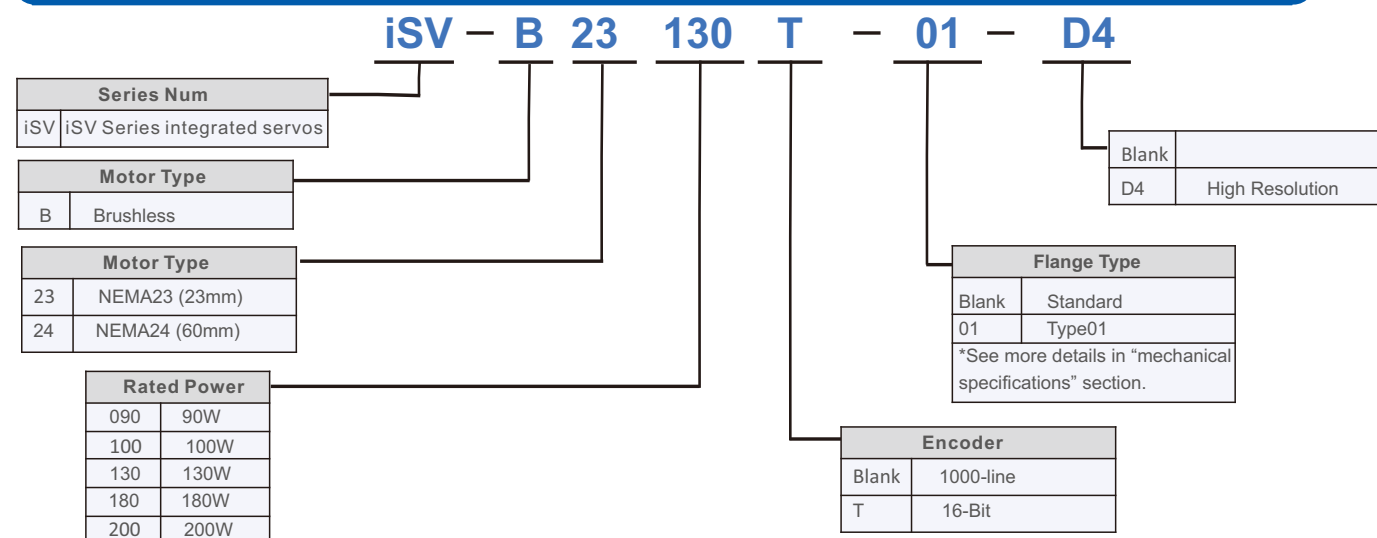
# iSV Series Integrated Servo Motors



- Highly Integrated, Servo motor + advanced DSP servo drive
- Lower cable cost
- Support step & direction, commands
- Built-in pulse generator for the tuning and self-test
- Compact size, Save mounting space

Leadshine's iSV series integrated servo motors are one of the most compact servo systems available on the market. An iSV integrated servo has a servo motor (PMSM or BLDC optional) and an advanced DSP servo drive. At very compact size and with all components integrated, the iSV series servos can save mounting space, eliminate encoder connection and motor wiring time, increase reliability, and lower cable and labor cost. The drive takes step & direction, commands, and is capable of outputting in position and fault signals back to the master controller or external devices for complete system controls.

## Part Numbers



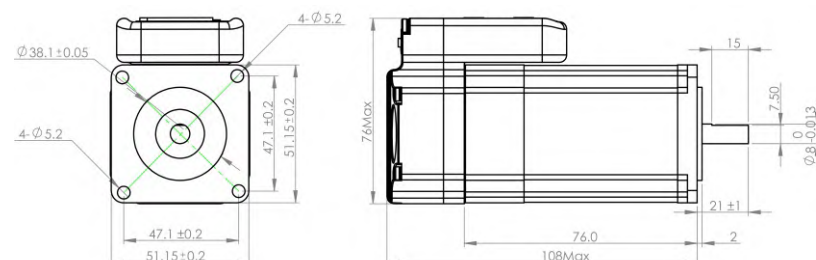
## Specifications

Part Number	ISV-B23090*-01	ISV-B23130*-01	ISV-B23180*-01	ISV-B24100C	ISV-B24200C
Rated Power(W)	90	130	180	100	200
Rated Torque(Nm)	0.30	0.45	0.6	0.32	0.64
Peak Torque(Nm)	0.90	1.1	1.5	0.96	1.92
Rated Speed(rpm)	3000	3000	3000	3000	3000
Peak Speed(rpm)	4000	4000	4000	4000	4000
Rated Voltage(Vdc)	36	36	36	36	36
Weight(kg)	0.95	1.25	1.54	1.4	1.8

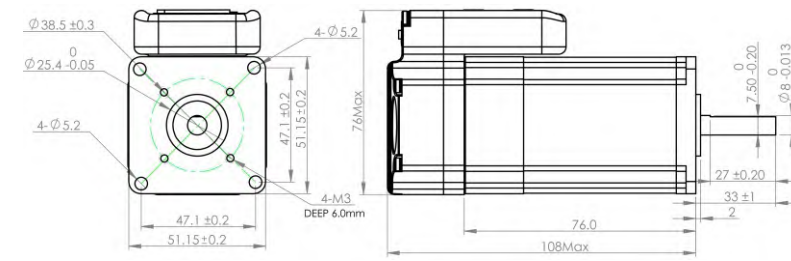
## Mechanical Specifications

### • iSV-B23090

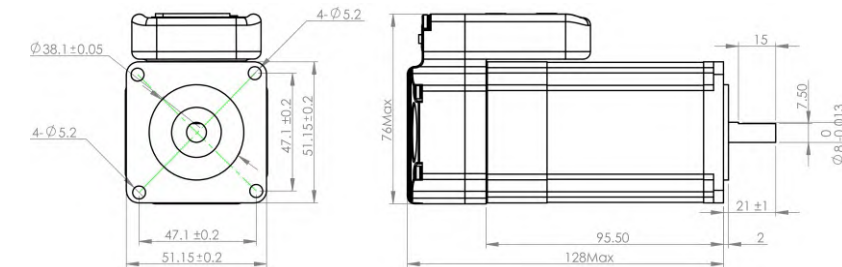
Units: mm 1 inch = 25.4 mm



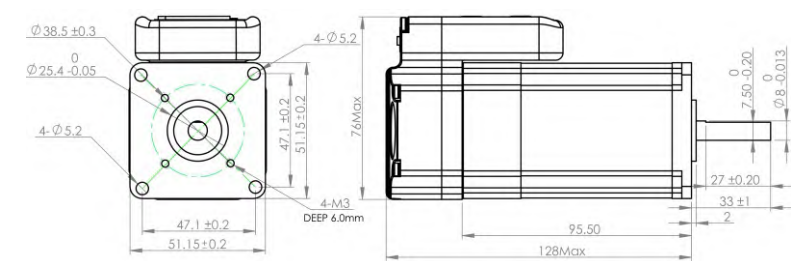
### • iSV-B23090-01



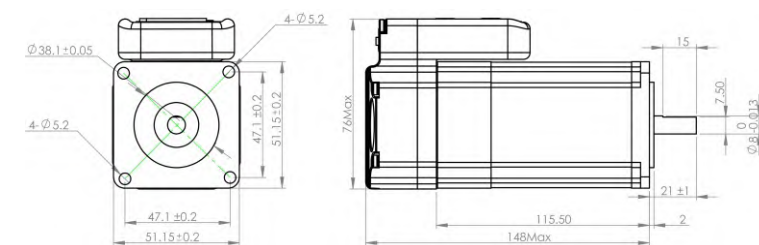
### • iSV-B23130



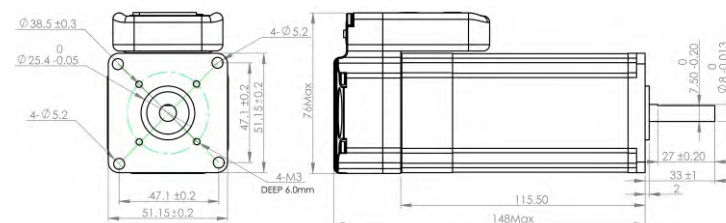
### • iSV-B23130-01



### • iSV-B23180



### • iSV-B23180-01



### Installation Notes:

- (1) Do not give strong impact shock to the motor shaft.
- (2) The motors are not water proof. Please contact Leadshine if you need a water proof product.
- (3) Keep the ambient temperature within the permissible temperature range (0 to 40 °C) for the product. Use force cooling method if necessary. Available time for the iSV-A24100, iSV-A24200, iSV-A24400, iSV-B17025, iSV-B17050, iSV-B17075 is to be determined. Please contact Leadshine or visit Leadshine's website at [www.leadshine.com](http://www.leadshine.com) for the latest information about the iSV series integrated servos.



# Reserved Product

- ACS Series Brushless Drives
- BLM Series Brushless Motors
- DCS Series Brushed Drives
- DCM Series Brushed Motors

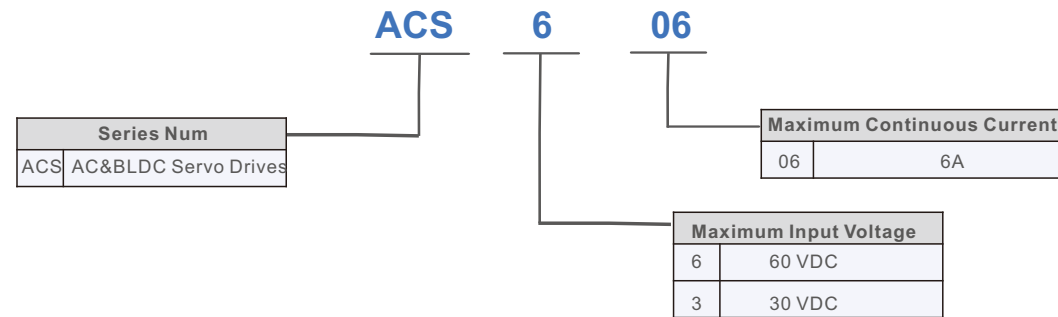
## ACS Series Brushless Drives

The ACS series brushless drives are a traditional product series which provide a very cost-effective drive. It has been widely used for some application which need to enhance the performance and efficiency of the Machine . such as inkjet printers, engraving machines, electronics manufacturing equipments, special NC machines, pick and place devices, packing devices, and so on.

- 18-80Vdc · 6Amp cont/18Amp peak
- Up to 200watt
- Pulse + direction
- Cost-effective
- Compact size



## Part Numbers

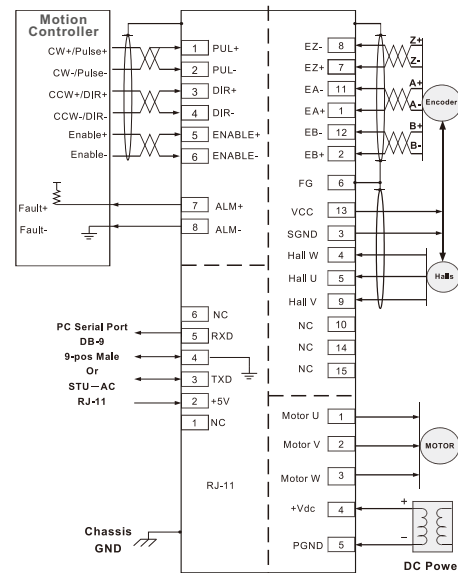


## Specifications

Parameters	ACS306	ACS606
Maximum Continuous Power	150 W	200 W
Maximum Continuous Current	6 A	6 A
Peak Current	15 A	18 A
Input Voltage	18 to 30 VDC	18 to 60 VDC
Logical Signal Input Current	7 to 20 mA	7 to 20 mA
Pulse Input Frequency	0 to 250 kHz	0 to 250 kHz
Isolation Resistance	500 MΩ	500 MΩ
Current Provided for Encoder	100 mA	100 mA
Command Input	Step/Direction	Step/Direction
Enable/Disable Input	Differential	Differential
Alarm Signal Output	Isolated OC Output	No
End Limit Input	No	No
In Position Signal Output	No	No
Encoder Feedback	A, B, Z (Differential)	A, B, Z (Differential)
Hall Effect Sensor Feedback	U, V, W (Single-ended)	U, V, W (Single-ended)
Encoder Output	No	No
Communication Interface	RS232	RS232
Braking Resistor	No	No
Size (mm)	116×69.2×26.5	118×75.5×34
Weight (g)	280	280
Powering Motors	18 - 30 VDC, 10-150 W Brushless Servo Motors: BLM57025, BLM57050	18 - 60 VDC, 10-200 W Brushless Servo Motors: BLM57090, BLM57130, BLM57180, 57BL180

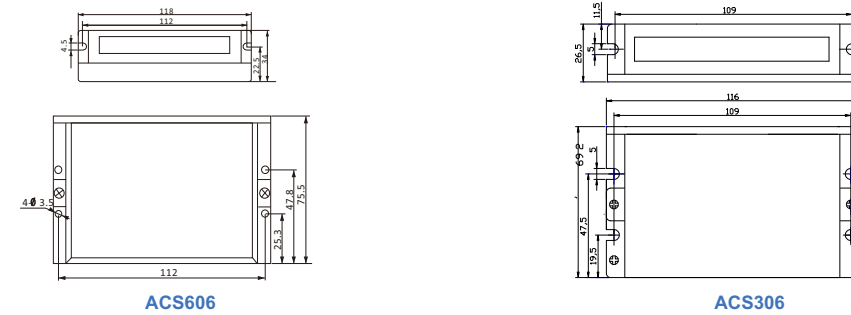
## Typical Connection

- ACS306, ACS606



## Mechanical Specifications

Units: mm

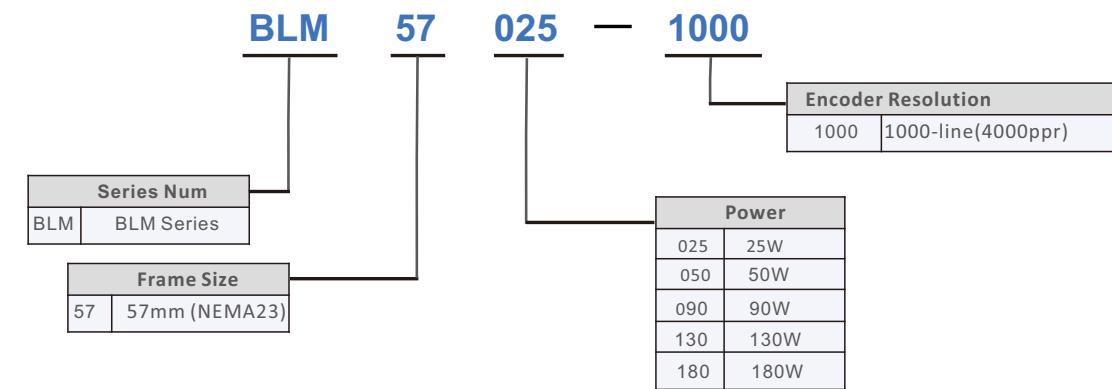


## BLM Series Brushless Motors

BLM series brushless motors are highly cost-effective brushless DC motors with a 1000-line differential encoder (EA+/EA-, EB+/EB-), and Hall Sensors with standard Hall signals (U, V, W), which offer AC-servo-like performance, low motor noise and low heating performance, while at the cost of normal stepper systems.



## Part Numbers



### Notes:

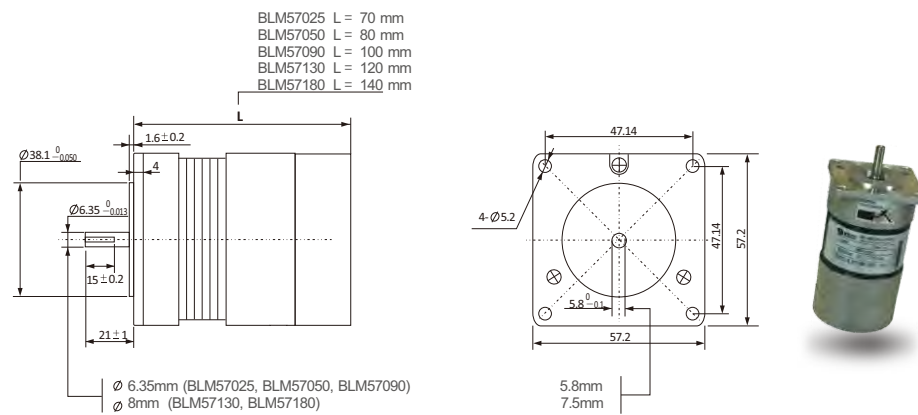
1. The 57BL180 is a screw mounted model and the above "Part Number" does not apply.
2. Rated voltage of the BLM57025, BLM57050 is 24VDC, and rated voltage of the BLM57090, BLM57130, BLM57180 and 57BL180 is 36VDC.
3. Standard models of the BLM series come with a standard 1000-line differential encoder with index slits (A, B, Z), and Hall Sensors (U, V, W).

## Specifications

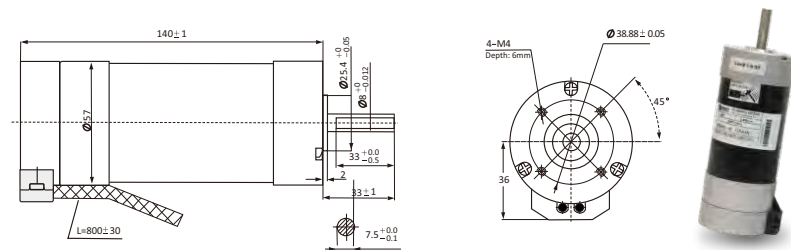
Parameters	Units	BLM57025	BLM57050	BLM57090	BLM57130	BLM57180	57BL180
Rated Voltage	VDC	24	24	36	36	36	36
Rated Power	W	25	50	90	130	180	180
Rated Torque	Nm	0.08	0.16	0.29	0.41	0.57	0.57
Rated Current	A	1.6	3	3.45	5.3	6.7	7
Rated Speed	RPM	3000	3000	3000	3000	3000	3000
Peak Torque	Nm	0.24	0.48	0.87	1.23	1.71	1.71
Peak Current	A	4.8	9	10.35	15.9	20	20.5
Torque Constant	Nm/A	0.05	0.053	0.084	0.078	0.085	0.089
Back EMF Constant	V/krpm	5.2	5.55	8.8	8.2	8.9	9.3
Inertia	Kg*m <sup>2</sup> ×10 <sup>-5</sup>	0.3	0.75	1.19	1.73	2.3	2.3
Poles	-	4	4	4	4	4	4

## Mechanical Specifications

- BLM57025, BLM57050, BLM57090, BLM57130, BLM57180



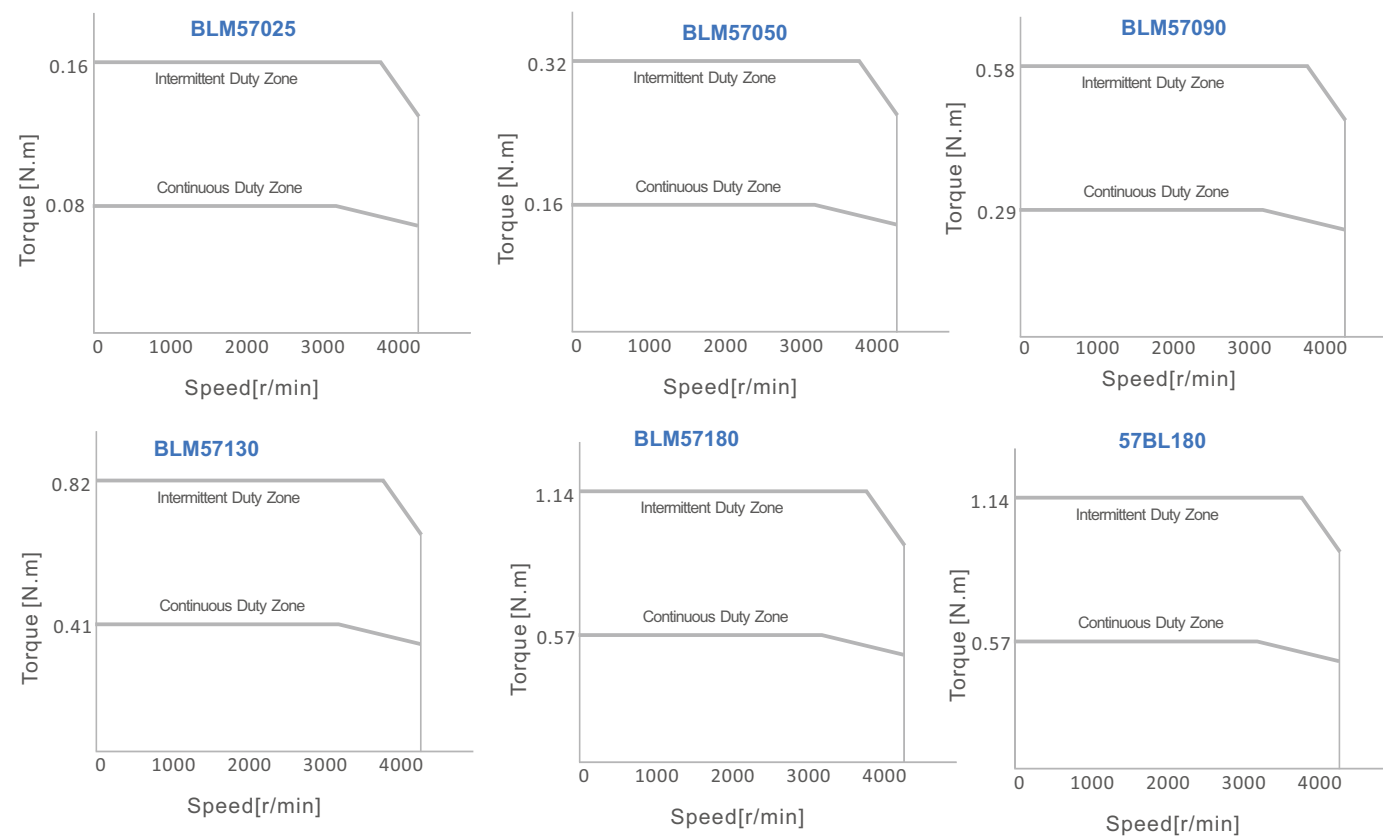
- 57BL180



### Installation Notes:

- (1) Do not give strong impact shock to the motor shaft.
- (2) Make sure the hall sensor signals U/V/W are connected to the drive correctly.
- (3) The motors are not water proof. Please contact Leadshine if you need a water proof product.
- (4) Keep the ambient temperature within the permissible temperature range (0 to 40 °C) for the product. Use force cooling method if necessary.
- (5) The thread depth of the M4 mounting holes of the 57BL180 is 6.0 mm. Do not screw more than 6.0 mm as this will cause damage to the motor.

## Torque-Speed Curves



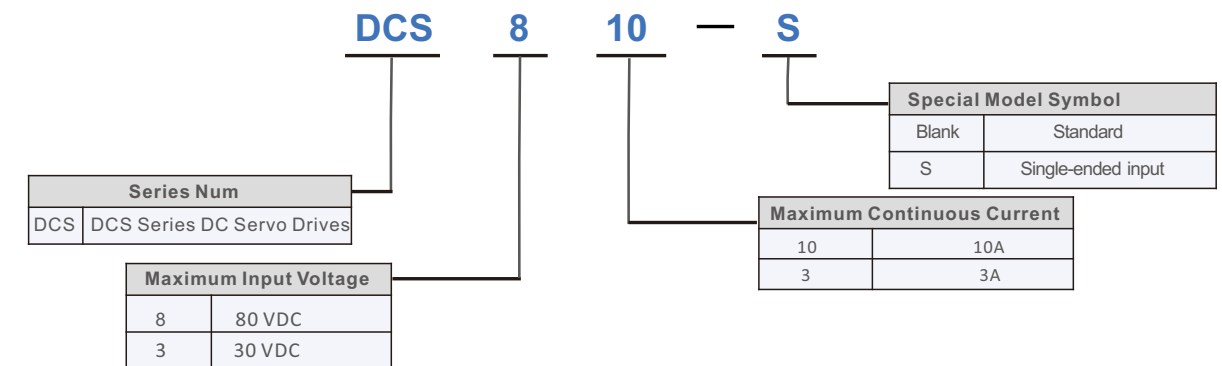
## DCS Series Brushed Drives

DCS series brushed drives are brushed servo drives developed with advanced algorithms for smooth motion control. All inputs of those servo drives are opto-isolated. Taking step and direction control inputs makes drives easy to implement in many OEM applications. They can drive 10W to 400W brush DC servo motors at very high precision smoothly and quietly with very low motor heating at very effective costs.

- Step & direction, or CW/CCW control
- 18 to 80 VDC supply range
- Up to 10 A continuous and 20 A peak current
- Opto-isolated inputs
- Capable driving servo motors with single-ended or differential signals



## Part Numbers

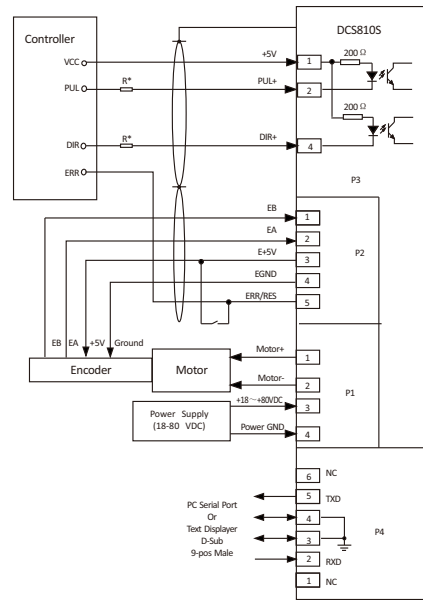


## Specifications

Parameters	DCS303	DCS810	DCS810S
Maximum Continuous Power	90 W	400 W	400 W
Maximum Continuous Current	3 A	10 A	10 A
Peak Current	15 A	20 A	20 A
Input Voltage	18 to 30 VDC	18 to 80 VDC	18 to 80 VDC
Logical Signal Input Current	7 to 20 mA	7 to 20 mA	7 to 20 mA
Pulse Input Frequency	0 to 250 kHz	0 to 250 kHz	0 to 250 kHz
Isolation Resistance	500 MΩ	500 MΩ	500 MΩ
Current Provided for Encoder	50 mA	50 mA	50 mA
Command Input	Step/Direction Single-ended	Step/Direction & CW/CCW Single-ended & Differential	Step/Direction & CW/CCW Single-ended
Enable/Disable Input	Single-ended	Differential	Differential
Alarm Signal Output	Isolated, OC Output	No	NONE-Isolated, OC Output
Communication Connector	B4B-PH	RJ11	RJ11
Communication Interface	RS232	RS232	RS232
Encoder Feedback	A, B (Single-ended)	A+, A-, B+, B- (Differential)	A, B (Single-ended)
Size (mm)	86×55.5×20.5	116×69.2×26.5	116×69.2×26.5
Weight (g)	100	210	212
Powering Motors	18 to 30 VDC brush DC servo motors with single-ended encoder, power up to 90W	18 to 80 VDC brush DC servo motors with differential encoder, power up to 400W	18 to 80 VDC brush DC servo motors with single-ended encoder, power up to 400W

## Typical Connection

### DCS810S



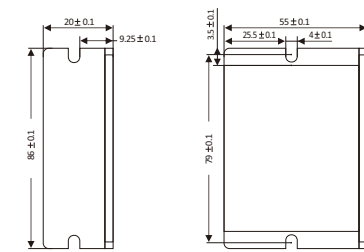
#### Notes:

\* Series connect resistors R for current-limiting when +12V or +24V single-ended control signals are used. R=1K (Power>0.25W), if Vcc=12 V, and R=2K (Power>0.25W), if Vcc=24 V.

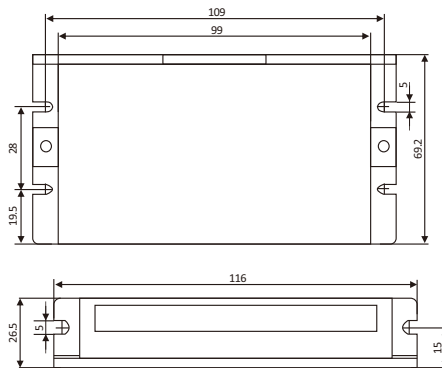
## Mechanical Specifications

### DCS303

Units: mm  
1 inch = 25.4 mm



### DCS810, DCS810S

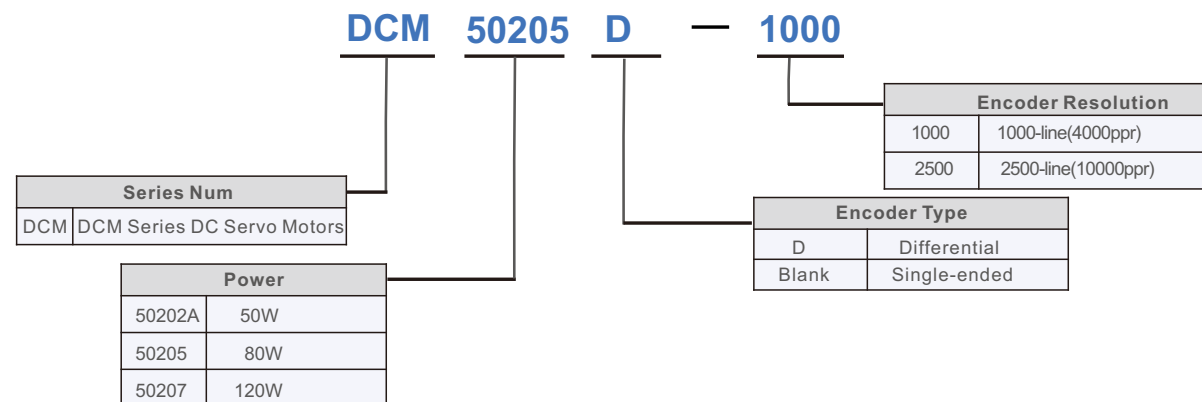


## DCM Series Brushed Servo Motors

DCM series brushed DC servo motors are made at industrial quality and have been adopted by hundreds of OEM clients in the world such as CNC machinery, Inkjet printers, plotters, screen printing, lab automation, etc. Leadshine DCM brushed servo motors are integrated with standard 500-line or 1,000-line (standard) incremental encoders. The frame sizes are available in 54 mm (compatible with Pittman 14000 series), or standard NEMA 23.

- Available power in 50W, 80W and 120W
- Integrated 1,000-line differential-ended encoders. 500-line optional.
- 54 mm framesize compatible with Pittman 14000 series; NEMA 23 optional

## Part Numbers



## Specifications

Parameters	Units	DCM50202A	DCM50205	DCM50207
Rated Voltage	VDC	24	24	30.3
Rated Power	W	50	80	120
Continuous Torque (Max)	Nm	0.15	0.25	0.35
Peak Torque (Stall)	Nm	0.76	1.59	2.90
No-load Speed	RPM	4600±10%	4000±10%	3600±10%
Rated Speed	RPM	3500	3400	2900
Rated Current	A	1.79	2.95	3.94
Peak Current (Stall)	A	13.9	21.6	32.6
No-load Current	A	0.45	0.5	0.45
Torque Constant	Nm/A	48 x 10 <sup>-3</sup>	52 x 10 <sup>-3</sup>	80 x 10 <sup>-3</sup>
Rotor Inertia	Kg·m <sup>2</sup> ×10 <sup>-5</sup>	1.62	3.11	4.73
Winding Temperature	°C	155 (Max)	155 (Max)	155 (Max)
Thermal Impedance	°C/watt	9.00	7.30	4.98
Encoder Resolution	Line	500/1000 optional	500/1000 optional	500/1000 optional
Length (Plus Encoder)	mm	129±2	161±2	196±2
Weight (Plus Encoder)	g	694	1182	1338

## Encoder Specifications & Connections

The rated voltage of the Encoders come with the DCM series motors is 5VDC, and it consumes 50mA(max). The DCM5xxxx-1000 motor comes with a 1000-line encoder, and the DCM5xxxx-500 motor comes with a 50-line encoder. The Z (Index) signal is NOT offered by standard models, please contact Leadshine if an encoder with Z (Index) signal is required.

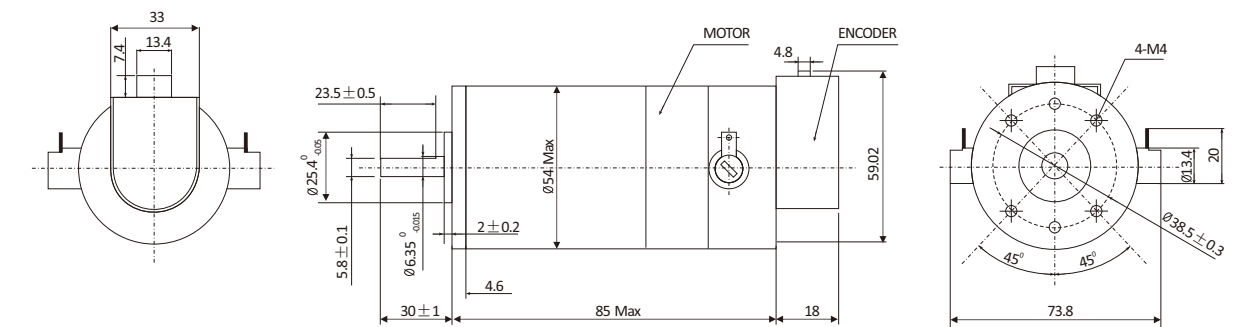
### Encoder Connections

Connections of a single-ended encoder			Connections of a differential encoder		
Pin	Wire Color	Connection (DCS303, DCS810S / DCS810)	Pin	Wire Color	Connection (DCS810)
1	Blue	Channel B (EB / EB+)	1	Black	Channel A+ (EA+)
2	Yellow	Channel A (EA / EA+)	2	Blue	Channel A- (EA-)
3	Red	VCC (E+5V / E+5V)	3	Yellow	Channel B+ (EB+)
4	Black	Ground (EGND / EGND)	4	Green	Channel B- (EB-)
5	Green	Index / NC (NC / NC)	5	Red	VCC (E+5V)
			6	White	Ground ( EGND)

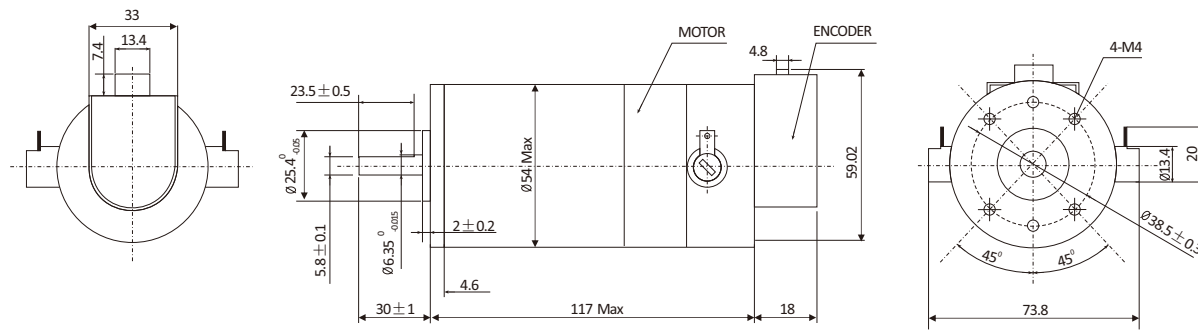
## Mechanical Specifications

Units: mm 1 inch = 25.4 mm

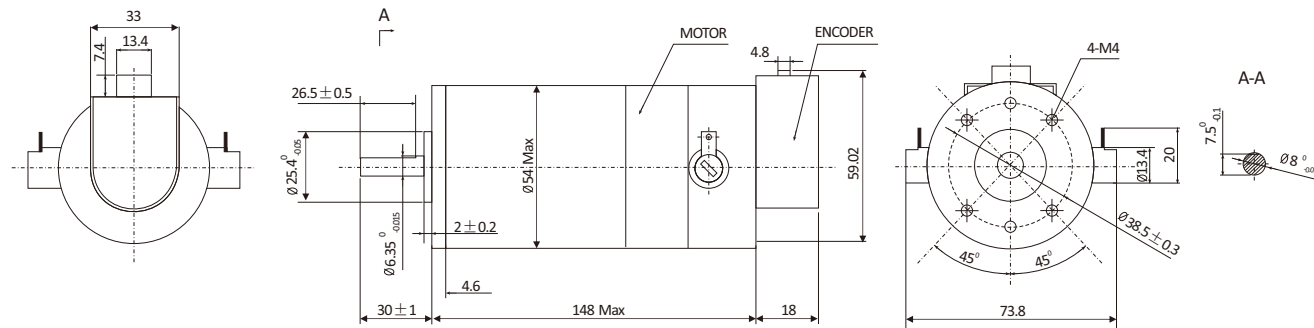
### DCM50202A



• DCM50205



• DCM50207



Installation Notes:

- (1) Do not give strong impact shock to the motor shaft.
- (2) Make sure the encoder signals are connected to the drive correctly.
- (3) The motors are not water proof. Please contact Leadshine if you need a water proof product.
- (4) Keep the ambient temperature within the permissible temperature range (0 to 40 °C) for the product. Use force cooling method if necessary.

# Power Supplies



- 220VAC ± 10% or 110 VAC ± 10%
- Higher Reliability and mass production
- High efficiency, low temperature rising

## Features

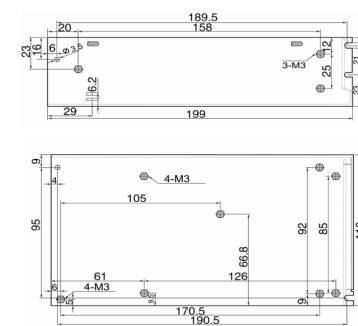
- 1.8 or 3 current overload
- Compact Size, Light in Weight
- Use Switch to select input voltage 220VAC ± 10%
- Over-current, Over-voltage, Low-voltage Protections
- Big Power with High Efficiency
- CE and RoHS

## Electrical Specifications

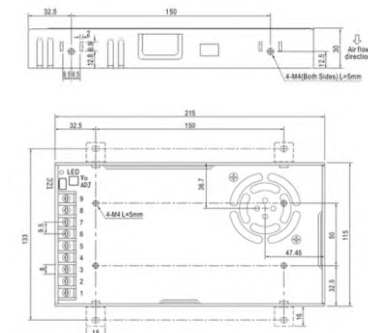
Model	Output Voltage (VDC)	Continuous Current(A)	Peak Current(A)	Input Voltage	Power(W)	Dimensions (mm)	Weight(Kg)
SPS2410(V3.0)	24	10	30	220VAC ± 10%	240	199*110*50	0.8
SPS3611(V3.0)	36	11	33		400	215*115*30	0.6
SPS488(V3.0)	48	8.3	24.9		400	215*115*30	0.6
SPS606(V3.0)	60	6.7	20.1		400	215*115*30	0.6

## Mechanical Specifications

(unit: mm, 1inch=25.4mm)



SPS2410(V2.0)



SPS3611(V2.0)/SPS488(V2.0)/SPS607(V2.0)