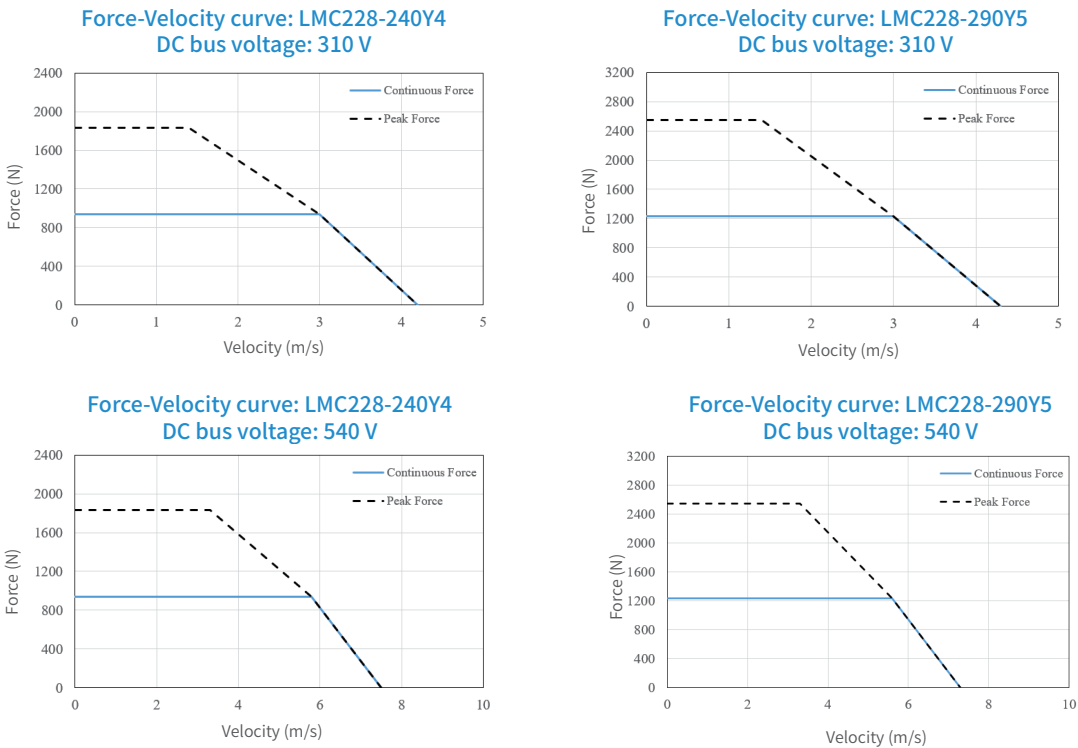


Motor Technical Parameters

Item	Sign	Unit	LMC228-240 Y4	LMC228-290 Y5
Rated Performance				
Continuous force @Tmax	Fc	N	938	1235
Peak force	Fp	N	1833	2547
Motor constant @25°C	Km	N/sqrt (W)	71.3	81.4
Max coil temp	Tmax	°C	120	120
Max cont. power diss	Pc	W	227.1	302.8
Electrical Specifications				
Winding topology			Y4	Y5
Continuous current @Tmax	Ic	Arms	12	16
Peak current	Ip	Arms	32	45
P-P resistance @25°C ±10%	RL-L	Ohms	0.9	0.7
P-P inductance±20%	LL-L	mH	11.4	9.1
P-P back EMF @25°C ±10%	KeL-L	V/m/s	68.1	68.1
Force constant @25°C ±10%	Kf	N/Arms	78.1	77.2
Electrical cycle time	Te	ms	12.7	13
Max bus voltage	Vbus	VDC	540	
Mechanical Specifications				
Rotor mass	Mc	kg	8.4	10.2
Magnetic stator mass	Mw	kg/m	8	
Magnetic pole pair pitch	Dp	mm	28	
Magnetic attraction	Fa	kN	4.3	5.4
Magnetic stator type	MALD1-135-112N, MALD1-135-168N, and MALD1-135-336N			

Motor Force-Velocity Characteristic Curves



Note: The 220 V drive is used for the 310 V DC bus voltage, whereas the 380 V drive is used for the 540 V DC bus voltage.

MP Precision Torque Motors

Motor Naming Rules

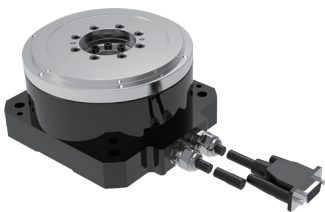
<u>M</u>	<u>P</u>	<u>1 - 112</u>	<u>F</u>	<u>10A</u>	<u>B - U3</u>	<u>1</u>	<u>3</u>	<u>X - INT</u>			
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
① Product family M: Motor	② Series code P: Precision torque motor	③ Product version 1: First generation 2: Second generation (upcoming)	④ Frame code 112: 112 mm diameter 175: 175 mm diameter	⑤ Basic structure S: Standard, cylindrical mounting flange F: Flange, rectangular mounting flange	⑥ Maximum output torque Consists of one letter and two digits (N · m) A: x 1 B: x 10 C: x 100 D: x 1000 E: x 10000 For example, 12A indicates 12 N · m. 45A indicates 45N · m.	⑦ Voltage class A: 110 V B: 220 V	⑧ Encoder type Consists of one digit and one letter U3: 23-bit single-turn absolute encoder	⑨ Mounting accuracy 1: Mechanical deviation less than 5 μm axially and radially 2: Mechanical deviation less than 10 μm axially and radially 3: Mechanical deviation less than 30 μm axially and radially	⑩ Connector type 3: 0.3 m direct lead wire from cable gland	⑪ Cooling method X: Natural cooling F: Air cooling L: Liquid cooling	⑫ -INT Global

Motor Technical Parameters

Motor Model	MP1-112F10AB-U313X-INT	MP1-175S11BB-U333X-INT
Continuous operating torque (N · m)	4.2	36
Maximum torque (N · m)	10.5	108
Continuous operating speed (rpm)	300	350
Maximum speed (rpm)	500	500
Motor resolution (pulse)	8388608	8388608
Positioning repeatability (arcsec)	±1.2	±2
Absolute positioning accuracy (arcsec)	±18	±20
Torque constant (N · m/Arms)	2.00	3.91
Line back EMF (Vrms/rpm)	0.139	0.270
P-P resistance (Ω)	12.48	1.28
P-P inductance (mH)	21.82	22.74
Continuous current (Arms)	2.1	9.2
Peak current (Arms)	5.3	27.6
Number of poles	28	16
Moment of inertia (10 ⁻⁴ kgm ²)	13.96	76.45
Axial load (pressure) (N)	1100	3000
Axial load (tension) (N)	360	1000
Torque load (N · m)	6.1	58
Load surface mounting accuracy (μm)	5	30
Weight (kg)	2.55	15.95

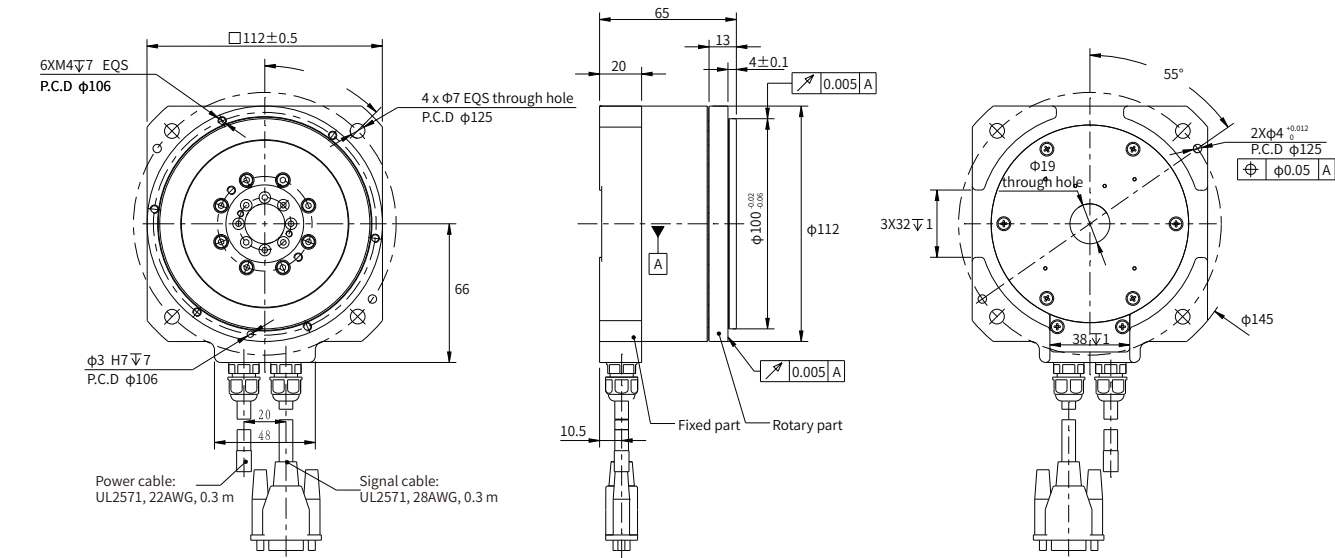
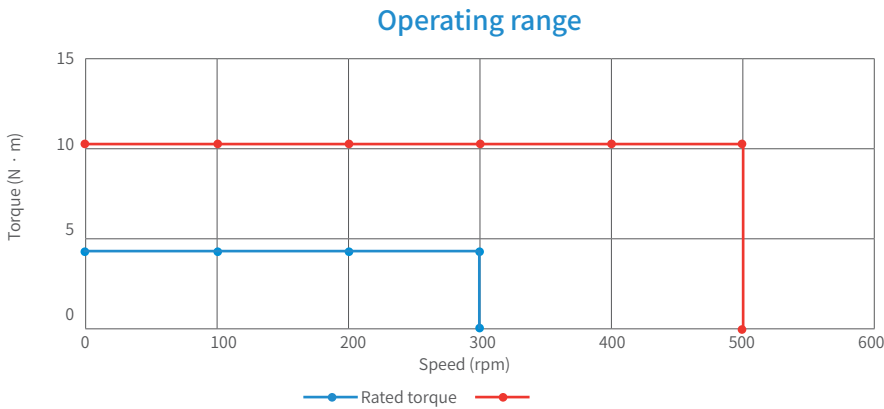
Precision Torque Motors

112 Precision Torque Motor
Performance Parameters



Motor Model	MP1-112F10AB-U313X-INT
Continuous operating torque (N·m)	4.2
Maximum torque (N·m)	10.5
Continuous operating speed (rpm)	300
Maximum speed (rpm)	500
Motor resolution (pulse)	8388608
Positioning repeatability (arcsec)	±1.2
Absolute positioning accuracy (arcsec)	±18
Torque constant (N·m/Arms)	2.00
Line back EMF (Vrms/rpm)	0.139
P-P resistance (Ω)	12.48
P-P inductance (mH)	21.82
Continuous current (Arms)	2.1
Peak current (Arms)	5.3
Number of poles	28
Moment of inertia (10 ⁻⁴ kgm ²)	13.96
Axial load (pressure) (N)	1100
Axial load (tension) (N)	360
Torque load (N·m)	6.1
Load surface mounting accuracy (μm)	5
Weight (kg)	2.55

Motor Operating Range Characteristic Curve



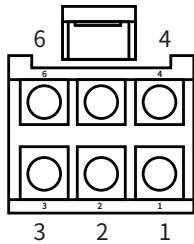
Drive and DDR Encoder Adapter Models

Motor Model	Applicable Drive	Item	3 m Extension Cable	5 m Extension Cable	10 m Extension Cable
MP1-112FF10AB-U313X-INT	SV680NS2R8I-GINT SV680PS2R8I-GINT	Power cable model	S6-L-M110-3.0-T-INT	S6-L-M110-5.0-T-INT	S6-L-M110-10.0-T-INT
		Power cable code	1504QJ74	1504QJ75	1504QJ77
		Encoder cable model	S6-L-PD-3.0-TTS	S6-L-PD-5.0-TTS	S6-L-PD-10.0-TTS
		Encoder cable code	1504D691	1504D692	1504D694

Note: The encoder adapter is a standard accessory and does not need to be purchased separately.

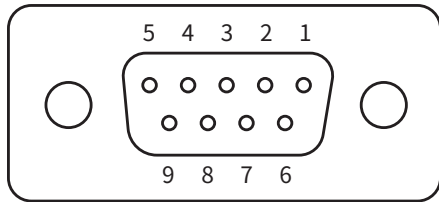
Terminal Pins and Assignment

Motor power cable connector



Pin	Phase	Wire color
1	U	White
2	V	Black
4	W	Red
5	P/E	Yellow/green
6	Shield	Black

Motor signal cable DB9 connector



No.	Assignment	No.	Assignment
1	PS+	6	-
2	PS-	7	+5
3	-	8	GND
4	-	9	-
5	-		

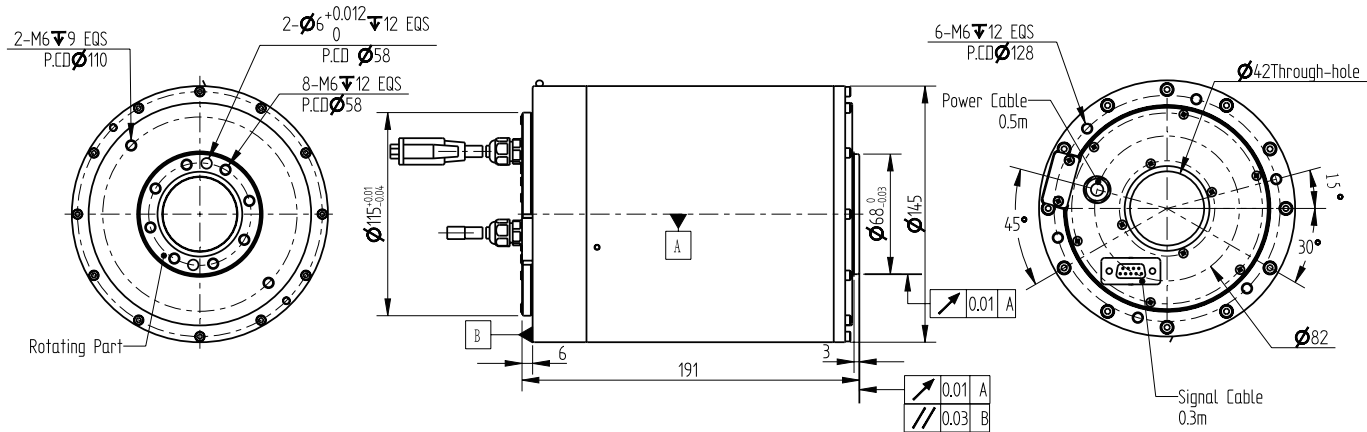
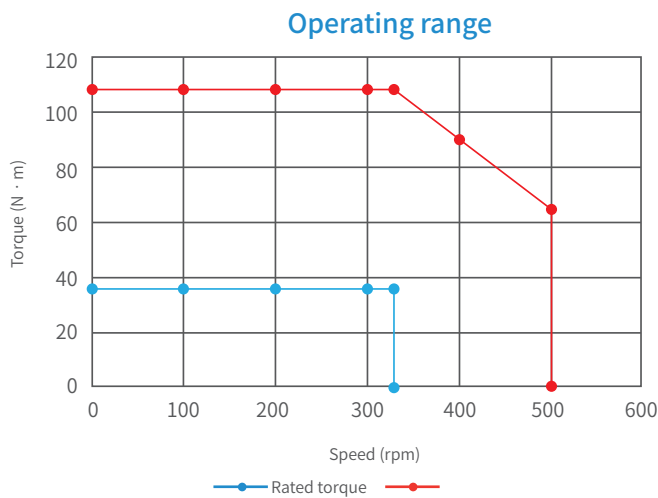
Precision Torque Motors

140 Precision Torque Motor
Performance Parameters



Motor Model	MP1-140S10BB-U323X-INT	MP1-140S10BB-U323X-CD-INT
Continuous operating torque (N · m)	108	108
Maximum torque (N · m)	36	36
Continuous operating speed (rpm)	500	500
Maximum speed (rpm)	330	330
Motor resolution (pulse)	8,388,608	8,388,608
Positioning repeatability (arcsec)	±2	±2
Absolute positioning accuracy (arcsec)	±20	±4 (compensated)
Torque constant (N · m/Arms)	3.75	3.75
Line back EMF (Vrms/rpm)	0.256	0.256
P-P resistance (Ω)	7.33	7.33
P-P inductance (mH)	9.8	9.8
Continuous current (Arms)	9.6	9.6
Peak current (Arms)	28.8	28.8
Number of poles	20	20
Moment of inertia (10 ⁻⁴ kgm ²)	33.8	33.8
Axial load (pressure) (N)	3200	3200
Axial load (tension) (N)	1050	1050
Torque load (N · m)	108	108
Load surface mounting accuracy (μm)	10	10
Weight (kg)	12.8	12.8

Motor Operating Range Characteristic Curve



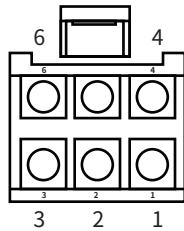
Drive and DDR Encoder Adapter Models

Motor Model	Applicable Drive	Item	3 m Extension Cable	5 m Extension Cable	10 m Extension Cable
MP1-140S10BB-U323X-INT	SV680NS012I-GINT SV680PS012I-GINT	Power cable model	S6-L-M110-3.0-T-INT	S6-L-M110-5.0-T-INT	S6-L-M110-10.0-T-INT
		Power cable code	1504QJ74	1504QJ75	1504QJ77
		Encoder cable model	S6-L-PD-3.0-TTS	S6-L-PD-5.0-TTS	S6-L-PD-10.0-TTS
		Encoder cable code	1504D691	1504D692	1504D694

Note: The encoder adapter is a standard accessory and does not need to be purchased separately.

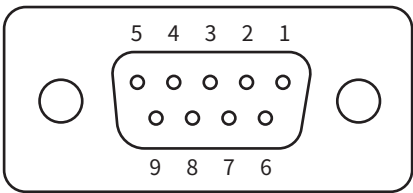
Terminal Pins and Assignment

Motor power cable connector



Pin	Phase	Wire color
1	U	White
2	V	Black
4	W	Red
5	P/E	Yellow/green
6	Shield	Black

Motor signal cable DB9 connector



No.	Assignment	No.	Assignment
1	PS+	6	-
2	PS-	7	+5
3	-	8	GND
4	-	9	-
5	-		