

Servo Motors with 23-Bit Encoders													
Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m <sup>2</sup> 10 <sup>-4</sup> ]	Brake	Length [mm]
ELM0850LH130F-HD	130	220	850	5.4	16.2	6.5	19.5	1500	3000	62.23	13.8		145
ELM0850LH130E-HD	130	220	850	5.4	16.2	6.5	19.5	1500	3000	62.23	13.8	●	172
ELM1300LH130F-HD	130	220	1300	8.4	25.2	9.5	28.5	1500	3000	60.1	20.59		165
ELM1300LH130E-HD	130	220	1300	8.4	25.2	9.5	28.5	1500	3000	60.1	20.59	●	192
ELM1800LH130F-HD	130	220	1800	11.5	34.5	9	27	1500	3000	27	30.15		192
ELM1800LH130E-HD	130	220	1800	11.5	34.5	9	27	1500	3000	27	30.15	●	219

**Extension cable:**  
Encoder Cable: Cable-7BM\*M\*-HD (length: 1.5m,3m,5m,7m,10m optional)  
Power Cable: Cable-RZ\*M\*-HD (V2.0) (length: 1.5m,3m,5m,7m,10m optional)  
Brake Cable: Cable-SC\*M\*-HD (length: 1.5m,3m,5m,7m,10m optional)

## Typical Applications



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## High Performance AC Servo Systems

ELP Servo Drives + ELM Servo Motors

- Rated power : 100w - 2kw
- Position/Velocity/Torque control
- Easy tuning
- Modbus / EtherCAT
- Built-in Indexer
- Model following control
- Notch filter / Damping filter
- 17bit inc/23bit abs encoder
- Built-in dynamic brake



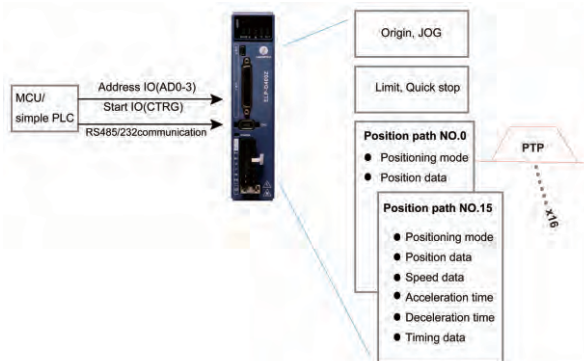
ELP Series AC servo products are high performance AC digital servo which is designed for position/velocity/torque high accurate control, power range up to 2kW and it can provide intelligent performance with easy tuning process. Combined with abundant features like MFC, vibration suppression, Multi-mode 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 Series AC Servo Drives

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

#### Control Types

- **Pulse+Direction**
- **Analog input**
- **Modbus**
  - Standard Modbus RTU
  - Up to 31 axes in Network based on RS485
- **EtherCAT**
  - Cia402
  - CoE-Based on DSP-402 Device Profile
- **PR Mode**  
Programmable 16-segment position table, support positioning/homing/ limit/ quick stop/ JOG...



#### Inputs/Outputs

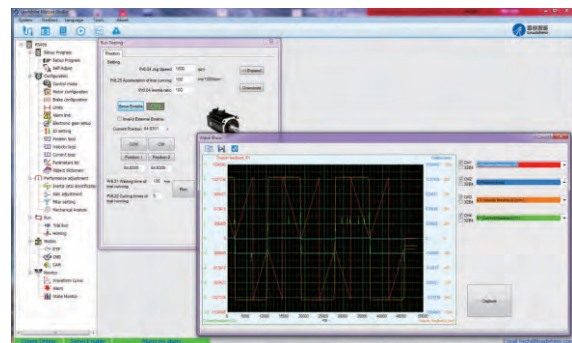
- Pulse: 0-500kHz, 5V differential input/24V Single-ended
- 9 inputs(common+ and common- two wiring modes)
- 6 outputs(4 single-ended, 2 differential)
- Encoder ABZ output(3 single-ended, 3 differential)
- -10Vdc~+10Vdc Analog

### ELM Series AC Servo Motors

- Power Range: 100W – 2kW
- Low / medium / high inertia for different applications
- Compact Size (89mm long for 400w motor)
- New design of magnetic circuit to reduce the torque ripple
- High Precision Encoders:
  - 17bit single-rev incremental encoder (131072 cps)
  - 23bit multi-rev absolute encoder (8388608 cps)
- Various connector for different applications
  - Standard plastic connector
  - IP67 aviation connector

### Leadshine Motion Studio

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



## ELP Series Servo Drive Part Number

### ELP - D 2000 Z

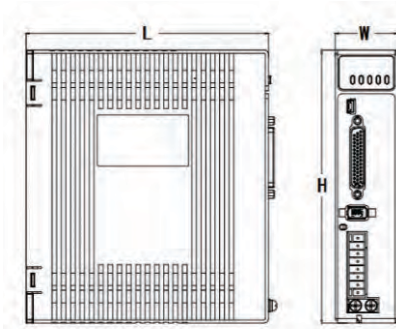
Series Num	
ELP	New series servo driver

Command Source	
D	Stand version (Pulse+direction/Analog Input)
RS	RS 485 (Pulse+direction/Analog Input/Modbus)
EC	EtherCAT

Encoder	
Z	Serial encoder
Blank	TTL signal encoder

Power	
400	400W
750	750W
1000	1000W
1500	1500W
2000	2000W

## ELP Series Servo Drive Specifications



Drive Model	Rated Power	Rated Voltage	Peak Current	Max current	Dimension
ELP-*400Z	400W	220Vac	3.5A	10.5A	156*175*40mm
ELP-*750Z	750W	220Vac	5.5A	16.5A	156*175*50mm
ELP-*1000Z	1000W	220Vac	7A	21A	156*175*50mm
ELP-*1500Z	1500W	220Vac	9.5A	28.5A	175*175*80mm
ELP-*2000Z	2000W	220Vac	12A	36A	175*175*80mm

## ELM Series Servo Motor Part Number

### ELM - 0750 B L 80 H -SS

Series Num	
ELM	series motor

Power	
0100	100W
0200	200W
0400	400W
0750	750W
1000	1000W
1500	1500W
2000	2000W

Encoder Type	
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

Plug Type	
SS	Plastic plug
HS	Small size
H	Big size aviation plug
HH	Injection plug
HD	Special Connector

NO	Shaft Form		Brake		Oil Seal	
	Circular shaft	Keyhole	Install	None	Install	None
A	•		•		•	
B	•			•	•	
C	•		•			•
D	•			•		•
E		•	•		•	
F		•		•	•	
G		•	•			•
H		•		•		•

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



## ELM AC Servo Motor Models

### Servo Motors with 17-Bit Encoders

Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m <sup>2</sup> 10 <sup>-4</sup> ]	Brake	Length [mm]
ELM0100FL40H-SS	40	220	100	0.32	0.96	1.1	3.3	3000	5000	20.5	0.046		79
ELM0100FL40G-SS	40	220	100	0.32	0.96	1.1	3.3	3000	5000	20.5	0.046	●	109
ELM0200FL60H-SS	60	220	200	0.64	1.92	1.7	5.1	3000	5000	29.2	0.20		86.5
ELM0200FL60G-SS	60	220	200	0.64	1.92	1.7	5.1	3000	5000	29.2	0.22	●	118.5
ELM0400FL60H-SS	60	220	400	1.28	3.81	2.8	8.4	3000	5000	30.2	0.32		115.5
ELM0400FL60G-SS	60	220	400	1.28	3.81	2.8	8.4	3000	5000	30.2	0.34	●	147.5
ELM0400FM60H-SS	60	220	400	1.27	3.81	2.8	8.4	3000	5000	30.2	0.67		115.5
ELM0400FM60G-SS	60	220	400	1.27	3.81	2.8	8.4	3000	5000	30.2	0.67	●	147.5
ELM0750FM80H-SS	80	220	750	2.4	7.2	4.5	13.5	3000	5000	35.7	1.53		124.5
ELM0750FM80G-SS	80	220	750	2.4	7.2	4.5	13.5	3000	5000	35.7	1.59	●	157.3
ELM1000FM80H-SS	80	220	1000	3.2	9.6	5.7	17.1	3000	5000	36.5	1.77		139.5
ELM1000FM80G-SS	80	220	1000	3.2	9.6	5.7	17.1	3000	5000	36.5	1.79	●	172.3

**Extension cable:**

Encoder Cable: Cable-7BM\*M\*-Z (length: 1.5m,3m,5m,7m,10m optional)

Power Cable: Cable-RZ\*M\*-S (length: 1.5m,3m,5m,7m,10m optional)

Brake Cable: Cable-SC\*M\*-S (length: 1.5m,3m,5m,7m,10m optional)

### Servo Motors with 23-Bit Encoders

Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m <sup>2</sup> 10 <sup>-4</sup> ]	Brake	Length [mm]
ELM0100LL40F-SS	40	220	100	0.32	0.96	1.1	3.3	3000	6500	14.8	0.048		80.7
ELM0100LL40E-SS	40	220	100	0.32	0.96	1.1	3.3	3000	6500	14.8	0.051	●	114.7
ELM0200LH60F-SS	60	220	200	0.64	1.92	1.9	5.7	3000	6500	21.8	0.29		73.1
ELM0200LH60E-SS	60	220	200	0.64	1.92	1.9	5.7	3000	6500	21.8	0.31	●	103.6
ELM0400LH60F-SS	60	220	400	1.27	3.81	3.2	9.6	3000	6500	22.6	0.56		89.5
ELM0400LH60E-SS	60	220	400	1.27	3.81	3.2	9.6	3000	6500	22.6	0.58	●	120.2
ELM0750LH80F-SS	80	220	750	2.4	7.2	5.1	15.3	3000	6500	28.8	1.56		95.7
ELM0750LH80E-SS	80	220	750	2.4	7.2	5.1	15.3	3000	6500	28.8	1.66	●	130.7

**Extension cable:**

Encoder Cable: Cable-7BM\*M\*-Z (length: 1.5m,3m,5m,7m,10m optional)

Power Cable: Cable-RZ\*M\*-S (length: 1.5m,3m,5m,7m,10m optional)

Brake Cable: Cable-SC\*M\*-S (length: 1.5m,3m,5m,7m,10m optional)

### Servo Motors with 23-Bit Encoders

Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m <sup>2</sup> 10 <sup>-4</sup> ]	Brake	Length [mm]
ELM1000LM130F-H	130	220	1000	4	12	4	12	2500	3000	72	8.5		166
ELM1000LM130E-H	130	220	1000	4	12	4	12	2500	3000	72	8.5	●	223
ELM1500LM130F-H	130	220	1500	6	18	6	18	2500	3000	65	12.6		179
ELM1500LM130E-H	130	220	1500	6	18	6	18	2500	3000	65	12.6	●	236
ELM2000LM130F-H	130	220	2000	7.7	22	7.5	21	2500	3000	68	15.3		241
ELM2000LM130E-H	130	220	2000	7.7	22	7.5	21	2500	3000	68	15.3	●	249

**Extension cable:**

Encoder Cable: Cable-7BM\*M\*-HZ (length: 1.5m,3m,5m,7m,10m optional)

Power Cable: Cable-RZ\*M\*-H(V1.1), Cable-RZ\*M\*-H(V2.0)(Flexible) (length: 1.5m,3m,5m,7m,10m optional)

Brake Cable: Cable-SC\*M\*-H (length: 1.5m,3m,5m,7m,10m optional)



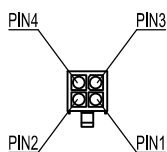
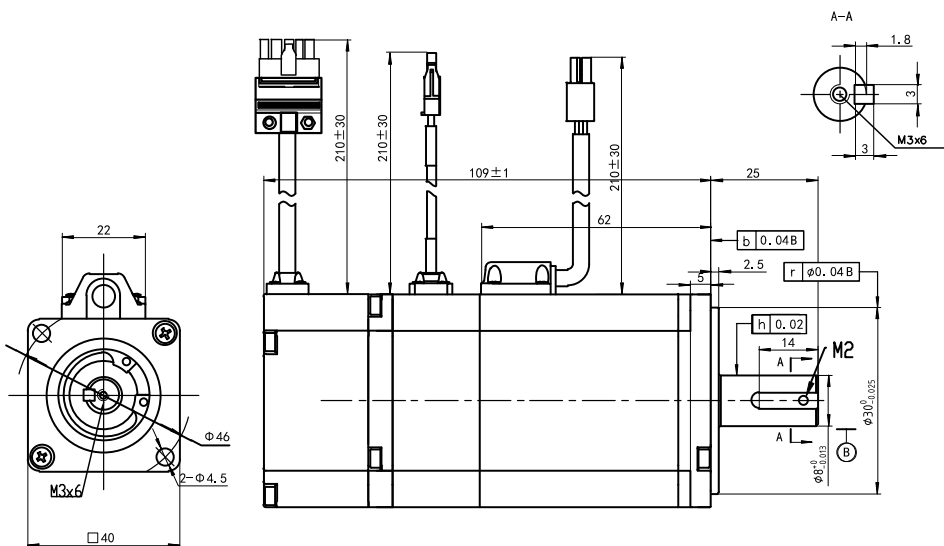
type	Companion products
ELM0100FL40H-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z
ELM0100FL40G-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z / CABLE-SC5M0-S
ELM0200FL60H-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z
ELM0200FL60G-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z / CABLE-SC5M0-S
ELM0400FL60H-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z
ELM0400FL60G-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z / CABLE-SC5M0-S
ELM0400FM60H-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z
ELM0400FM60G-SS	ELP-D400Z / ELP-RS400Z / ELP-EC400Z / CABLE-RZ5M0-S1 / CABLE-7BM5M0-Z / CABLE-SC5M0-S
ELM0750FM80H-SS	ELP-D750Z / ELP-RS750Z / ELP-EC750Z / CABLE-RZ5M0-S / CABLE-7BM5M0-Z
ELM0750FM80G-SS	ELP-D750Z / ELP-RS750Z / ELP-EC750Z / CABLE-RZ5M0-S / CABLE-7BM5M0-Z / CABLE-SC5M0-S
ELM1000FM80H-SS	ELP-D1000Z / ELP-RS1000Z / ELP-EC1000Z / CABLE-RZ5M0-S / CABLE-7BM5M0-Z
ELM1000FM80G-SS	ELP-D1000Z / ELP-RS1000Z / ELP-EC1000Z / CABLE-RZ5M0-S / CABLE-7BM5M0-Z / CABLE-SC5M0-S



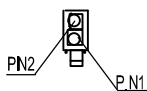
## ELM0100FL40G-SS

40mm, low inertia, 100w servo motor  
17bit incremental encoder, brake

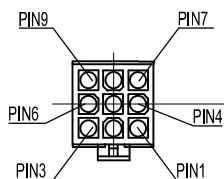
Rated Voltage (Vac)	200-220
Rated Power (w)	100
Rated Torque (N.m)	0.32
Peak Torque (N.m)	0.96
Rated Speed (rpm)	3000
Peak Speed (rpm)	6000
Rated Current (Amp)	1.1
Peak Current (Amp)	3.3
Torque Const (N.m/Amp)	0.289
Back EMF Const (V/krpm)	20.5
Resistance (Ω)	14.3
Inductance (mH)	14.8
Inertia (kg*m <sup>2</sup> *10 <sup>-4</sup> )	0.046
Poles	8
Encoder type	17bit single-turn
Protection level	IP54



Wiring details of Power cable connector				
Pos	1	2	3	4
Signal	U	W	V	PE
Color	blue	red	black	Yel/Gre



Wiring details of Encoder cable connector		
Pos	1	2
Signal	0V	24V
Color	black	red



Wiring details of encoder cable connector							
Pos	1	2	3	4	5	6	7
Signal	PE	5V	0V	SD+	SD-	--	--
Color	shield	white	black	blue	purple	--	--

Connector Code Of Extension Cable Side			
Type	Winding Connector	Encoder Connector	Brake Connector
Pin	170362-1	170361-1	170361-2
Plastic shell	AMP172159-1	AMP172161-1	AMP172157-1

Connector Code Of Motor Side			
Type	Winding Connector	Encoder Connector	Brake Connector
Pin	170360-1	170359-1	170360-1
Plastic shell	AMP172167-1	AMP172169-1	AMP172165-1

