



ELM1/ELM2 Series

AC Servo Motors

Feature:

Power rating: 30W-22kW

Voltage: 220VAC/400VAC

Encoder: 23-bit encoder

Optional accessory: brake

Frame size: 25mm,40mm,60mm,80mm,100mm,130mm,180mm,200mm.

o ELM1 Series

23-Bit magnetic encoder
Power: 50W-1800W

o ELM2 Series

23-Bit optical encoder
Power: 30W-22kW

Part Numbers

ELM2 H - 0850 L D 130 E T - H

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(1) Series Num

ELM1ELM1 Series servo motor

ELM2ELM2 Series servo motor

(2) Inertia Ratio

L Low

M Medium

H High

(3) Rated Output Power

0030 30W 0050 50W

0100 100W 0200 200W

0400 400W 0750 750W

0850 850W 1300 1300W

1800 1800W 1500 1500W

2000 2000W 2900 2900W

3000 3000W 3800 3800W

4000 4000W 4400 4400W

5000 5000W 7000 7000W

7500 7500W 11000 11000W

15000 15000W 18500 18500W

22000 22000W

(4) Encoder Type

L 23-bit optical multi-turn

P 21-bit optical multi-turn

M 23-bit magnetic multi-turn

N 26-bit optical multi-turn

F 17-bit magnetic

D 17-bit optical

(9) Connect type

Blank Direct connector

H Aviation connector-H

(8) Voltage

Blank 220VAC

T 400VAC

(7) Motor Type

E With brake, oil seal

F No brake, oil seal

(6) Frame Size

25 25mm

40 40mm

60 60mm

80 80mm

100 100mm

130 130mm

180 180mm

200 200mm

(5) Rated Speed

A 3000rp B 2500rp

C m D m

E 2000rp 1500rp

m

m

1000rp

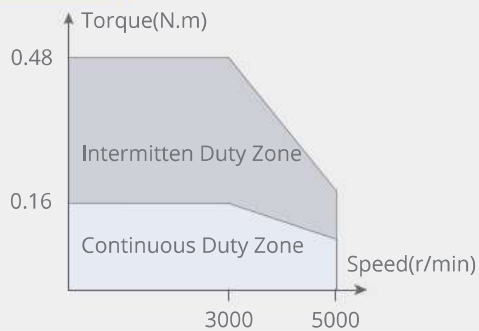
m

40mm Frame size & 50W~100W

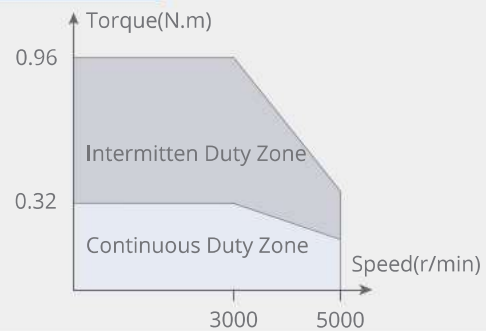
Type Name	Frame Size (mm)	Brake	Voltage (VAC)	Power (W)	Speed		Torque		Current		Permissible load to shaft		Encoder	Inertia (kgm²*10-4)	Weight (kg)
					Rated	Max	Rated	Max	Rated	Max	Radial	Axial			
ELM1H-0050MA40E	40	√	220	50	3000	5000	0.16	0.48	0.93	2.88	78	54	23-bit magnetic encoder	0.046	0.44
ELM1H-0050MA40F		×												0.036	0.28
ELM1H-0100MA40E		√		100			0.32	0.96	0.92	2.85				0.072	0.54
ELM1H-0100MA40F		×												0.062	0.38
ELM2H-0050LA40E		√		50			0.16	0.48	0.93	2.88			23-bit optical encoder	0.046	0.44
ELM2H-0050LA40F		×												0.036	0.28
ELM2H-0100LA40E		√		100			0.32	0.96	0.92	2.85				0.072	0.54
ELM2H-0100LA40F		×												0.062	0.38

Speed-Torque characteristics

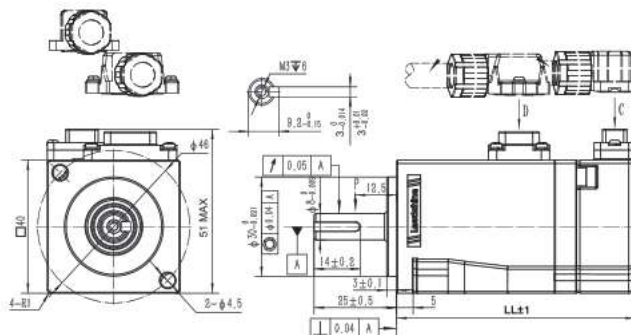
50W Motor



100W Motor



Dimensions

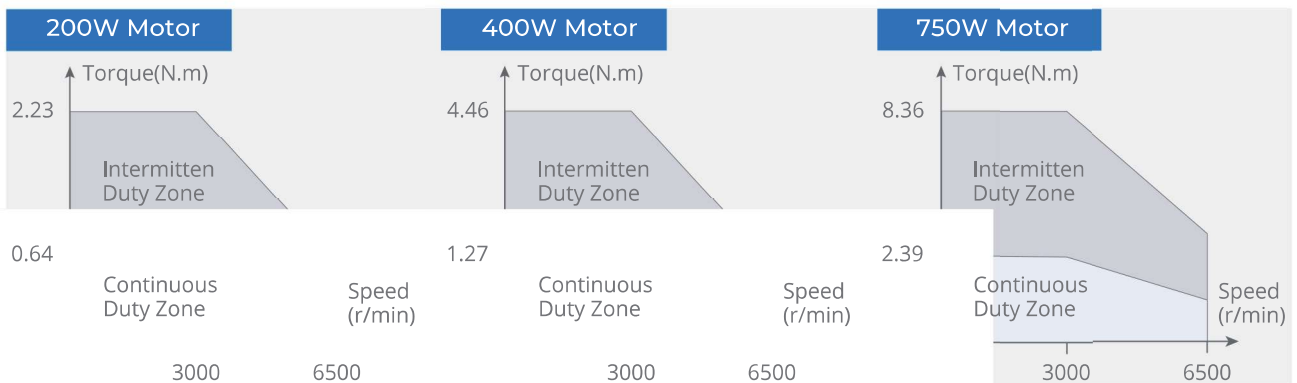


Motor model	LL
ELM*H-0050*A40E	84
ELM*H-0050*A40F	56.7
ELM*H-0100*A40E	95
ELM*H-0100*A40F	67.7

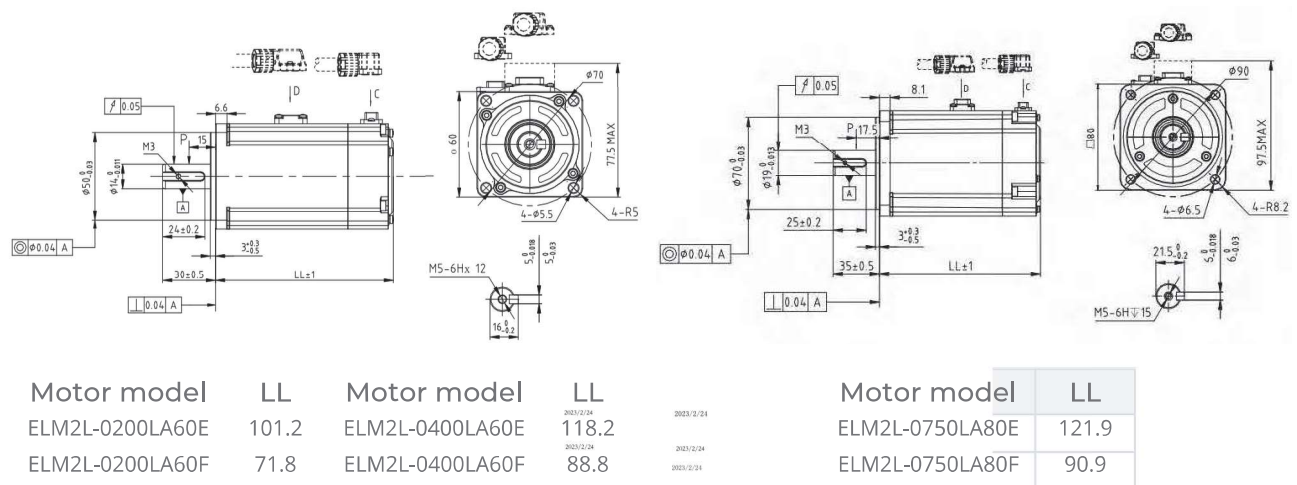
200W~750W

Type Name	Frame Size (mm)	Brake	Voltage (VAC)	Power (W)	Speed		Torque		Current		Permissible load to shaft		Encoder	Inertia (kgm ² *10-4)	Weight (kg)
					(rpm)		(Nm)		(Arms)		(N)				
					Rated	Max	Rated	Max	Rated	Max	Radial	Axial			
ELM2L-0200LA60E	60	✓	220	200	3000	6500	0.64	2.23	1.5	5.7	245	74	23-bit optical encoder	0.15	1.2
ELM2L-0200LA60F		×												0.14	0.85
ELM2L-0400LA60E		✓		400			1.27	4.46	2.4	9.1				0.26	1.54
ELM2L-0400LA60F		×												0.25	1.19
ELM2L-0750LA80E	80	✓		750			2.39	8.36	4.2	16.1	392	147		0.79	2.74
ELM2L-0750LA80F		×												0.77	2.12

Speed-Torque characteristics



Dimensions

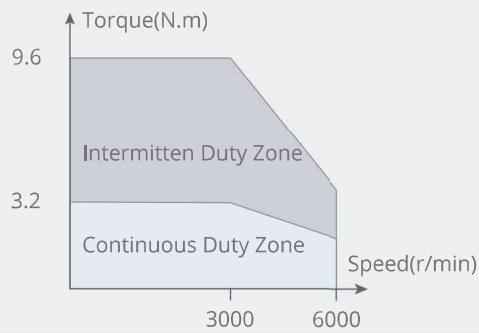


100mm Frame size & 1000W~1500W

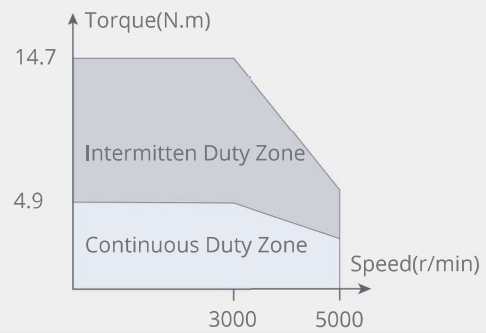
Type Name	Frame Size (mm)	Brake	Voltage (VAC)	Power (W)	Speed (rpm)		Torque (Nm)		Current (Arms)		Permissible load to shaft (N)		Encoder	Inertia (kgm ² *10-4)	Weight (kg)
					Rated	Max	Rated	Max	Rated	Max	Radial	Axial			
ELM2L-1000LA100E-H	100	√	220	1000	6000	3.2	9.6	6.5	19.5	490	98	23-bit optical encoder	2.63	5.9	
ELM2L-1000LA100F-H		×											2.43	4.6	
ELM2L-1500LA100E-H		√		1500	5000	4.9	14.7	8	25.5				3.803	7.1	
ELM2L-1500LA100F-H		×											3.503	5.8	

Speed-Torque characteristics

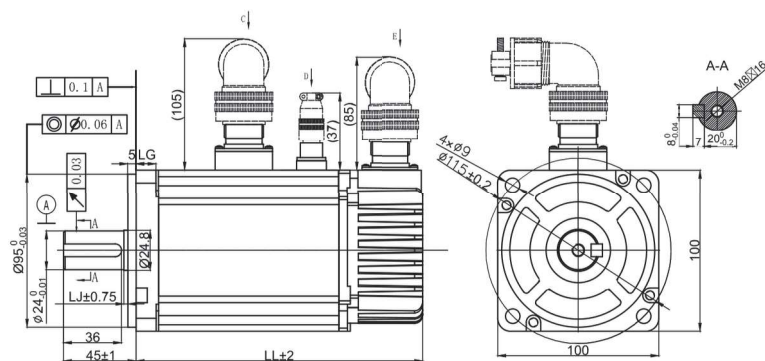
1000W Motor



1500W Motor

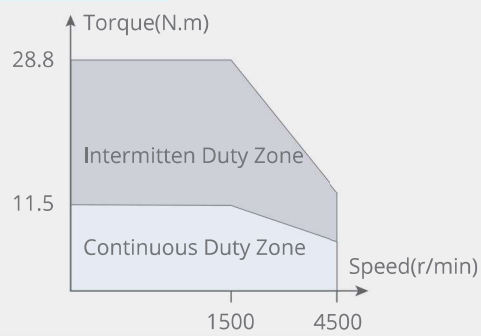


Dimensions

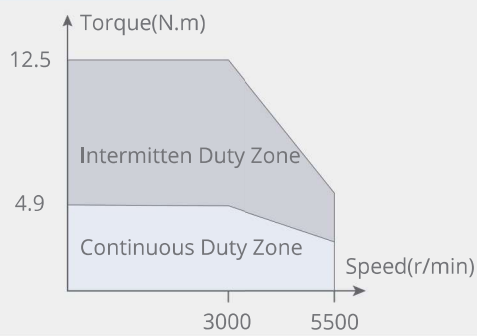


Motor model	LL
ELM2L-1000LA100E-H	194
ELM2L-1000LA100F-H	154
ELM2L-1500LA100E-H	218
ELM2L-1500LA100F-H	178

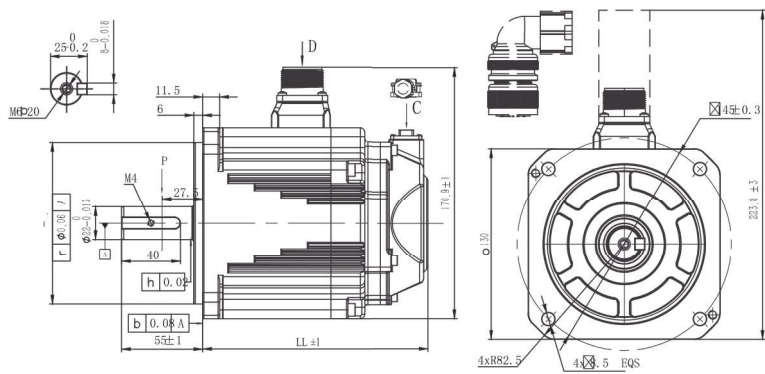
1800W Motor



1500W Motor



Dimensions



Motor model	LL
ELM*H-0850*D130E-H	153.5
ELM*H-0850*D130F-H	126
ELM*H-1300*D130E-H	171.5
ELM*H-1300*D130F-H	144
ELM*H-1800*D130E-H	189.5
ELM*H-1800*D130F-H	162
ELM1M-1500*A130E-H	153.5
ELM1M-1500*A130F-H	126

Peak Speed (rpm)

Resistance (Ω)

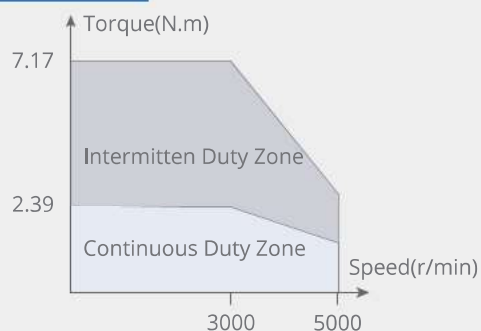
400
VAC

80mm Frame size & 750W~1000W

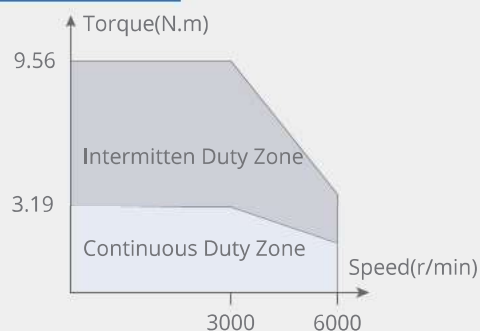
Type Name	Frame Size (mm)	Brake	Voltage (VAC)	Power (W)	Speed (rpm)		Torque (Nm)		Current (Arms)		Permissible load to shaft (N)		Encoder	Inertia (kgm ² *10 ⁻⁴)	Weight (kg)		
					Rated	Max	Rated	Max	Rated	Max	Radial	Axial					
ELM2H-0750LA80ET	80	√	400	750	3000	5000	2.39	7.17	2.7	8.8	392	147	23-bit optical encoder	1.65	2.7		
ELM2H-0750LA80F T		×												1.5	2.12		
ELM2H-1000LA80ET		√		1000		5000	3.18	9.54	4	12.4				2.15	3.4		
ELM2H-1000LA80F T		×												2.0	2.8		

Speed-Torque characteristics

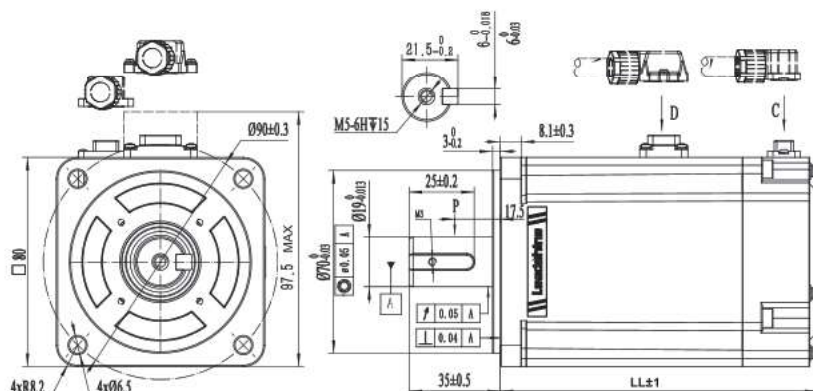
750W Motor



1000W Motor

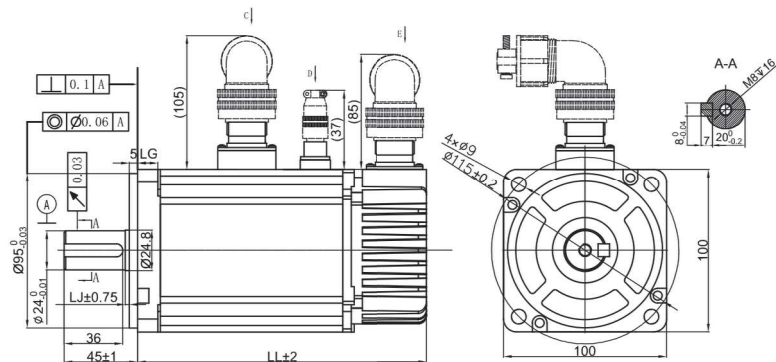


Dimensions



Motor model	LL
ELM2H-0750LA80ET	121.9
ELM2H-0750LA80F T	90.9
ELM2H-1000LA80ET	134.9
ELM2H-1000LA80F T	103.9

Dimensions

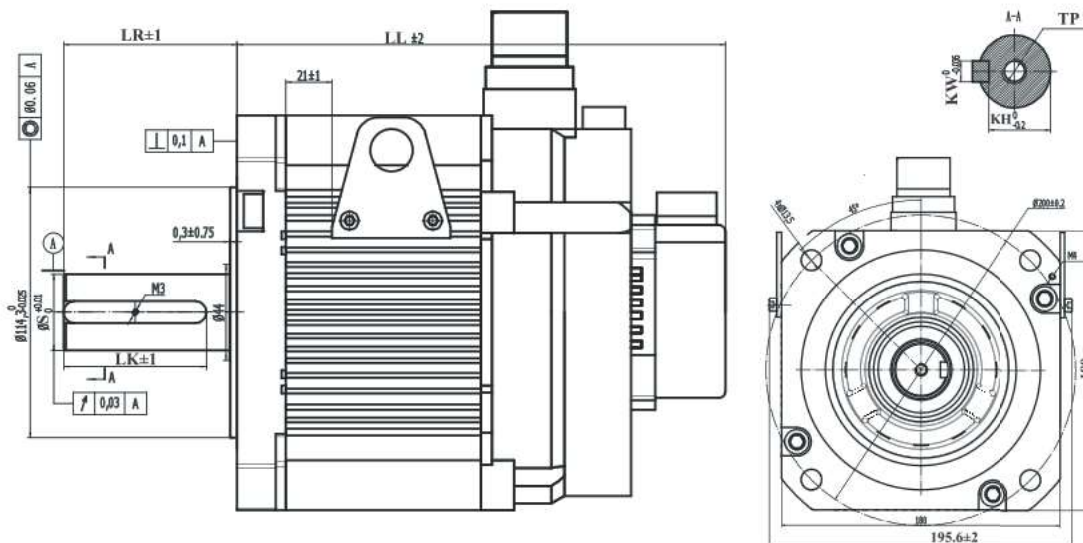


Motor model	LL	LG	LJ
ELM2L-1000LA100ET-H	194	12	2.5
ELM2L-1000LA100FT-H	154		
ELM2L-1500LA100ET-H	218		
ELM2L-1500LA100FT-H	178		
ELM2L-2000LA100ET-H	259	10	2.0
ELM2L-2000LA100FT-H	219		
ELM2L-2500LA100ET-H	285		
ELM2L-2500LA100FT-H	245		

130mm Frame size & 850W~3800W

Type Name	Frame Size (mm)	Brake	Voltage (VAC)	Power (W)	Speed (rpm)		Torque (Nm)		Current (Arms)		Permissible load to shaft (N)		Encoder	Inertia (kgm²*10-4)	Weight (kg)	
					Rated	Max	Rated	Max	Rated	Max	Radial	Axial				
ELM2H-0850LD130ET-H		√	400	850	1300	1500	4500	8.34	23.8	4.6	13.8	343	686	23-bit optical encoder	14.8	6.9
ELM2H-0850LD130F T-H		×													12.5	5.5
ELM2H-1300LD130ET-H		√													21	8.6
ELM2H-1300LD130F T-H		×													18.7	7.3
ELM2H-1800LD130ET-H		√													26.1	10.2
ELM2H-1800LD130F T-H		×													23.8	8.8
ELM2M-3800LB130ET-H		√													27.7	14.8
ELM2M-3800LB130F T-H		×														11.7
ELM2L-3000LA130ET-H	130	√	400	3000	3000	6000	12.6	37.8	13	39	\	\	23-bit optical encoder	11.3	13.25	
ELM2L-3000LA130FT-H		×												9.6	11.55	
ELM2L-4000LA130ET-H		√												13.1	15.2	
ELM2L-4000LA130F T-H		×												11.4	13.5	
ELM2L-5000LA130ET-H		√												15.6	16.7	
ELM2L-5000LA130F T-H		×												13.9	15	

Dimensions



Motor model	LL	LR	LK	S	KW	TP	KH
ELM2M-2900LD180ET-H	241						
ELM2M-2900LD180FT-H	193						
ELM2M-4400LD180ET-H	271						
ELM2M-4400LD180FT-H	223	79	65	35	10	M12×25	30

Motor model	LL	LR	LK	S	KW	TP	KH
ELM2M-5500LD180ET-H	291						
ELM2M-5500LD180FT-H	243						
ELM2M-7500LD180ET-H	331						
ELM2M-7500LD180FT-H	283	113	96	42		12 M16×32	37

200mm Frame size & 11000W~22000W

Type Name	Frame Size (mm)	Brake Voltage (V)	Vmax (V)	Power (W)	Speed (rpm)		Torque (Nm)		Current (Arms)		Encoder	Inertia (kgm ² *10-4)	Weight (kg)
					Rated	Max	Rated	Max	Rated	Max			
ELM2M-11000LD200ET-H	200	√	400	11000	1500	1800	70	140	21.4	42.8	23-bit optical encoder	81	59
ELM2M-11000LD200FT-H		×										75	51
ELM2M-15000LD200ET-H		√		15000			96	144	30	45		120	75
ELM2M-15000LD200FT-H		×										114	67
ELM2M-18500LD200ET-H		√		18500			118	177	35	52.5		137	80
ELM2M-18500LD200FT-H		×										131	75
ELM2M-22000LD200ET-H		√		22000			140	210	42.8	64.2		151	88
ELM2M-22000LD200FT-H		×										145	83

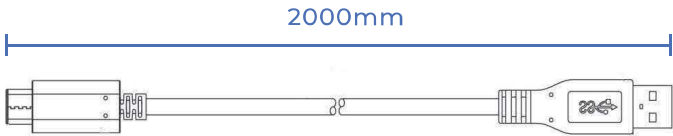
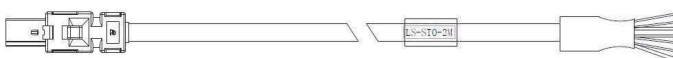
Cable Selection

The cables which are available for our EL6/EL7/EL8 series AC servo drives and ELM1 & ELM2 AC servo motors are listed in detail in this section including a comprehensive guide on how to match the right cables to the drives and motors.

For our EL6/EL7/EL8 series AC servo drives, an USB Type-C tuning cable is optionally provided to connect the drives to a PC for tuning purposes. Any USB Type-C to Type-A data cable can handle the same task. Ethernet cables are also available for communications between drives and controllers. Safe Torque Off STO cable (2 meters) is included with every purchase of our EL6/EL7/EL8 Series AC servo drives.

Motor power supply cables (including motor brake cables) and encoder cables are matched with our ELM1 and ELM2 series AC servo motors. The cables are matched to the servo motors based on motor series and frame sizes.

Servo Drive Cables

Tuning Cable	EL8-Series EL7-RSP Series EL7-ECN Series EL6-RSP Series	CABLE-TYPEC2M0	
	EL7-ECF series	CABLE-USB1M5	
	EL6-CAN series	CABLE-L6TS1M5	
Communication cable		CABLE-TX*M*-BUS	 <i>*M*represents the length of the cables. For example, 1M5 = 1.5 meters Available length: 0.2M, 0.5M, 1.0M, 1.5M, 3M, 5M, 7M, 10M, 13M</i>
Safe Torque Off STO cable		CABLE-STOH*M*	 <i>*M*represents the length of the cables. For example, 1M5 = 1.5 meters Available length: 0.2M, 1.0M, 1.5M, 2M, 3M, 5M</i>

Encoder cable model number

CABLE BMA H 3M0 - 113 - T - R

Sign	Meaning
CABLE	Cable identification

Sign	Cable type
BM	Incremental encoder cable
BMA	Absolute encoder cable (Including Battery Kit)

Sign	Voltage
H	AC Servo motor cable
D	DC Servo motor cable

Sign	Length	Sig	Lengt
1M5	1.5 meter	n	h
3M0	3 meter	13M0	13 meter
5M0	5 meter	15M0	15 meter
7M0	7 meter	***	Please contact leadshine teams for other lengths
10M0	10 meter		

Sign	Drive side terminal type
1	1394-6P Connector
2	MOLEX Connector

Sign	Customized models
R	Direct plug for back-facing wiring
***	Customized

Sign	Special requirements
Blank	Fixed cable
T	flexible cable
TS	flexible & oil proof cable
***	Reserved

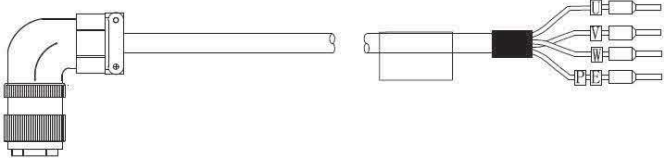
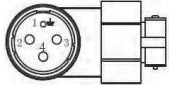
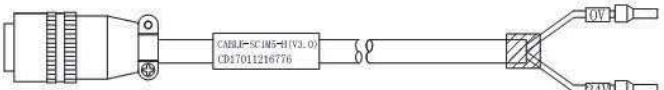
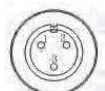
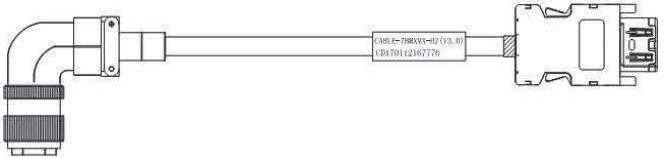
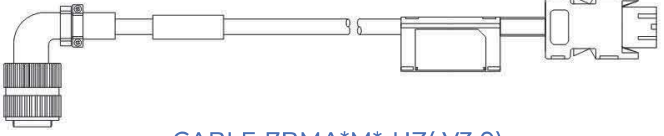
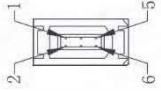
Sign	Motor side terminal type
1	AMP plastic plug
2	Reserved
3	Assembly type aviation plug
4	Terminal type direct plug
***	Reserved

Sign	Cable specifications
1	2PX24AWG
2	3PX24AWG
3	2PX26AWG
4	3PX26AWG
5	Reserved

ELM2 Series - 100&130mm

- o Frame size:100mm/130mm
- o Power rating:1000W/1500W/2000W/2500W/3800W



Cable Type		Diagram	Pin		
Motor power		 CABLE-RZ*M*-H(V2.0)			
			1	Yellow	PE
			2	Red	U
			3	Green	V
Motor brake		 CABLE-SC*M*-H(V3.0)			
			1	Black	0V
			2	Red	24V
Motor encoder	Incremental	 CABLE-7BM*M*-HZ(V3.0)			
	Absolute	 CABLE-7BMA*M*-HZ(V3.0)			
			A	Terminal	B
			1	PE	-
			2	5V	1
			3	0V	2
			4	SD+	5
			5	SD-	6
			6*	BAT+	-
			7*	BAT-	-
			*Terminal 6 & 7 is to be connected to battery kit for absolute encoder		

ELM2 Series - 130mm

- o Frame size: 130mm
- o Power rating:
850W/1300W/1800W/3000W/4000W/5000W

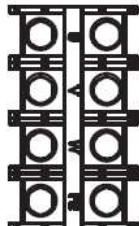
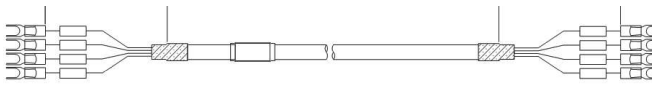
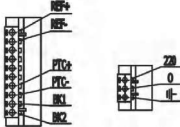
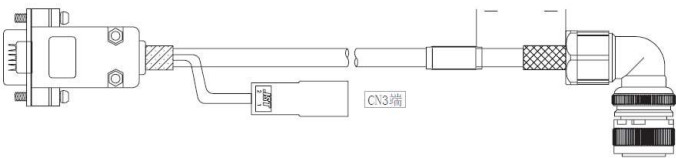


Cable Type		Diagram	Pin		
Motor power	With brake	 CABLE-RZSH*M*-135-TS			
	Without brake	 CABLE-RZH*M*-135-TS	A Blue U B Black V C Red W D Yellow Green PE 1* Black 0V 2* Red 24V *1&2 terminal for motor with brake		
Motor encoder	Incremental	 CABLE-BMH*M*-115-TS			
	Absolute	 CABLE-BMH*M*-125-TS			
	Battery kit	 ER14505 BOX-G DCH ROHS	A	Terminal	B
			10	PE	-
			2	5V	1
			3	0V	2
			4	SD+	5
			5	SD-	6
			6*	BAT+	-
			7*	BAT-	-
			*Terminal 6 & 7 is to be connected to battery kit for absolute encoder		

ELM2M Series – 200mm

- Frame size:200mm
- Power rating:11000W-22000W



Cable Type		Diagram	Pin		
Motor power	11kw&15kw	 CABLE-RZH*M*-272			
	18.5kW-22kW	 CABLE-RZH*M*-292			
Motor brake		/			
			REF-	White	0V
			REF+	Red	24V
Motor encoder		 CABLE-BMH*M*-D20			
					
			A	Terminal	B
			1	PE	-
			2	5V	7
			3	0V	8
			4	SD+	1
			5	SD-	2
			6*	BAT+	-
			7*	BAT-	-
			8	PTC+	9
			9	PTC-	5
*Terminal 6 & 7 is to be connected to battery kit for absolute encoder					

EL7 Series

Frame Size (mm)	Rated Power (W)	Motor Model	Matching Drive	Motor Length (mm)	Rated Torque (Nm)	Rated/Max Speed(rpm)	Inertia (kgm2*10 ⁻⁴)	Motor Cable	Encoder cable	Brake Cable
40	50W (220V)	ELM2H-0050LA40F	EL7-RS400P EL7-EC400F EL7-EC400N EL7-PN400F	56.7	0.16	3000/5000	0.036	CABLE-RZH*M*-114-TS- (R) 【without brake】 CABLE-RZSH*M*-114-TS- (R) 【with brake】 (Add "R" after the model for back facing motor wiring)	CABLE-BMH*M*-114-TS- (R) 【Incremental】 CABLE-BMH*M*-124-TS- (R) 【Absolute】 +ER14505 BOX-G (Battery Kit) (Add "R" after the model for back facing motor wiring)	If you need brake cable, please select power cable with brake in the power cable column.
		ELM2H-0050LA40E		84			0.046			
	100W (220V)	ELM2H-0100LA40F		67.7	0.32	3000/5000	0.062			
		ELM2H-0100LA40E		95			0.072			
60	200W (220V)	ELM2H-0200LA60F		71.6	0.64	3000/5000	0.28			
		ELM2H-0200LA60E		101.1			0.3			
	400W (220V)	ELM2H-0400LA60F		88.8	1.27	3000/5000	0.6			
		ELM2H-0400LA60E		118.1			0.62			
80	750W (220V)	ELM2H-0750LA80F	EL7-RS750P EL7-EC750F	90.9	2.39	3000/5000	1.8			
		ELM2H-0750LA80E	EL7-EC750N EL7-PN750F	121.9			1.95			
	1000W (220V)	ELM2H-1000LA80F	EL7-RS1000P EL7-EC1000F	103.9	3.18	3000/5000	2			
		ELM2H-1000LA80E	EL7-EC1000N EL7-PN1000F	134.9			2.15			
	750W (380V)	ELM2H-0750LA80FT	EL7-RS750PT EL7-EC750FT	90.9	2.39	3000/5000	2.12			
		ELM2H-0750LA80ET	EL7-EC750NT EL7-PN750FT	121.9			2.7			
100	1000W (220V)	ELM2L-1000LA100F-H	EL7-RS1000P EL7-EC1000F	154	3.2	3000/6000	2.43	CABLE-RZ*M*M*-H (V1.1) 【Fixed cable】 CABLE-RZ*M*M*-H (V2.0) 【Flexible cable】	CABLE-7BM*M*-HZ (V3.0) 【Incremental】 CABLE-7BMA*M*-HZ (V3.0) 【Absolute】	CABLE-SC*M*-H (V3.0)
		ELM2L-1000LA100E-H	EL7-EC1000N EL7-PN1000F	194			2.63			
	1500W (220V)	ELM2L-1500LA100F-H	EL7-RS1500P EL7-EC1500N	178	4.9	3000/5000	3.503			
		ELM2L-1500LA100E-H	EL7-PN1500F	218			3.803			
130	850W (220V)	ELM2H-0850LD130F-H	EL7-RS1000P EL7-EC1000F	126	5.39	1500/4500	12.5	CABLE-RZH*M*-135-TS 【without brake】 CABLE-RZSH*M*-135-TS 【with brake】	CABLE-BMH*M*-115-TS 【Incremental】 CABLE-BMH*M*-125-TS 【Absolute】 +ER14505 BOX-G (Battery Kit)	If you need brake cable, please select power cable with brake in the power cable column.
		ELM2H-0850LD130E-H	EL7-EC1000N EL7-PN1000F	153.5			8.34			
	1300W (220V)	ELM2H-1300LD130F-H	EL7-RS1500P EL7-EC1500N	144	8.34		18.7			
		ELM2H-1300LD130E-H	EL7-PN1500F	171.5			21			
	1800W (220V)	ELM2H-1800LD130F-H	EL7-RS2000P EL7-EC2000N	162	11.5	1500/3000	23.8			
		ELM2H-1800LD130E-H	EL7-PN2000F	189.5			26.1			

EL6 Series

Frame Size (mm)	Rated Power (W)	Motor Model	Matching Drive	Motor Length (mm)	Rated Torque (Nm)	Rated/Max Speed(rpm)	Inertia (kgm ² *10 ⁻⁴)	Motor Cable	Encoder cable	Brake Cable
40	50W (220V)	ELM2H-0050LA40F	EL6-RS400P EL6-CAN400Z	56.7	0.16	3000/5000	0.036	CABLE-RZH*M*-114-TS- (R) 【without brake】 CABLE-RZSH*M*-114-TS- (R) 【with brake】 (Add "R" after the model for back facing motor wiring)	CABLE-BMH*M*-114-TS 【Incremental】 CABLE-BMH*M*-124-TS- (R) 【Absolute】 +ER14505 BOX-G (Battery Kit) (Add "R" after the model for back facing motor wiring)	If you need brake cable, please select power cable with brake in the power cable column.
		ELM2H-0050LA40E		84			0.046			
	100W (220V)	ELM2H-0100LA40F		67.7	0.32	3000/5000	0.062			
		ELM2H-0100LA40E		95			0.072			
60	200W (220V)	ELM2H-0200LA60F	EL6-RS400P EL6-CAN400Z	71.6	0.64	3000/5000	0.28	CABLE-RZH*M*-114-TS- (R) 【without brake】 CABLE-RZSH*M*-114-TS- (R) 【with brake】 (Add "R" after the model for back facing motor wiring)	CABLE-BMH*M*-114-TS 【Incremental】 CABLE-BMH*M*-124-TS- (R) 【Absolute】 +ER14505 BOX-G (Battery Kit) (Add "R" after the model for back facing motor wiring)	If you need brake cable, please select power cable with brake in the power cable column.
		ELM2H-0200LA60E		101.1			0.3			
	400W (220V)	ELM2H-0400LA60F		88.8	1.27	3000/5000	0.6			
		ELM2H-0400LA60E		118.1			0.62			
80	750W (220V)	ELM2H-0750LA80F	EL6-RS750P EL6-CAN750Z	90.9	2.39	3000/5000	1.8	CABLE-RZH*M*-114-TS- (R) 【without brake】 CABLE-RZSH*M*-114-TS- (R) 【with brake】 (Add "R" after the model for back facing motor wiring)	CABLE-BMH*M*-114-TS 【Incremental】 CABLE-BMH*M*-124-TS- (R) 【Absolute】 +ER14505 BOX-G (Battery Kit) (Add "R" after the model for back facing motor wiring)	If you need brake cable, please select power cable with brake in the power cable column.
		ELM2H-0750LA80E		121.9			1.95			
	1000W (220V)	ELM2H-1000LA80F	EL6-RS1000P EL6-CAN1000Z	103.9	3.18	3000/5000	2			
		ELM2H-1000LA80E		134.9			2.15			
100	1000W (220V)	ELM2L-1000LA100F-H	EL6-RS1000P EL6-CAN1000Z	154	3.2	3000/6000	2.43	CABLE-RZ*M*-H (V1.1) 【Fixed cable】 CABLE-RZ*M*-H (V2.0) 【Flexible cable】	CABLE-7BM*M*-HZ (V3.0) 【Incremental】 CABLE-7BMA*M*-HZ (V3.0) 【Absolute】	CABLE-SC*M*-H (V3.0)
		ELM2L-1000LA100E-H		194			2.63			
130	850W (220V)	ELM2H-0850LD130F-H	EL6-RS1000P EL6-CAN1000Z	126	5.39	1500/4500	12.5	CABLE-RZH*M*-135-TS 【without brake】 CABLE-RZSH*M*-135-TS 【with brake】	CABLE-BMH*M*-114-TS 【Incremental】 CABLE-BMH*M*-124-TS- (R) 【Absolute】 +ER14505 BOX-G (Battery Kit) (Add "R" after the model for back facing motor wiring)	If you need brake cable, please select power cable with brake in the power cable column.
		ELM2H-0850LD130E-H		153.5			14.8			



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