

Hybrid Servo Motors

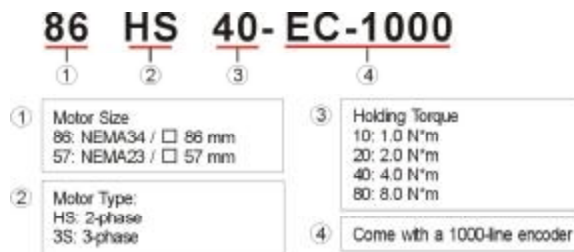
Stepping Motors with Encoders, 0.9 Nm to 8.0 Nm



Descriptions

Leadshine hybrid servo motors, or stepping motors with encoders, are designed to work with Leadshine HBS series hybrid servo drives including HBS57, HBS86, and HBS86H. They are currently available in frame size NEMA 23 with holding torque of 0.9, 1.0, or 2.0 Nm, and NEMA 34 with holding torque of 4.0 or 8.0 Nm. All those hybrid servo motors are integrated with 4,000 PPR (1,000-line) optical incremental encoders.

Part Number



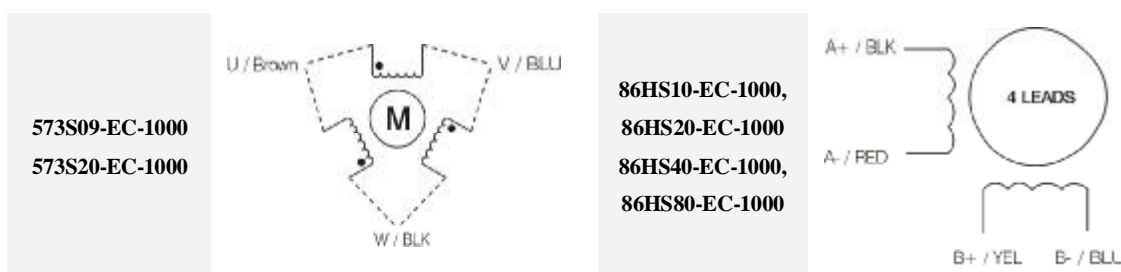
Encoder Specifications

Parameter	Min	Typica	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

Motor Specifications

Model	Phase	Step Angle (Deg)	Leads	Holding Torque (N.m)	Phase Current (A)	Phase Resistance (Ohm)	Phase Inductance (mH)	Rotor Inertia (g.cm ²)	Weight (Kg)	Encoder (lines)
573S09-EC-1000	3	1.2	3	0.9	5.8	0.35	0.72	280	0.75	1000
573S20-EC-1000	3	1.2	3	2.0	5.8	0.62	1.85	580	1.3	1000
57HS10-EC-1000	2	1.8	4	1.0	4.2	0.4	2.0	200	0.8	1000
57HS20-EC-1000	2	1.8	4	2.0	5.8	0.37	2.0	480	1.25	1000
86HS40-EC-1000	2	1.8	4	4.0	5.5	0.46	4.0	1500	1.5	1000
86HS80-EC-1000	2	1.8	4	8.0	6.0	0.44	3.73	2580	3.8	1000

Motor Wiring Diagram



Cable Specifications

Model	Motor Cables			Encoder Cables		
	Standard	Extension		Standard	Extension	
	Length	Length	Part Number	Length	Length	Part Number
573S09-EC-1000	0.55±0.02m	*	*	0.55±0.02m	3m	CABLE-ENCODER-03
					5m	CABLE-ENCODER-05
573S20-EC-1000	0.55±0.02m	*	*	0.55±0.02m	3m	CABLE-ENCODER-03
					5m	CABLE-ENCODER-05
57HS10-EC-1000	0.80±0.02m	*	*	0.30±0.02m	3m	CABLEH-BM3M0
					8m	CABLEH-BM8M0
57HS20-EC-1000	0.80±0.02m	*	*	0.30±0.02m	3m	CABLEH-BM3M0
					8m	CABLEH-BM8M0
86HS40-EC-1000	0.52±0.02m	*	*	0.30±0.02m	3m	CABLEH-BM3M0
					8m	CABLEH-BM8M0
86HS80-EC-1000	0.52±0.02m	*	*	0.30±0.02m	3m	CABLEH-BM3M0
					8m	CABLEH-BM8M0

*Contact Leadshine if you need motor extension cable.

Mechanical Specifications – with Encoder

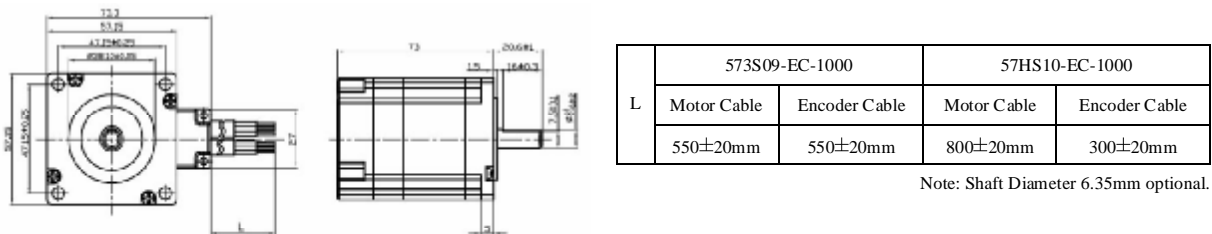


Figure 1: Mechanical Specification of 573S09-EC-1000 and 57HS10-EC-1000

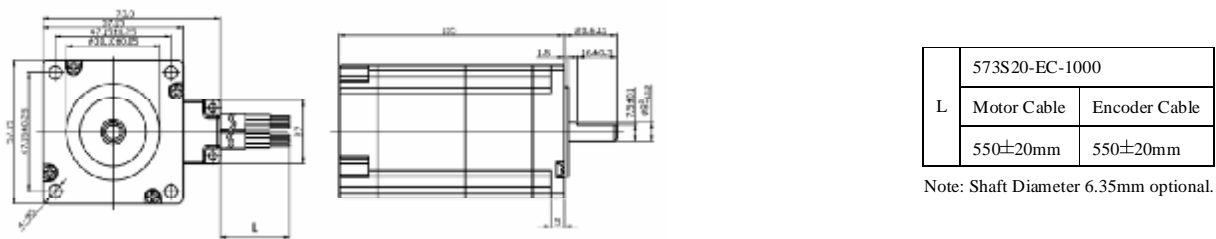


Figure 2: Mechanical Specification of 573S20-EC-1000

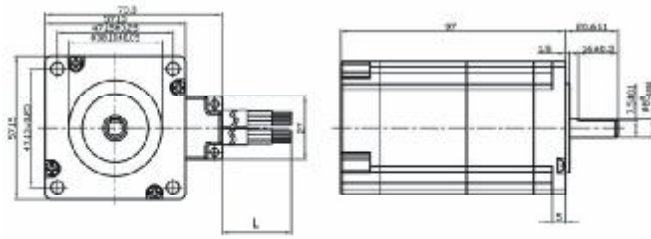


Figure 3: Mechanical Specification of 57HS20-EC-1000

57HS20-EC-1000		
L	Motor Cable	Encoder Cable
	800±20mm	300±20mm

Note: Shaft Diameter 6.35mm optional.

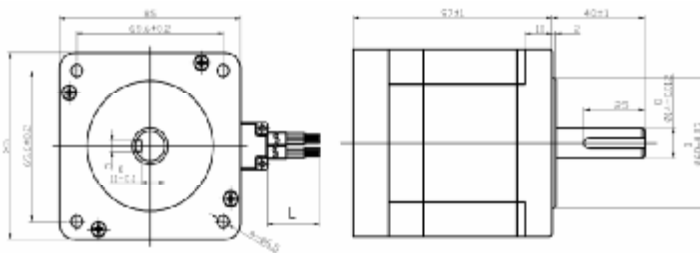


Figure 4: Mechanical Specification of 86HS40-EC-1000

86HS40-EC-1000		
L	Motor Cable	Encoder Cable
	520±20mm	300±20mm

Note: Shaft Diameter 12.7mm optional.

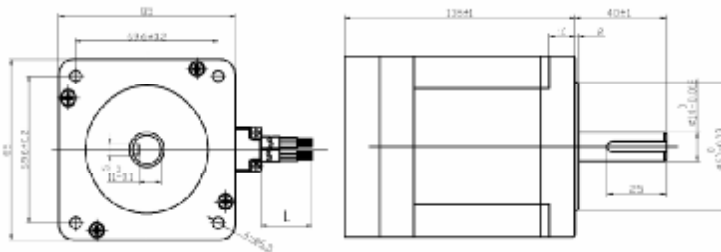


Figure 5: Mechanical Specification of 86HS80-EC-1000

86HS80-EC-1000		
L	Motor Cable	Encoder Cable
	520±20mm	300±20mm

Encoder Extension Cable Pin Out

Pin	Color	Name	Description	Pin	Color	Name	Description
1	Red	VCC	+5V power input	4	Green	B-	Encoder Channel B-
2	White	GND	+5V GND	5	Black	A+	Encoder Channel A+
3	Yellow	B+	Encoder Channel B+	6	Blue	A-	Encoder Channel A-