LICHUAN

Datasheet of 3 Phase Easy Servo Motor

LC-H3 Series

3 Phase Closed Loop Stepper Motors / 1~20Nm
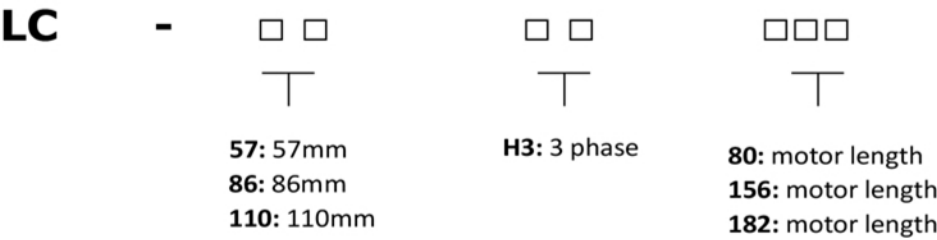
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Descriptions

Lichuan's LC-H3 series easy servo motors,are also called 3 phase closed loop stepper motors. They are are designed to match with Lichuan's 3 phase easy servo drivers including the LCDA357H and LCDA2260H. They are available from NEMA23 to NEMA42 (57,86mm and 110mm) with holding torque from 1Nm to 20Nm. 1000-line optical incremental encoders are used on those easy servo motors to improve the machine accuracy. They all have good function characteristics such as encoder feedback, high speed, high precision and so on.
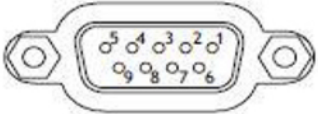
Naming Rules

LC   -   ☐ ☐   ☐ ☐   ☐☐☐

57: 57mm   **H3:** 3 phase   **80:** motor length
86: 86mm   **156:** motor length
110: 110mm   **182:** motor length

Encoder Specifications

Parameter	Min	Typical	Max	Unit
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

Encoder Cable Connector

Pin	Name	Wire color	Description	Connector
1	EA+	black	Channel A+ output	
2	EA-	blue	Channel A- output	
4	EB+	white	Channel B+ output	
5	EB-	red	Channel B- output	
7	GND	yellow	+5V power input	
8	VCC	green	Ground	

Cable Specifications

Models	Power Cable	Power Extension Cable	Encoder Cable	Encoder Extension Cable
LC57H355	450±15mm	3m / CABLEP-LC3 5m / CABLEP-LC5 6m / CABLEP-LC6 8m / CABLEP-LC8 10m / CABLEP-LC10 12m / CABLEP-LC12	330±15mm	3m / CABLEBM-LC3 5m / CABLEBM-LC5 6m / CABLEBM-LC6 8m / CABLEBM-LC8 10m / CABLEBM-LC10 12m / CABLEBM-LC12
LC57H380				
LC57H3100				
LC86H3129				
LC86H3156				
LC110H3148				
LC110H3182				
LC110H3216				

Encoder Extension Cable

Models	Length	Matched Motor
CABLEBM-LC3	3m	LC57H355 / LC57H380 LC57H3100 / LC86H3129 LC86H3156 / LC110H3148 LC110H3182 / LC110H3216
CABLEBM-LC5	5m	
CABLEBM-LC6	6m	
CABLEBM-LC8	8m	
CABLEBM-LC10	10m	
CABLEBM-LC12	12m	

Power Extension Cable

Models	Length	Matched Motor
CABLEP-LC3	3m	LC57H355 / LC57H380 LC57H3100 / LC86H3129 LC86H3156 / LC110H3148 LC110H3182 / LC110H3216
CABLEP-LC5	5m	
CABLEP-LC6	6m	
CABLEP-LC8	8m	
CABLEP-LC10	10m	
CABLEP-LC12	12m	

Motor Specifications

» 3 Phase 57 (NEMA23) Easy Servo Motor Series

General Specifications---

Item	Specifications
Step Angle Accuracy	±5%
Resistance Accuracy	±10%（20°）
Inductance Accuracy	±20%（1KHZ）
Temperature Rise	80°Cmax
Ambient Temperature	-20°~+50°
Insulation Resistance	100MΩ Min 500VDC
Dielectric Strength	500V AC 1minute
Allowable Radial Load	0.02mm Max .(450g load)
Allowable Thrust Load	0.08mm Max. (450g load)
Maximum Radial load	75N (From the flange surface 20mm)
Maximum Axial load	15N

Technical Data---

Models	Step Angle (°)	Motor Length (mm)	Holding Torque (N.M)	Phase Current (A)	Phase Resistance (Ω)	Phase Inductance (mH)	Rotor Inertia (g.cm2)	Leads	Motor Weight (Kg)
LC57H355	1.2	55+22	1.0	3.5	1.5	5.2	300	3	1.0
LC57H380	1.2	80+22	2.0	3.5	1.0	3.5	500	3	1.4
LC573100	1.2	100+22	3.0	4.0	0.9	3.0	700	3	1.8

Dimension---

DIMENSIONS unit=mm

□57.15±0.25
4-47.14±0.25
4-Ø5.0 THROUGH
Ø38.1±0.05
22
101±1
21±1
1.6±0.2
15±0.2
7.5±0.1
Ø8.0
AWG26#(x6) LONG:500
AWG20#(x4) LONG:500
热缩套管

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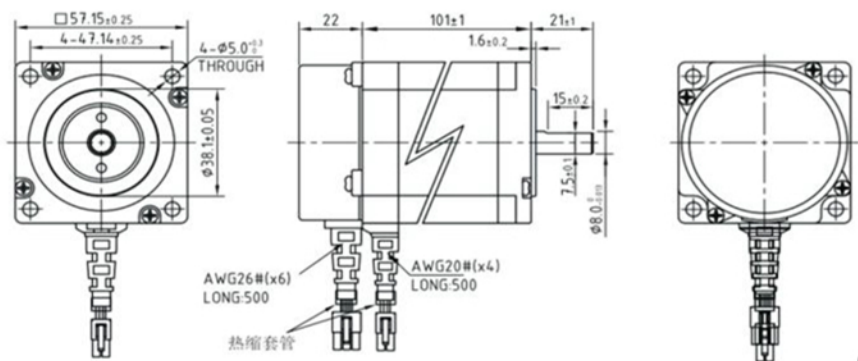
Motor Wiring Diagram---

⊙ MOTOR CONNECTIONS

V 棕

M

U 黄   W 蓝
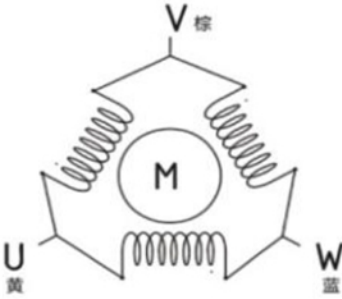
⊙ Encode Cotrol

1	yellow	EGND
2	red	+5VCC
3	blue	EA−
4	green	EA+
5	black	EB−
6	white	EB+

Torque-speed Curve---

N.M

The test voltage DC24V
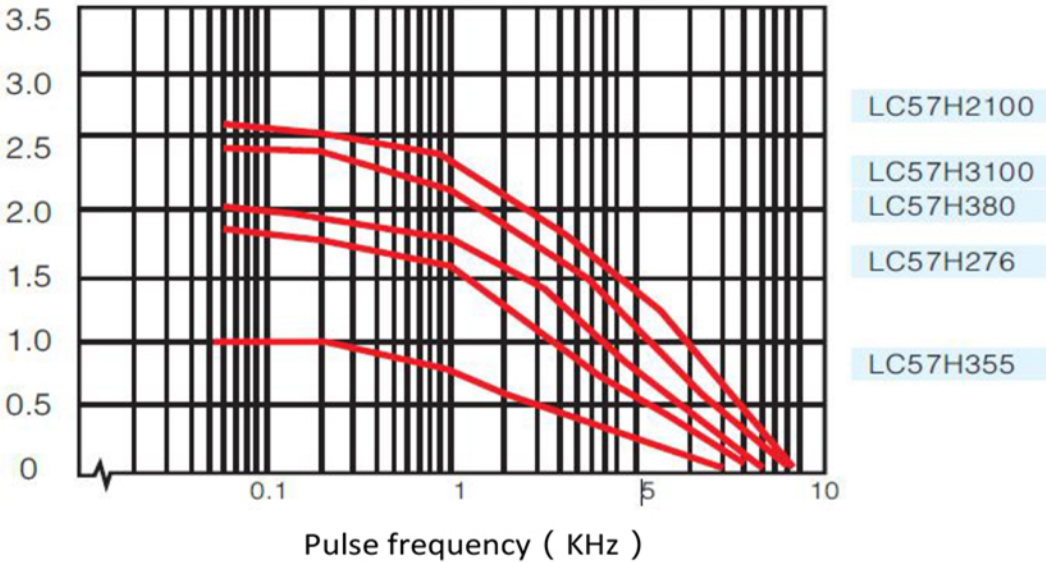
3.5
3.0
2.5   LC57H2100
2.0   LC57H3100
       LC57H380
1.5   LC57H276
1.0
       LC57H355
0.5
0

0.1   1   5   10

Pulse frequency（KHz）

Matters Need Attention:

1. Not to be wrong when connect the motor to the driver.

2. Due to the difference of driving conditions, the motor may have obvious fever. Motor surface temperature allowing more than 85 ℃ during the operation.

3. Position the motor with the installing seam on the front end cover when installing, and pay attention to the tolerance matching, strictly the concentricity of the motor shaft and load.
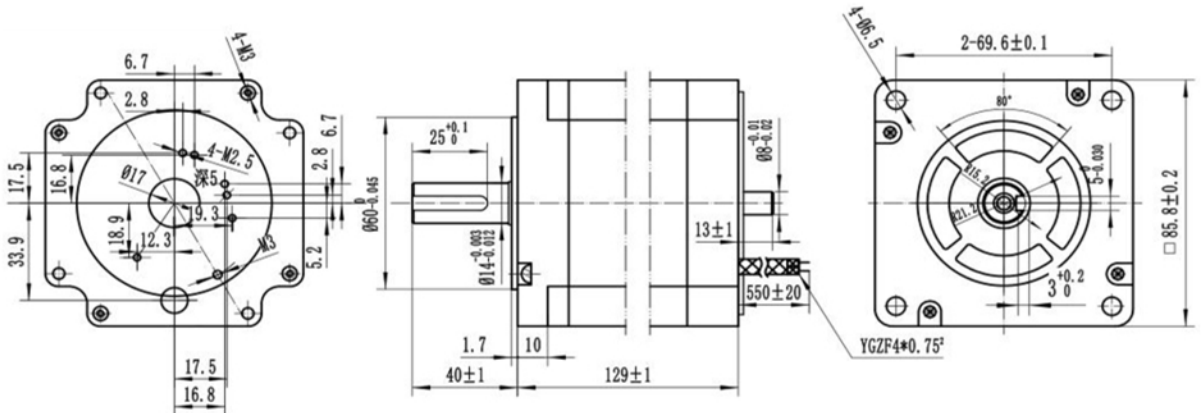
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» *3 Phase 86 (NEMA34) Easy Servo Motor Series*

General Specifications---

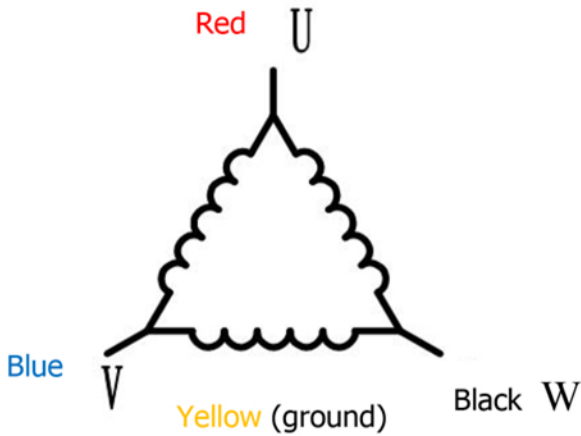| Item	Specifications
Step Angle Accuracy	±5%
Resistance Accuracy	±10%（20°）
Inductance Accuracy	±20%（1KHZ）
Temperature Rise	80°C max
Ambient Temperature	-20°~+50°
Insulation Resistance	100MΩ Min 500VDC
Dielectric Strength	500V AC 1minute
Allowable Radial Load	0.02mm Max .(450g load)
Allowable Thrust Load	0.08mm Max. (450g load)
Maximum Radial load	130N (From the flange surface 20mm)
Maximum Axial load	30N

Technical Data---

Models	Step Angle (°)	Motor Length (mm)	Holding Torque (N.M)	Rated Current (A)	Phase Resistance (Ω)	Phase Inductance (mH)	Rotor Inertia (g.cm2)	Leads	Motor Weight (Kg)
LC86H3129	1.2	129+22	9.0	3.0	2.45	16.1	3000	3	4.6
LC86H3156	1.2	156+22	12.0	3.0	2.5	18	3000	3	5.5

Dimension---

Motor Wiring Diagram---

» 3 Phase 110 (NEMA42) Easy Servo Motor Series

General Specifications---

| Item	Specifications
Step Angle Accuracy	±5%
Resistance Accuracy	±10%（20°）
Inductance Accuracy	±20%（1KHZ）
Temperature Rise	80°C max
Ambient Temperature	-20°~+50°
Insulation Resistance	100MΩ Min 500VDC
Dielectric Strength	500V AC 1minute
Allowable Radial Load	0.02mm Max .(450g load)
Allowable Thrust Load	0.08mm Max. (450g load)
Maximum Radial load	220N (From the flange surface 20mm)
Maximum Axial load	60N

Technical Data---

Models	Step Angle (°)	Motor Length (mm)	Holding Torque (N.M)	Phase Current (A)	Phase Resistance (Ω)	Phase Inductance (mH)	Rotor Inertia (g.cm2)	Leads	Motor Weight (Kg)
LC110H3148	1.2	148+40	12	6.0	1.89	8.34	9720	3	6.6
LC110H3182	1.2	182+40	16	6.4	1.89	8.73	13560	3	9.0
LC110H3216	1.2	216+40	20	6.9	1.86	7.26	17400	3	11.1

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Dimension---
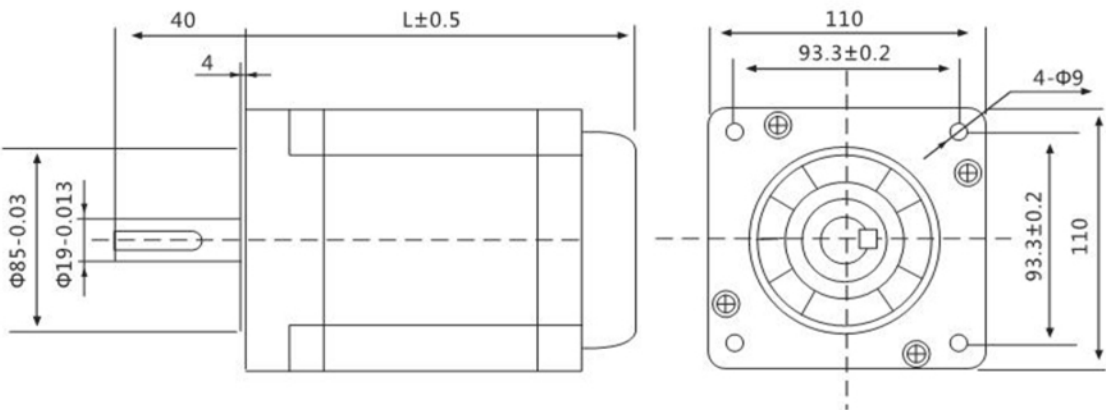
Motor Wiring Diagram---
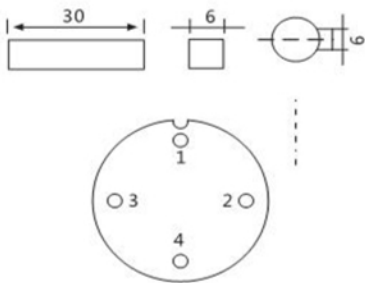
序号	1	2	3	4	备注
相序	U	V	W	GND	四芯插座

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Torque-speed Curve---

Matters Need Attention:

1.Not to be wrong when connect the motor to the driver.

2.Due to the difference of driving conditions, the motor may have obvious fever. Motor surface temperature allowing more than 85 ℃ during the operation.

3.Position the motor with the installing seam on the front end cover when installing, and pay attention to the tolerance matching, strictly the concentricity of the motor shaft and load.