

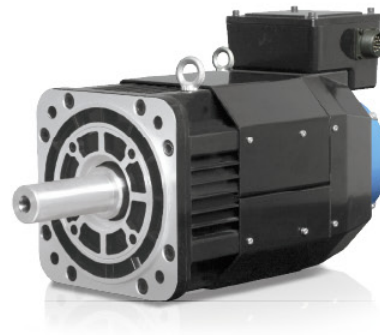
# EMB Model

## Features

- Power supply voltage: 400V
- Driving of feed shafts for various machinery
- Various models (7.5kW~22kW, with brake, etc.)
- Mounted with 17 bits absolute encoder, resolver is optional
- Temperature sensor

## Application

- Machine tools
- Handling machinery
- Food processing machinery
- Textile machinery



## Specification Description

**EMB-1E D S A 1 1**

EMB Model Servo Motor    Rated Output Power    Power Voltage    Encoder    Designing Sequence    Shaft End    Option Parts

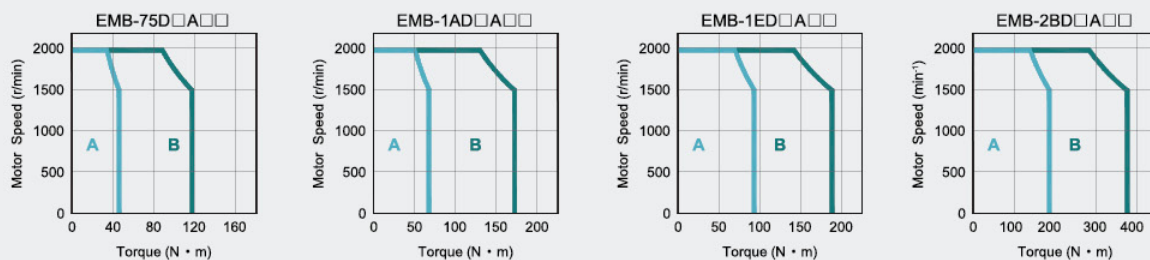
Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.
75	7.5kW	D	400VAC	S	Absolute Encoder: 131072P/R	A	Designing Sequence	1	Flat, Without Keys	1	None
1A	11.0kW			R	Resolver			2	Flat, With Keys With Screw Thread	2	With Oil Seal
1E	15.0kW								3	With Brake (DC24V)	
2B	22.0kW								4	With Oil Seal, With Brake (DC24V)	

## Rated Value and Specification

Voltage		400VAC			
Servo Motor Model	EMB-	75D□A□□	1AD□A□□	1ED□A□□	2BD□A□□
Rated Output Power	kW	7.5	11.0	15.0	22.0
Rated Torque	N·m	47.8	70.0	95.5	140.0
Instantaneous Peak Torque	N·m	143.4	175	191	350
Rated Current	Arms	18.0	28.0	38.0	52.0
Instantaneous Max. Current	Arms	56.0	70.0	84.0	130
Rated Speed	r/min	1500			
Max. Speed	r/min	2000			
Rotor Moment of Inertia	$\times 10^{-4} \text{kg}\cdot\text{m}^2$	186.2 (193.6)	271.6 (278.9)	338.8 (346.1)	576.62
Brake Rated Voltage		DC24V $\pm$ 10%			
Brake Rated Power	W	90			
Brake Holding Torque	N·m	100			
Encoder	Standard	Absolute Encoder: 131072P/R			
	Options	Resolver			
Insulation Class		F			
Ambient Temperature		0 to +40°C (No freezing)			
Ambient Humidity		20% to 80% RH (Non-condensing)			
Vibration		24.5m/s <sup>2</sup>			
Enclosure		Totally Enclosed, Forced-air Cooling, IP44 ( Except for shaft opening, when not equipped with oil seal. ) IP20 for cooling fan			

Note: The values in parentheses are for servo motors with holding brakes.

## Torque-Speed Feature



A: Continuous Working Area    B: Repeatedly Working Area

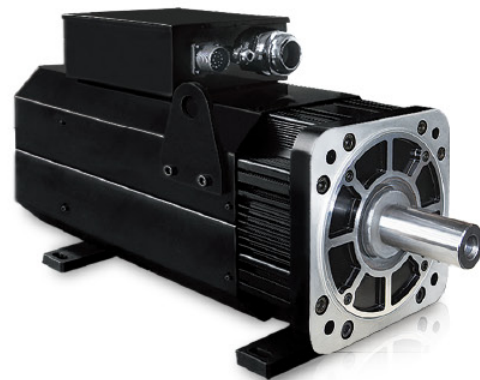
# EMB for Low Inertia Model

## Features

- Wider weak field speed governing range, better overload capability
- Made from high class permanent material, higher motor efficiency
- High performance of resolver
- Built-in high precision temperature sensor
- Customization is available

## Application

- Injection molding machine



## Specification Description

**EMB – 1Z**

EMB for Low Inertia Model Servo Motor

Rated Output Power

**D**

Voltage

**R**

Encoder

**A**

Designing Sequence

**2**

Shaft End

**1**

Option Parts

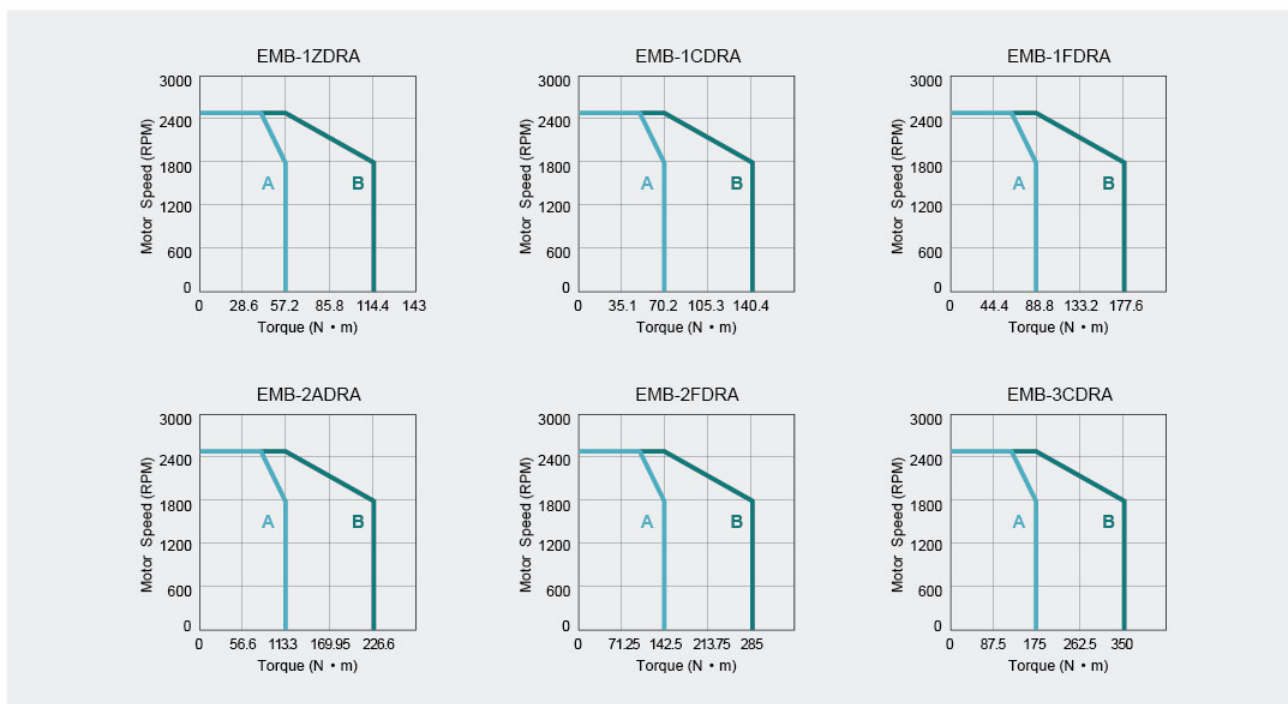
Custom-built

Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.		
1Z	10.8kW	D	400VAC	R	Resolver	A	Designing Sequence	1	Flat, Without Keys	1	None	00	With Baseplate (Omissible)
1C	13.2kW							2	Flat, With Keys, With Screw Thread	2	With Oil Seal	X X	Custom-built (Internal Code)
1F	16.7kW									3	With Brake(DC 24V)		
2A	21.4kW									4	With Oil Seal, With Brake (DC24V)		
2F	26.9kW												
3C	33kW												

## Rated Value and Specification

Voltage		400VAC					
Servo Motor		EMB-1ZDRA	EMB-1CDRA	EMB-1FDRA	EMB-2ADRA	EMB-2FDRA	EMB-3CDRA
Motor Rated Power	kW	10.8	13.2	16.7	21.4	26.9	33
Rated Torque	N·m	57.2	70.2	88.8	113.3	142.5	175
Instantaneous Peak Torque	N·m	114.5	140.4	177.5	226.5	285	350
Rated Current	Arms	22.5	27	34.5	47	60	72
Instantaneous Max. Current	Arms	45	54	69	94	120	144
Kt Value	N·m/A	2.54	2.6	2.57	2.41	2.38	2.43
Rated Speed	r/min	1800					
Max. Speed	r/min	2500					
Pole Number		8					
Rotor Moment of Inertia	$\times 10^{-4} \text{kg}\cdot\text{m}^2$	116	132	156	195	234	283
Encoder		Resolver					
Insulation Class		F					
Ambient Temperature		0 ~ +40°C (No freezing)					
Ambient Humidity		20% ~ 80% RH(Non-condensing)					
Vibration		24.5m/s <sup>2</sup>					
Enclosure		Totally enclosed, forced-air cooling, IP44(Except for shaft opening, when not equipped with oil seal), IP20 for cooling fan					

## Torque-Speed Feature



A: Continuous Working Area    B: Repeatedly Working Area

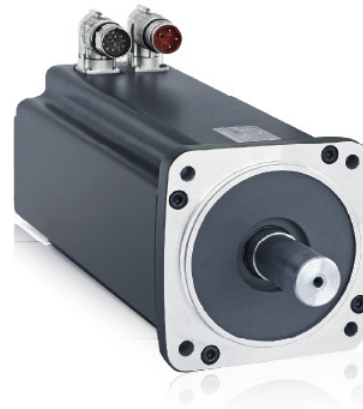
# EMS Model

## Features

- Low inertia
- Peak torque up to 300% of rated torque
- Various models (0.2kw~5kw, with brake, ect.)
- Run at speed of up to 4500~5000r/min
- Mounted 20 bits incremental / absolute encoder, Optional mounted Resolver
- European standard plug design

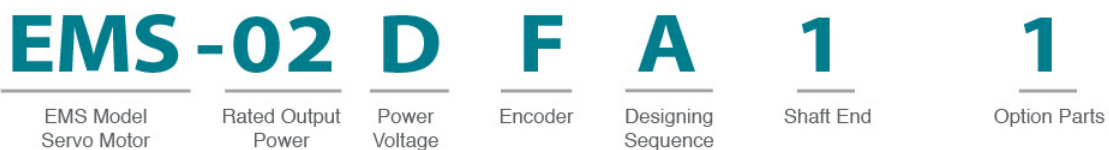
## Application

- SMM(surface mounting machine)
- PCB puncher machine
- Robot arm
- Handing machinery
- Textile machinery



## Specification Description

### Servomotor Model Designation



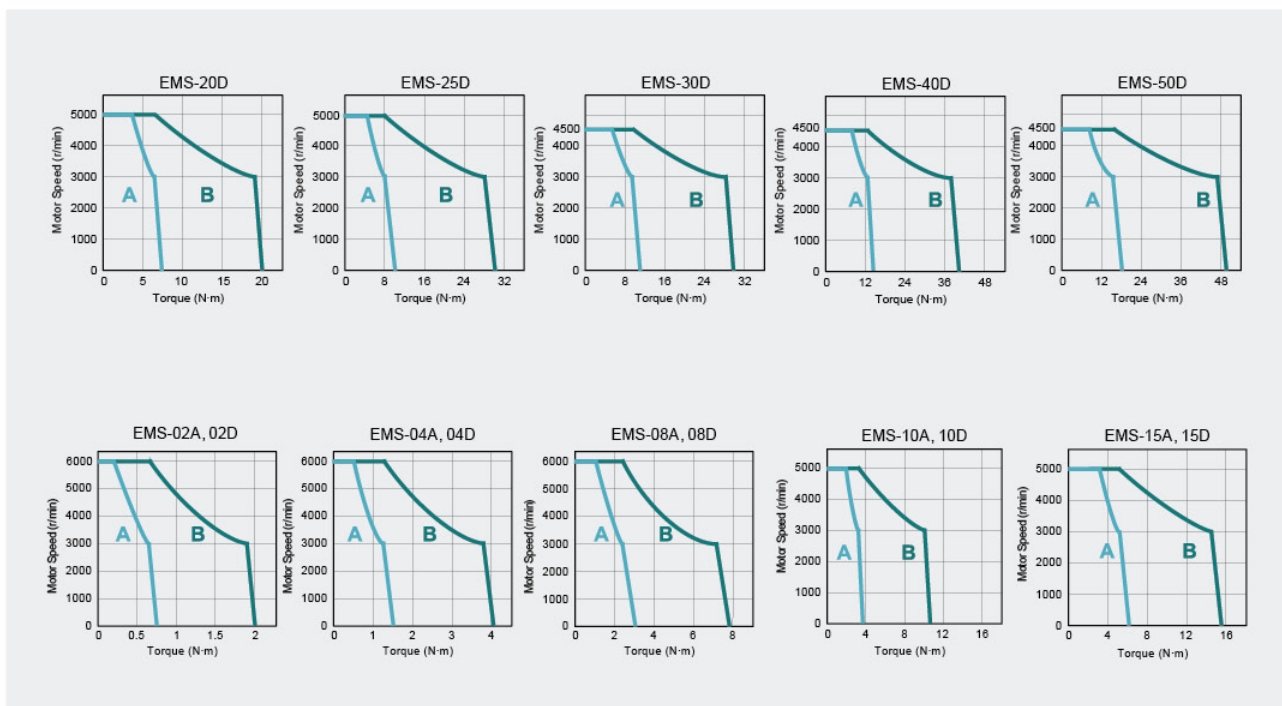
Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.	Sign	Spec.
02	0.2kW	A	200V	F	Incremental Encoder 20bit	A,B	Designing Sequence	1	Flat, Without Keys	1	None
04	0.4kW	D	400V	U	Multi Turn Absolute Encoder 20bit			2	Flat, With Keys With Screw Thread	2	With Seal
08	0.75kW									3	(DC24V)With Brake(DC24V)
10	1.0kW									4	With Seal, With Brake(DC24V)
15	1.5kW										
20	2.0kW										
25	2.5kW										
30	3.0kW										
40	4.0kW										
50	5.0kW										

## Ratings and Specification

Voltage		200VAC/400VAC									
Servo Motor Model	EMS-	02A□A□□	02D□A□□	04A□A□□	04D□A□□	08A□A□□	08D□A□□	10A□A□□	10D□A□□	15A□A□□	15D□A□□
Rated Output Power	kW	0.2	0.2	0.4	0.4	0.75	0.75	1	1	1.5	1.5
Rated Torque	N.m	0.64	0.64	1.27	1.27	2.39	2.39	3.18	3.18	4.9	4.9
Instantaneous Peak Torque	N.m	1.91	1.91	3.81	3.81	7.16	7.16	9.54	9.54	14.7	14.7
Rated Current	A	1.9	0.95	3.2	1.6	5.4	2.7	5.4	2.7	9.2	4.6
Instantaneous Max. Current	A	6	3	9.9	4.8	16.8	8.1	17	8.5	28	14
Rated Speed	min <sup>-1</sup>	3000									
Max. Speed	min <sup>-1</sup>	6000						5000			
Rotor Moment of Inertia	×10 <sup>-4</sup> kg·m <sup>2</sup>	0.19(0.23)		0.31(0.35)		1.32(1.44)		1.74(1.99)		2.00(2.25)	
Brake Rated Voltage		DC 24V±10%									
Brake Rated Power	W	7.2				11.5		17.6			
Brake Holding Torque	N·m	1.3				3.2		8			
Encoder	Standard	Incremental Encoder 20bit									
	Options	Absolute Encoder 20bit									
Insulation Class		F									
Ambient Temperature		0 to +40°C (no freezing)									
Ambient Humidity		20% to 80%RH (non-condensing)									
Enclosure		Totally Enclosed, self-cooled									
Protection class		IP65 (IP 54 std. and IP 65 with shaft sealing )									
Vibration		49m/s <sup>2</sup>									

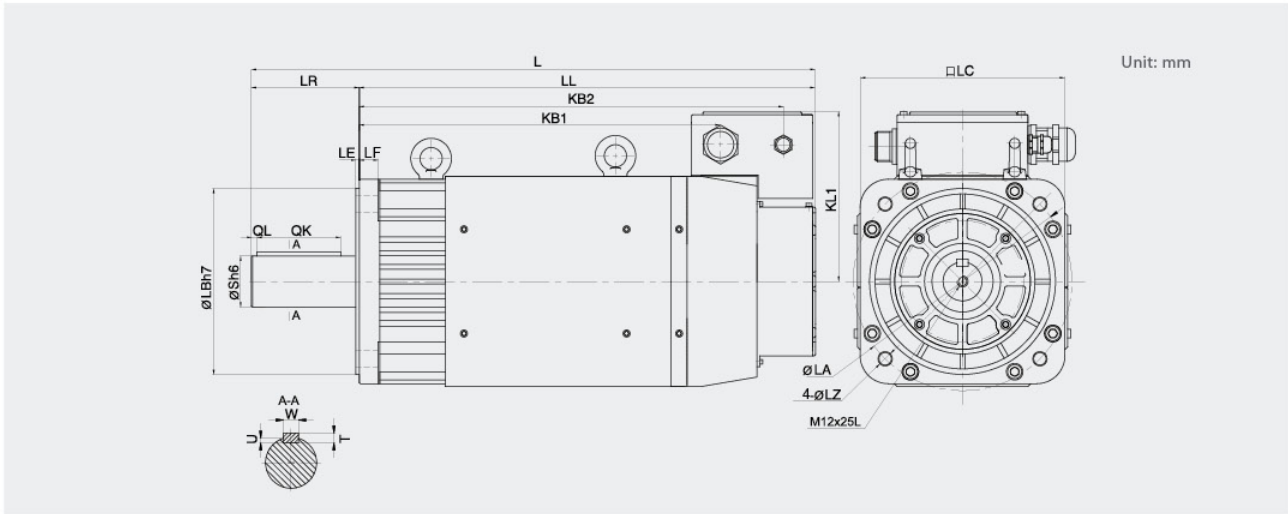
Voltage						
Servo Motor Model	EMS-	20D□A□□	25D□A□□	30D□A□□	40D□A□□	50D□A□□
Rated Output Power	kW	2	2.5	3	4	5
Rated Torque	N.m	6.36	8	9.8	12.6	15.8
Instantaneous Peak Torque	N.m	19.1	25	29.4	37.8	47.4
Rated Current	A	6	7.2	8.8	12.4	13.6
Instantaneous Max. Current	A	20	23	28	38	42
Rated Speed	min <sup>-1</sup>	3000				
Max. Speed	min <sup>-1</sup>	5000		4500		
Rotor Moment of Inertia	×10 <sup>-4</sup> kg·m <sup>2</sup>	2.47(2.82)	3.2(3.55)	7.00(7.35)	9.60(10.72)	12.3(13.42)
Brake Rated Voltage		DC 24V±10%				
Brake Rated Power	W	17.6		19.4		
Brake Holding Torque	N.m	8		16		
Encoder	Standard	Incremental Encoder 20bit				
	Options	Absolute Encoder 20bit, Resolver				
Insulation Class		F				
Ambient Temperature		0 to +40°C(no freezing)				
Ambient Humidity		20% to 80%RH(non-condensing)				
Enclosure		Totally Enclosed, self-cooled				
Protection class		IP65 (IP 54 std. and IP 65 with shaft sealing)				
Vibration		49m/s <sup>2</sup>				

## Torque-Speed Feature



A: Continuous Working Area B: Repeatedly Working Area

## EMB Dimension



Model EMB-	L	LL	KB2	KB1	KL1	Dimension							S	Tap×Depth	Key				
						LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
75D□□	530 (625)	414 (509)	366 (461)	302 (397)	184	116	4	20	220	235	200	13.5	42	M16×32L	90	6	12	8	5
1AD□□	580 (675)	464 (559)	416 (511)	352 (447)	184	116	4	20	220	235	200	13.5	42	M16×32L	90	6	12	8	5
1ED□□	615 (710)	499 (594)	451 (546)	387 (482)	184	116	4	20	220	235	200	13.5	55	M20×40L	90	6	16	10	6
2BD□□	720	572	523	432	250	145	5	30	280	300	250	19	60	M12×25L	128	6	18	11	7

Note: The dimension in parentheses are for servo motors with holding brakes.



### Encoder Connector Specification

- Receptacle: MS3102A20-29P
- Plug: MS3108B20-29S
- Cable Clamp: MS3057-12A

#### Absolute Encoder

Pin No.	Signal
K	S+
L	S-
T	BAT+
S	BAT-
H	PG5V
G	PG0V
J	FG

#### Resolver

Pin No.	Signal
K	SIN+
L	SIN-
T	COS+
S	COS-
H	R1
G	R2
J	FG
N	Sensor1
R	Sensor2

### Brake Connector Specification

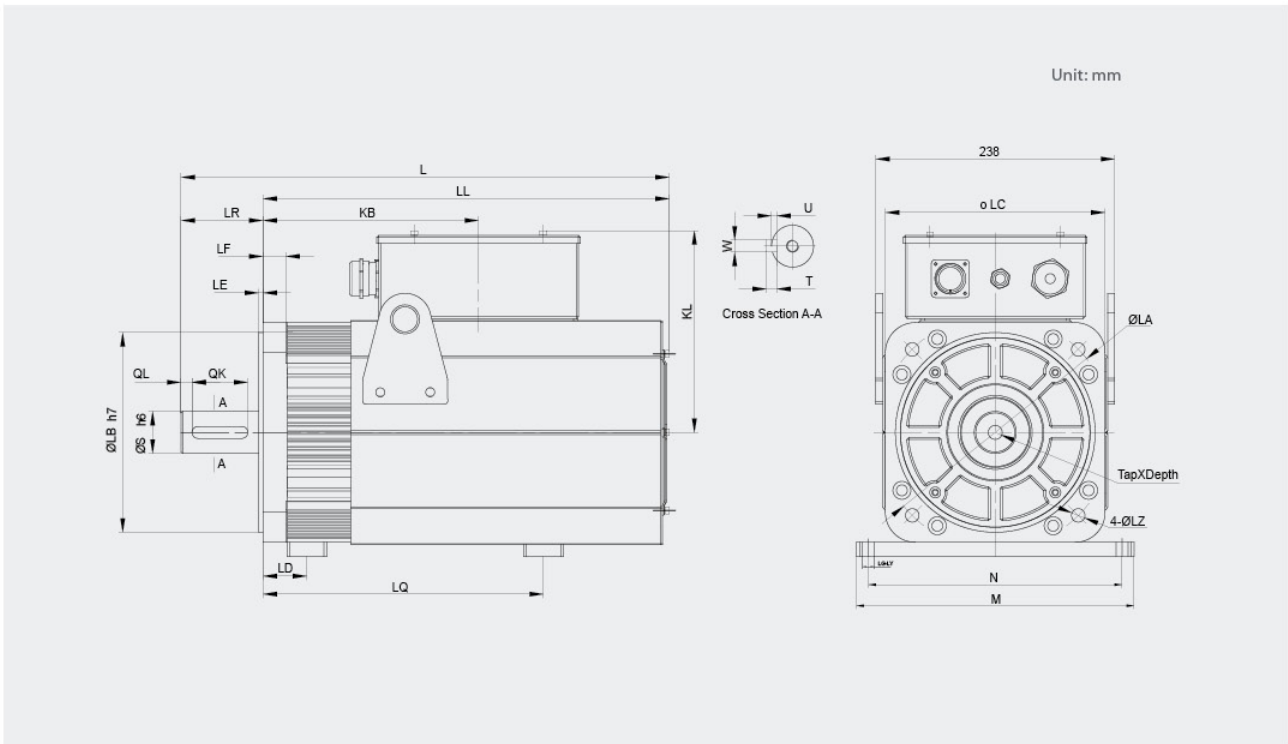
- Receptacle:  
MS3102A10SL-3P
- Plug:  
MS3106A10SL-3S
- Cable Clamp:  
MS3057-4A



Pin No.	Signal
A	B1
B	B2
C	-



EMB for Low Inertia Dimension



Model	L	LL	KB	KL	LG	LY	LR	LE	LF	LC	LA	LB	LZ	S	TapxDepth	Key						LD	LQ	
																QK	QL	W	T	U	M			N
EMB-3CDRA	679	597	406	202	4	∅12x24	82	4	23	220	235	200	13.5	42	M16x42	56	11	12	8	5	278	254	44	471
EMB-2FDRA	627	545	354	202	4	∅12x24	82	4	23	220	235	200	13.5	42	M16x42	56	11	12	8	5	278	254	44	419
EMB-2ADRA	574	492	301	202	4	∅12x24	82	4	23	220	235	200	13.5	42	M16x42	56	11	12	8	5	278	254	44	366
EMB-1FDRA	522	440	249	202	4	∅12x24	82	4	23	220	235	200	13.5	42	M16x42	56	11	12	8	5	278	254	44	314
EMB-1CDRA	489	407	216	202	4	∅12x24	82	4	23	220	235	200	13.5	42	M16x42	56	11	12	8	5	278	254	44	281
EMB-1ZDRA	469	387	196	202	4	∅12x24	82	4	23	220	235	200	13.5	42	M16x42	56	11	12	8	5	278	254	44	261



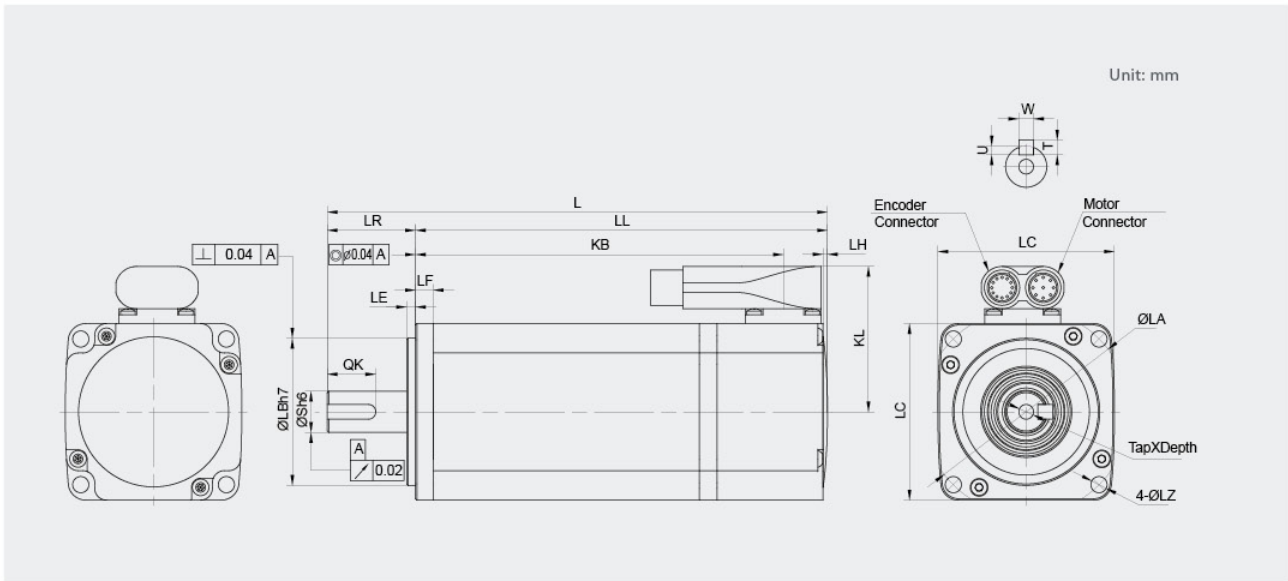
Encoder Connector Specification

- Receptacle: MS3102A20-29P
- Plug: MS3108B20-29S
- Cable Clamp: MS3057-12A

Resolver

Pin No.	Signal
K	SIN+
L	SIN-
T	COS+
S	COS-
H	R1
G	R2
J	FG
N	Sensor1
R	Sensor2

## EMS Dimension



Model EMS-	L	LL	KB	KL	Dimension								S	Tap×Depth	Key			
					LR	LE	LF	LC	LA	LB	LH	LZ			W	U	T	QK
02□F	135.5(170)	105.5(140)	90(125)	49	30	3	6	60	70	50	1.5	5.5	14	M5×8L	5	3	5	16.5
04□F	160.5(195)	130.5(165)	115.5(150)	49	30	3	6	60	70	50	1.5	5.5	14	M5×8L	5	3	5	16.5

Note: The dimensions in parentheses are for servo motors with holding brakes.

### Motor Connector Specification

- Receptacle: EEDA101NN00000001000
- Pin: 61.231.11 ( intercontec )



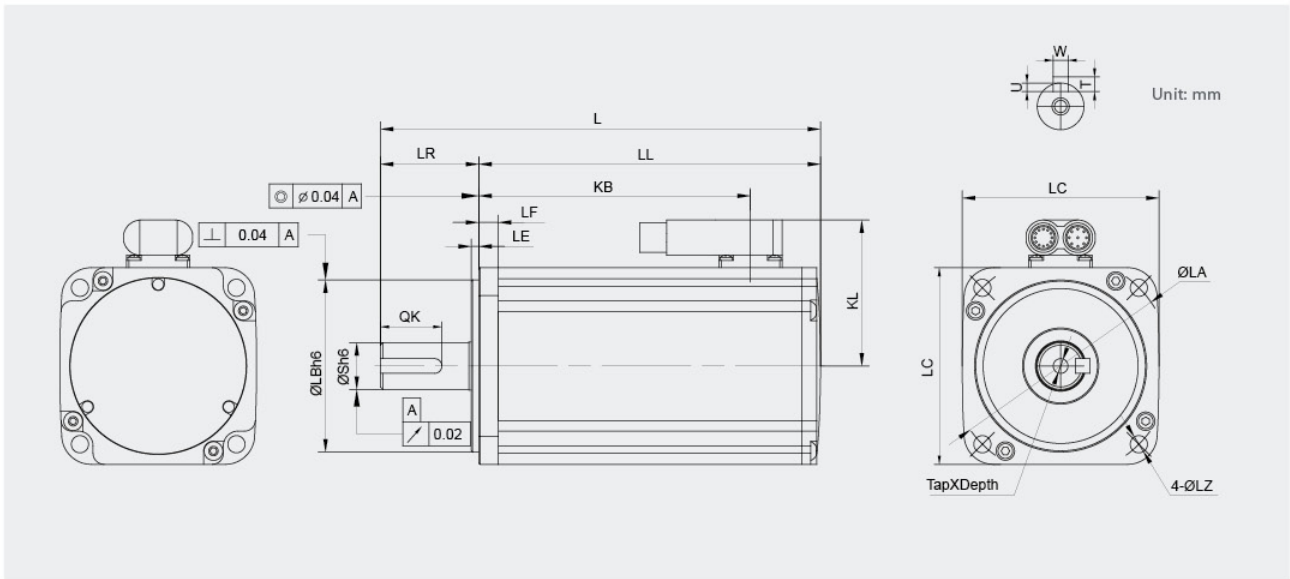
Pin No.	Signal
A	U
B	V
C	W
⊕	FG
1	B1
2	B2

### Encoder Connector Specification

- Receptacle: EEDA101NN00000001000
- Pin: 61.232.11 ( intercontec )



Pin No.	Signal
1	SD+
2	SD-
3	BAT+
4	BAT-
5	Vcc
6	Gnd
7	Sensor1
8	Sensor2
9	FG

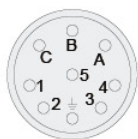


Model EMS-	L	LL	KB	KL	Dimension							S	TapxDepth	Key			
					LR	LE	LF	LC	LA	LB	LZ			W	U	T	QK
08□F	179(219)	139(179)	111.5(151.5)	59	40	3	8	80	90	70	7	19	M6x10L	6	3.5	6	25

Note: The dimensions in parentheses are for servo motors with holding brakes.

Motor Connector Specification

- Receptacle: EEDA101NN00000001000
- Pin: 61.231.11 (intercontec)



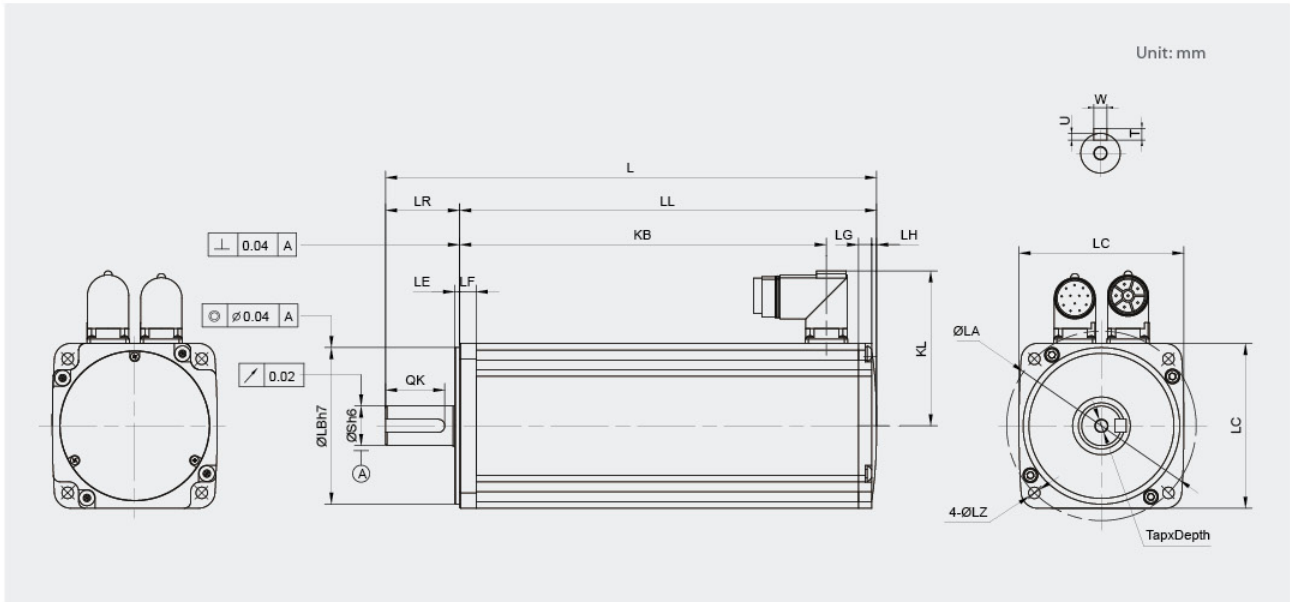
Pin No.	Signal
A	U
B	V
C	W
⊕	FG
1	B1
2	B2

Encoder Connector Specification

- Receptacle: EEDA101NN00000001000
- Pin: 61.232.11 (intercontec)



Pin No.	Signal
1	SD+
2	SD-
3	BAT+
4	BAT-
5	Vcc
6	Gnd
7	Sensor1
8	Sensor2
9	FG



EMS-	L	LL	KB	KL	Dimension									S	Key			
					LR	LE	LF	LC	LA	LB	LG	LH	LZ		W	U	T	QK
10□F	209(244)	164(199)	133.5(168.5)	94	45	3	10	100	115	95	8	3	7	24	8	4	7	36
15□F	220(263)	175(218)	144.5(187.5)	94	45	3	10	100	115	95	8	3	7	24	8	4	7	36
20□F	237(281)	192(236)	161.8(205.5)	94	45	3	10	100	115	95	8	3	7	24	8	4	7	36
25□F	260(300)	215(255)	184.5(224.5)	94	45	3	10	100	115	95	8	3	7	24	8	4	7	36
30□F	276(309.9)	213(246.9)	180.5(214.4)	109	63	6	14	130	145	110	9	3.5	9	28	8	4	7	54
40□F	313.5(347.4)	250.5(284.4)	218(251.9)	109	63	6	14	130	145	110	9	3.5	9	28	8	4	7	54
50□F	347.5(381.4)	284.5(318.4)	252(285.9)	109	63	6	14	130	145	110	9	3.5	9	28	8	4	7	54

Note: The dimensions in parentheses are for servo motors with holding brakes.

#### Motor Connector Specification

- Receptacle: MB1RJN0601
- Plug: MB1CKN0600
- Cableclamp: MB3CG-S2



Pin No.	Signal
1	U
2	V
4	W
⊖	FG
5	B1
6	B2

#### Encoder Connector Specification

- Receptacle: MA1RAE1201
- Plug: MA1CAP1200
- Cableclamp: MA3CG-S1



Pin No.	Signal
1	SD+
2	SD-
3	BAT+
4	BAT-
5	Vcc
6	Gnd
7	Sensor1
8	Sensor2
9	FG