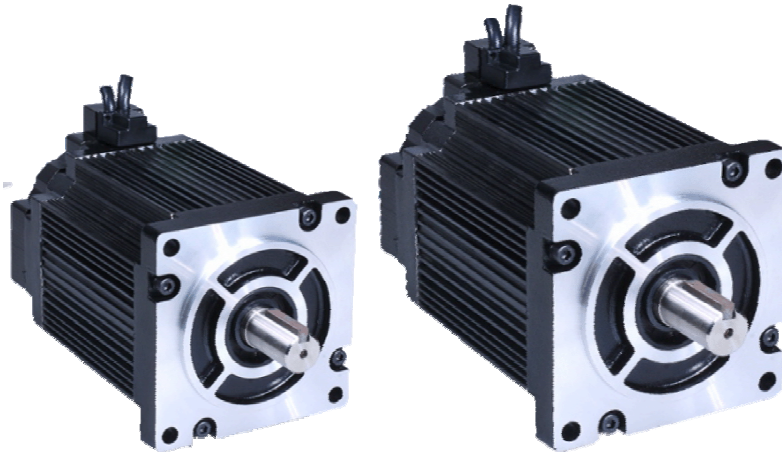




Leadshine

ES-MH Series Easy Servo Motor

Datasheet



High Voltage Stepper Motor with Encoder, 8 - 20 Nm

Version 0.0.2

<http://www.Leadshine.com>

Descriptions

Leadshine's ES-MH series easy servo motors, or stepping motors with encoders, are specially designed for 120VAC / 230VAC input with extra low motor heating. They can work with Leadshine easy servo drives including ES-DH1208 and ES-DH2306. They are currently available from NEMA34 to NEMA42 with holding torque from 8 Nm to 20 Nm. All those easy servo motors are integrated with 1,000-line) optical incremental encoders.

Part Number

ES	—	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		M: Motor	Motor Type	Motor Size	Holding Torque			
		MH: High Voltage Motor	2: 2-Phase 3: 3-Phase	23: N EMA23 (57mm) 24: NEMA24 (60mm) 34: NEMA34 (86mm) 42: NEMA42 (110mm)	09: 0.9 Nm 20: 2.0 Nm 40: 4.0 Nm			

Encoder Specifications

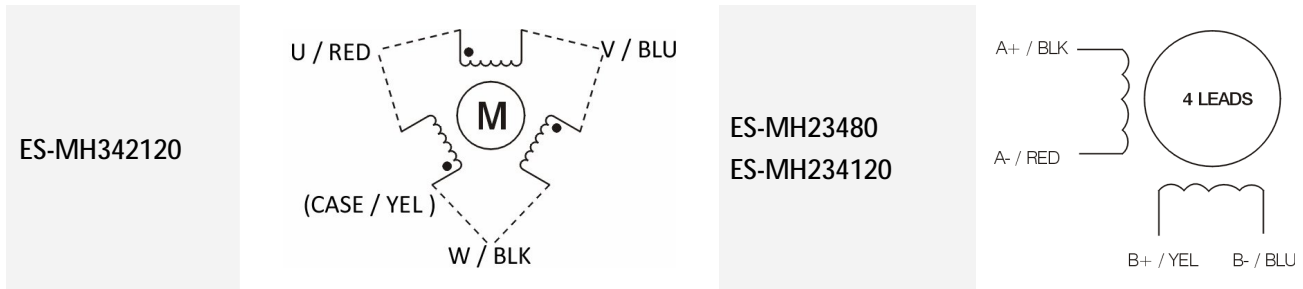
Parameter	Min	Typical	Max	Unit
Operating Temperature	-40	-	100	°C
Supply Voltage	4.5	5	5.5	VDC
Output Current per Channel	-1	-	5	mA
Low Level Output Voltage	-	-	0.4	VDC
High Level Output Voltage	2.4	-	-	VDC
Count Frequency	-	-	100	KHz

Motor Specifications

Model	Phase	Step Angle (°)	Leads	Holding Torque (N.m)	Phase Current (A)	Phase Resistance (Ohm)	Phase Inductance (mH)	Rotor Inertia (g.cm ²)	Weight (Kg)	Shaft Diameter (mm)
ES-MH23480	2	1.8°	4	8.0	5.0	-	-	-	4.0	14
ES-MH234120	2	1.8°	4	12	5.5	-	-	-	5.6	14
ES-MH33480	3	1.2°	3	8.0	3.5	-	-	-	5.6	14
ES-MH342120	3	1.2°	3	12	4.2	1.2	13	-	8.6	19
ES-MH342200	3	1.2°	3	20	4.5	-	-	-	10.5	19

Motor Wiring Diagram

Note: Contact Leadshine for the wiring diagram of other motors.



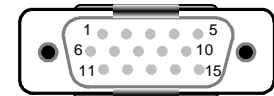
Cable Specifications

Model	Motor Cable		Encoder Cable	
	Native	Native	Extension	
	Length	Length	Length / Part Number	
ES-MH23480	500±20mm (Fly wires)	(HDD15 Male)	3.0m / CABLEG-BM3M0	
ES-MH234120			8.0m / CABLEG-BM8M0	
ES-MH33480			12.0m / CABLEG-BM12M0	
ES-MH342120				
ES-MH342200				

Encoder Cable Connector

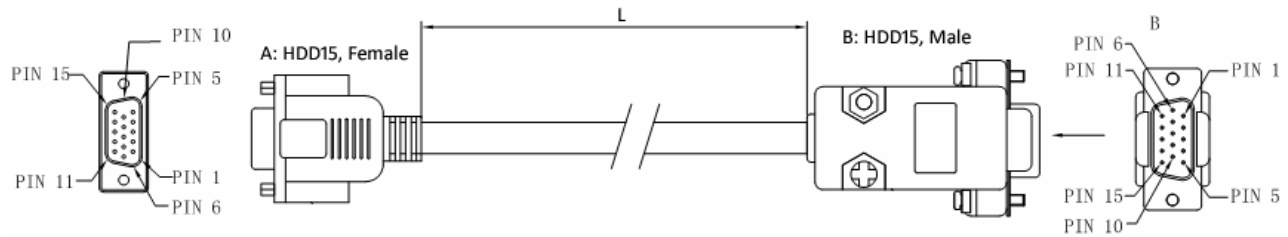
ES-MH23480, ES-MH234120
ES-MH33480, ES-MH342120, ES-MH342200

Pin	Name	Wire Color	I/O	Description
1	EA+	Black	O	Channel A+ output
2	VCC	Red	I	+5V power input
3	GND	White	GND	Ground
11	EB+	Yellow	O	Channel B+ output
12	EB-	Green	O	Channel B- output
13	EA-	Blue	O	Channel A- output



Encoder Extension Cable

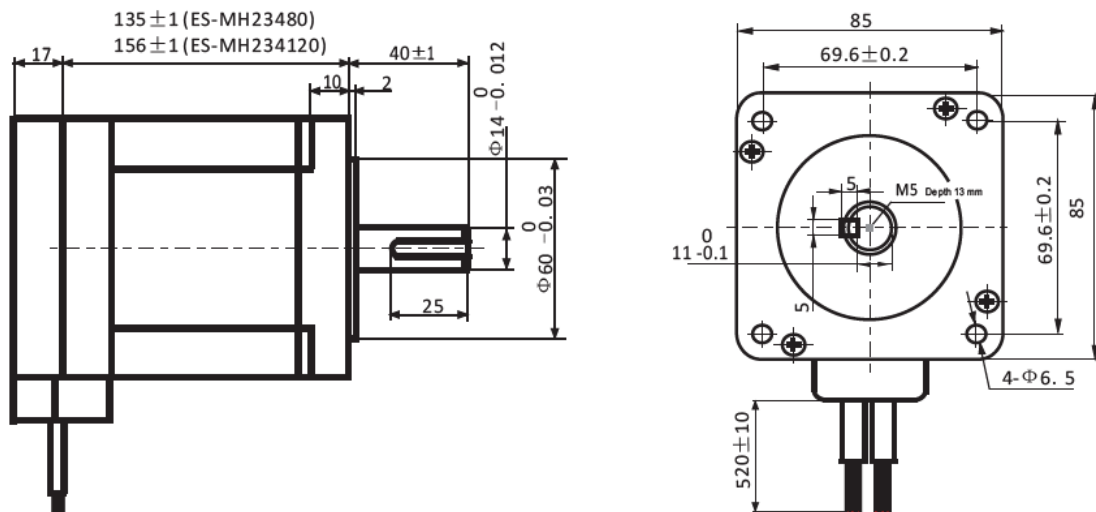
CABLEG-BMXMX



Part Number	L	Matching Motor
CABLEG-BM3M0	3.0m	ES-MH23480, ES-MH234120, ES-MH33480, ES-MH342120, ES-MH342200
CABLEG-BM8M0	8.0m	
CABLEG-BM12M0	10.0m	

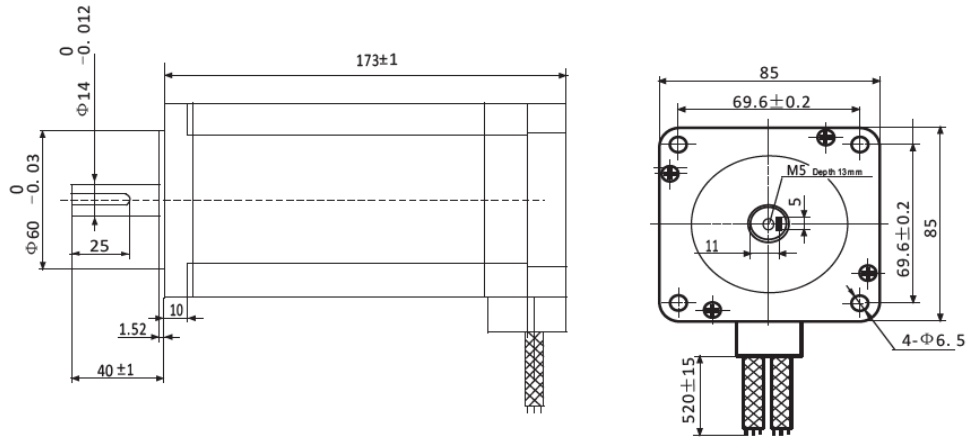
A: HDD15 Female	Wire Color	B: HDD15 Male	Name	Description
Pin		Pin		
1	Black	1	EA+	Channel A+
2	Red	13	VCC	+5V power input
3	White	3	GND	+5V GND
11	Yellow	2	EB+	Channel B+
12	Green	12	EB-	Channel B-
13	Blue	11	EA-	Channel A-

Mechanical Specifications

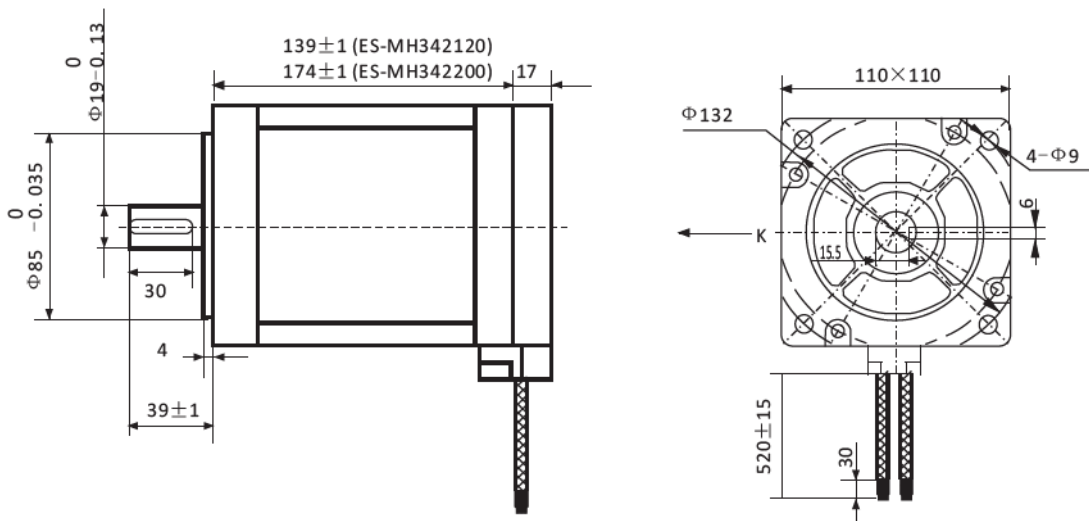


Mechanical Specification of ES-MH23480 and ES-MH234120

Mechanical Specifications (Continued)

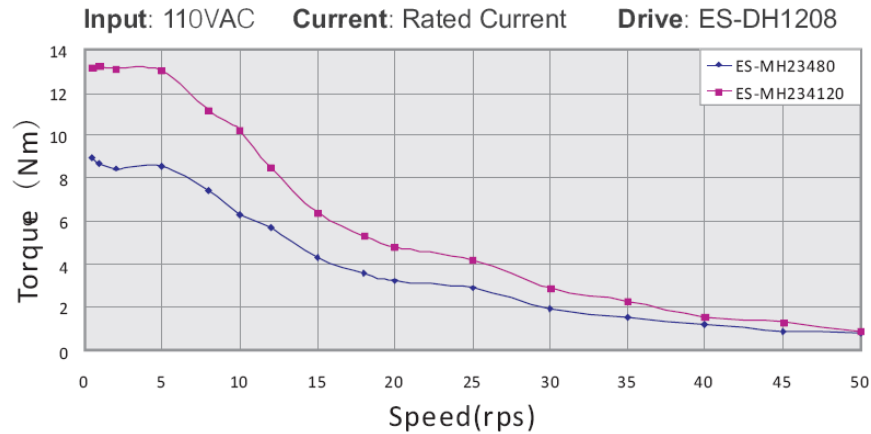


Mechanical Specification of ES-MH33480

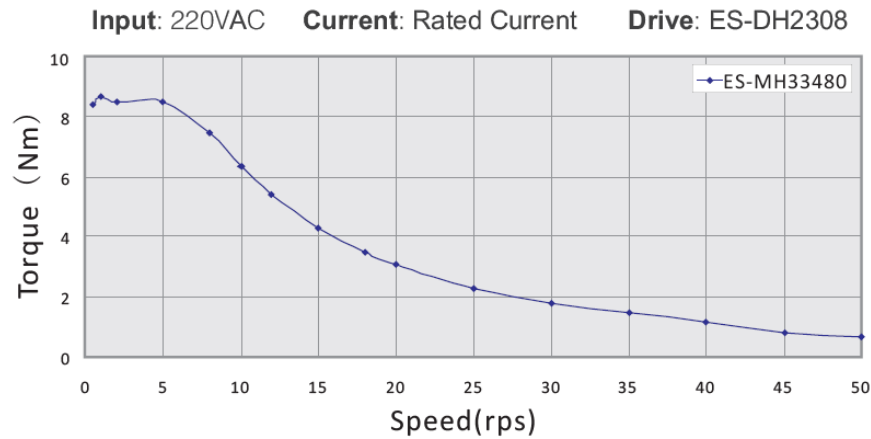


Mechanical Specification of ES-MH342120 and ES-MH342200

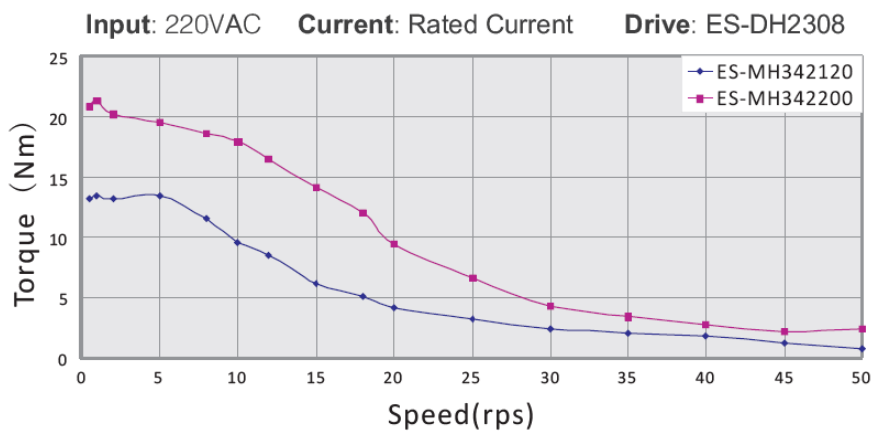
Speed-Torque Curves



Speed Torque Curve of ES-MH23480



Speed Torque Curve of ES-MH33480



Speed Torque Curve of ES-MH342120 and ES-MH42200