

Hybrid Stepper Motors

混合式步进电机

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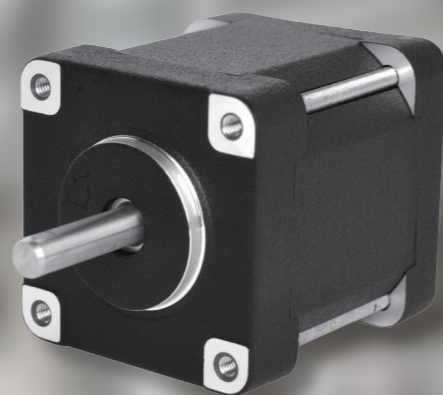
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Hybrid Stepper Motors

混合式步进电机



Royetek & 3X MOTION Hybrid Stepper Motors are widely used in laboratory and medical equipment, printing machines, pumps, vending machines and a multitude of other applications.

Customisation Options:

Shaft Extensions

All motors can be supplied with single or double ended shaft to customer request Shaft length and other dimensions can also be modified on demand.

Number of leads

All motors can be supplied with 4,5,6 or 8 leads and if required a connector can be provided on our motors to customer request.

Winding Code

Since each customer request can be different, we list only our standard products in this catalogue. However, we will be happy to quote other variants to your request.

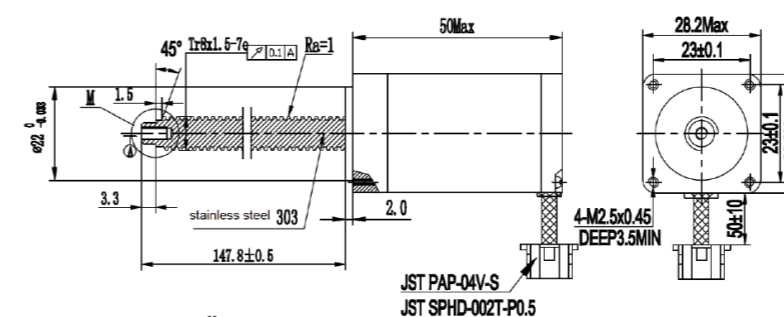
Holding Torque

Holding torque is measured with two phases supplied at the rated current. The enclosed technical specifications are therefore typical. (Based on customer's request for special shaft, leads, fixings, etc, we will provide you with a unique product code/identifier.)

Hybrid stepper linear actuators

External linear actuator

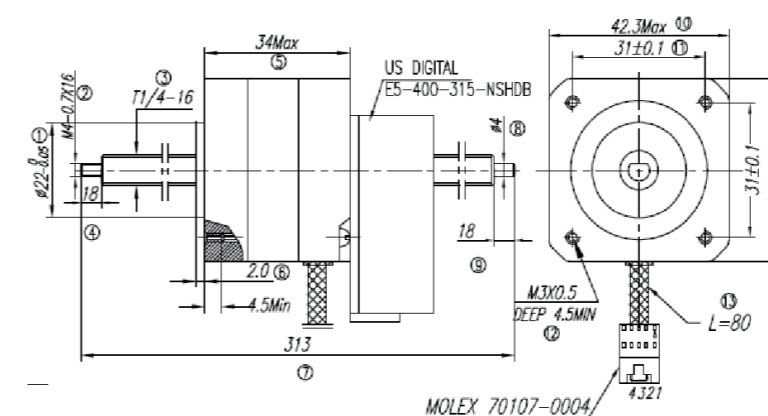
Dimensions in mm



part number 型号	length(mm) 长度	step angle deg 步距角	resistance (Ω) 电阻	current (A) 电流	voltage 电压	holding torque (N.cm) 保持力矩	lead wires /pins 引出线 / 针脚
28HS050DF920S-01	50	1.8°	9.2	0.67	6.2	12	4

Non-captive linear actuator

Dimensions in mm

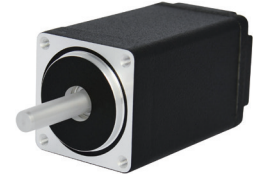


part number 型号	length(mm) 长度	step angle deg 步距角	resistance (Ω) 电阻	current (A) 电流	voltage 电压	holding torque (N.cm) 保持力矩	lead wires /pins 引出线 / 针脚
42HS034DF730S-01	34	1.8°	7.3	0.67	4.89	25	4

20HSD Series (1.8 degree)

General Specification

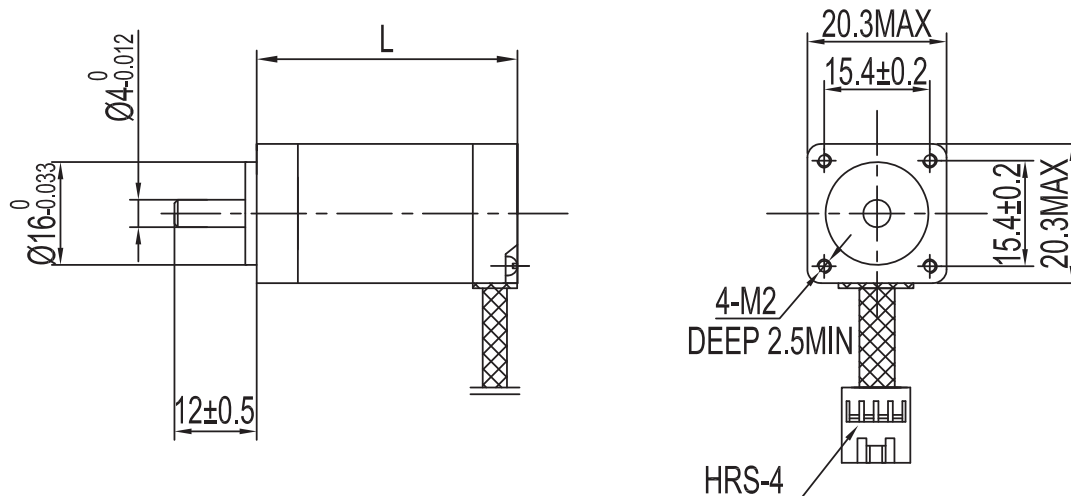
Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	20N (20mm from the flange)
Max. Axial Force 最大轴向力	2N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	20HS026DF20JX-01	20HS026DF200X-01	20HS030DF650X-01	20HS033DF650X-01	20HS042DF540X-01
length (mm) 长度	26	26	30	33	42
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	20	2	6.5	6.5	5.4
current (A) 电流	0.2	0.6	0.6	0.6	0.8
voltage 电压	4	4	3.9	3.9	4.32
holding torque (N.cm) 保持力矩	1.6	1.6	1.8	1.8	3
lead wires /pins 引出线 / 针脚	4	4	4	4	4
rotor inertia (g.cm ²) 转动惯量	2	2	2.5	2.5	3
weight (kg) 重量	0.1	0.1	0.1	0.11	0.12

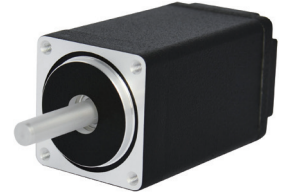
Dimensions in mm



28HSD Series (1.8 degree)

General Specification

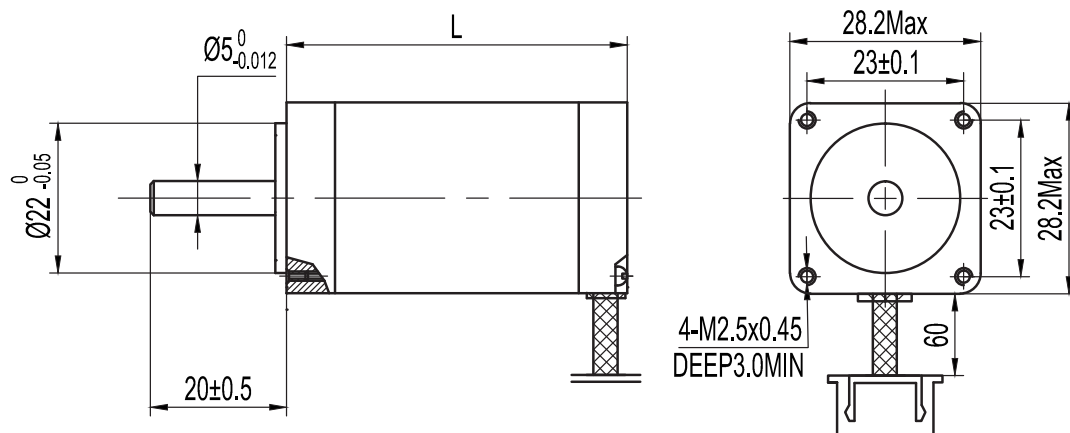
Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	28HS020DF 10JX-01	28HS024DF 12JX-01	28HS031DF 48JX-01	28HS033DS 36JX-01	28HS040DS 340X-01	28HS050DF 350X-01
length (mm) 长度	20	24	31	33	40	50
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	10	12	48	36	3.4	3.5
current (A) 电流	0.5	0.5	0.3	0.3	0.95	1
voltage 电压	5	6	14.4	10.8	3.23	3.5
holding torque (N.cm) 保持力矩	3.4	3	7	5	7.5	13
lead wires /pins 引出线 / 针脚	4	4	4	6	4	4
rotor inertia (g.cm ²) 转动惯量	7	8	10	10	12	18
weight (kg) 重量	0.1	0.1	0.11	0.12	0.14	0.2

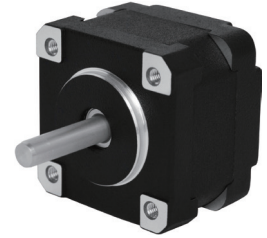
Dimensions in mm



35HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	±5% (full step, no load)
Resistance Accuracy 电阻公差	±10%
Inductance Accuracy 电感公差	±20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

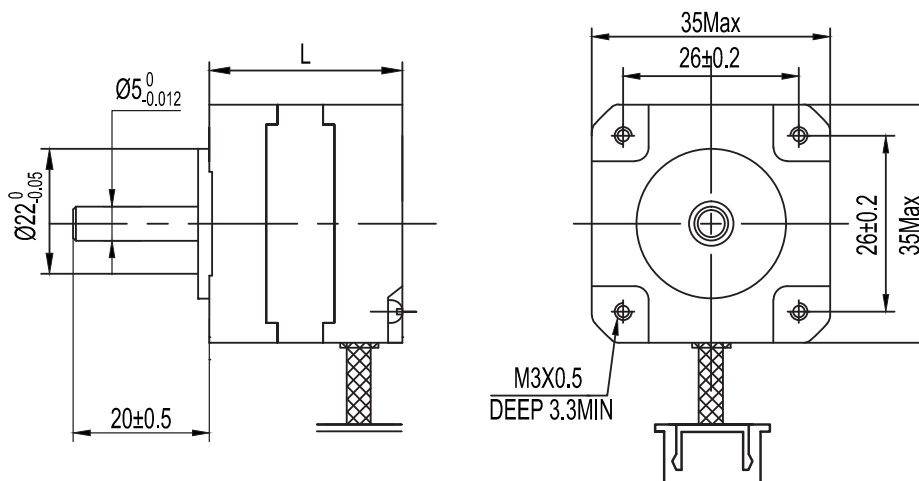


Performance Data

part number 型号	35HS020DF400X-01	35HS022DE10JX-01	35HS025DF10JX-01	35HS027DS80JX-01
length (mm) 长度	20	22	25	27
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	4	10	10	80
current (A) 电流	0.8	0.5	0.4	0.16
voltage 电压	3.2	5	4	12.8
holding torque (N.cm) 保持力矩	5	5	5	8
lead wires /pins 引出线 / 针脚	4	8	4	6
rotor inertia (g.cm ²) 转动惯量	10	11	12	14
weight (kg) 重量	0.11	0.12	0.13	0.15

part number 型号	35HS033DF24JX-01	35HS034DS70JX-01	35HS052DF680X-01
length (mm) 长度	33	34	52
step angle deg 步距角	1.8°	1.8°	1.8°
resistance (Ω) 电阻	24	70	6.8
current (A) 电流	0.5	0.1	0.8
voltage 电压	12	7	5.44
holding torque (N.cm) 保持力矩	18	5	18
lead wires /pins 引出线 / 针脚	4	6	4
rotor inertia (g.cm ²) 转动惯量	20	20	50
weight (kg) 重量	0.18	0.18	0.28

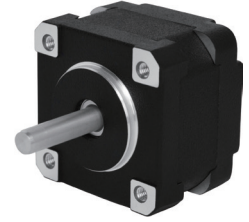
Dimensions in mm



35HSM Series (0.9 degree)

General Specification

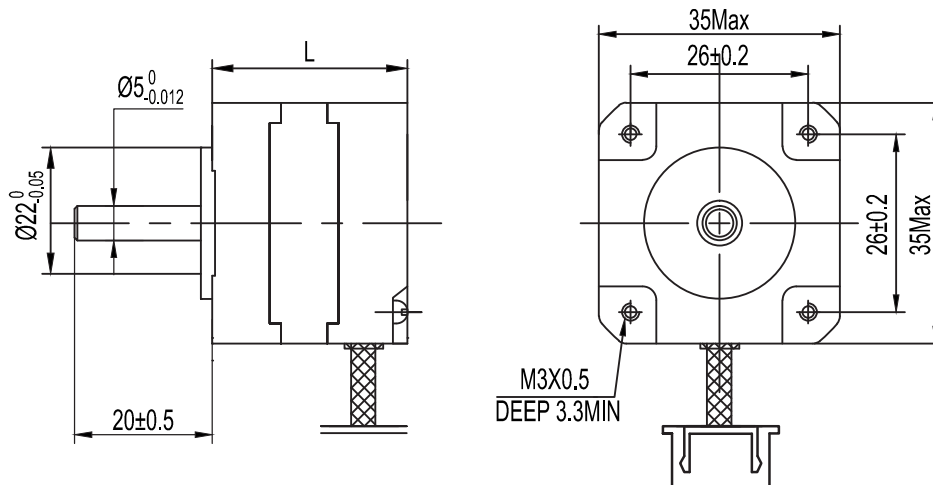
Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	35HS020MF10JX-01	35HS022MF25JX-01	35HS025MF45JX-01	35HS027MF450X-01	35HS033MF12JX-01
length (mm) 长度	20	22	25	27	33
step angle deg 步距角	0.9°	0.9°	0.9°	0.9°	0.9°
resistance (Ω) 电阻	10	25	45	4.5	12
current (A) 电流	0.4	0.45	0.3	0.5	0.5
voltage 电压	4	11.25	13.5	2.25	6
holding torque (N.cm) 保持力矩	4	7	10	7	15
lead wires /pins 引出线 / 针脚	4	4	4	4	4
rotor inertia (g.cm ²) 转动惯量	10	11	13	14	20
weight (kg) 重量	0.11	0.12	0.15	0.16	0.18

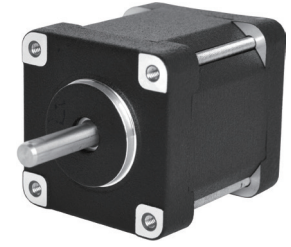
Dimensions in mm



39HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

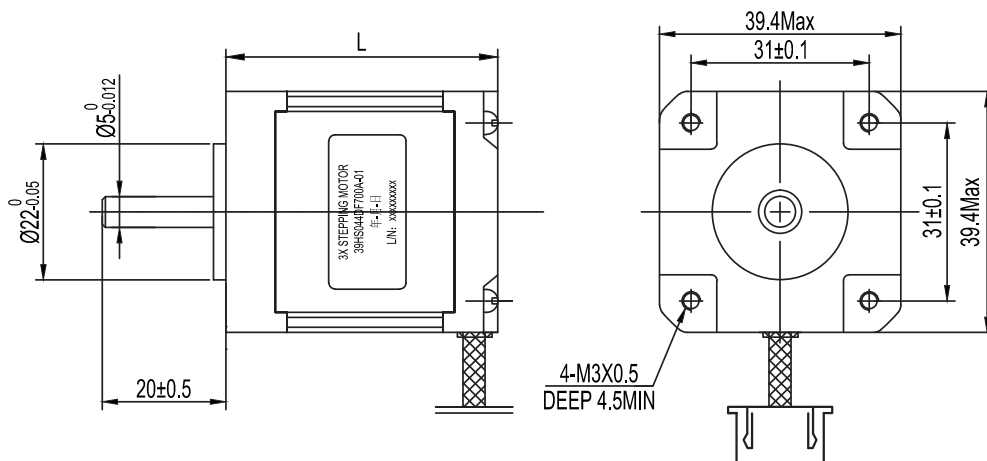


Performance Data

part number 型号	39HS020DF300X-01	39HS022DF910X-01	39HS024DF440X-01	39HS026DF10JX-01	39HS027DS30JX-01
length(mm) 长度	20	22	24	26	27
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	3	9.1	4.4	10	30
current (A) 电流	1.2	0.55	0.9	0.6	0.4
voltage 电压	3.6	5.005	3.96	6	12
holding torque (N.cm) 保持力矩	10.8	8.2	5	15	15
lead wires /pins 引出线 / 针脚	4	4	4	4	6
rotor inertia (g.cm ²) 转动惯量	11	12	14	15	16
weight (kg) 重量	0.13	0.135	0.14	0.145	0.15

part number 型号	39HS033DF700X-01	39HS037DS750X-01	39HS039DF400X-01	39HS044DF40JX-01
length(mm) 长度	33	37	39	44
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	7	7.5	4	40
current (A) 电流	0.65	0.8	1.1	0.3
voltage 电压	4.55	6	4.4	12
holding torque (N.cm) 保持力矩	17	20	22	28
lead wires /pins 引出线 / 针脚	4	6	4	4
rotor inertia (g.cm ²) 转动惯量	20	27	32	35
weight (kg) 重量	0.18	0.22	0.24	0.27

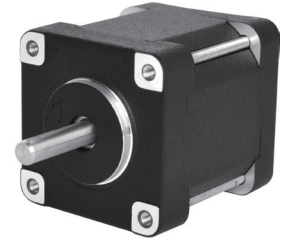
Dimensions in mm



39HSM Series (0.9 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

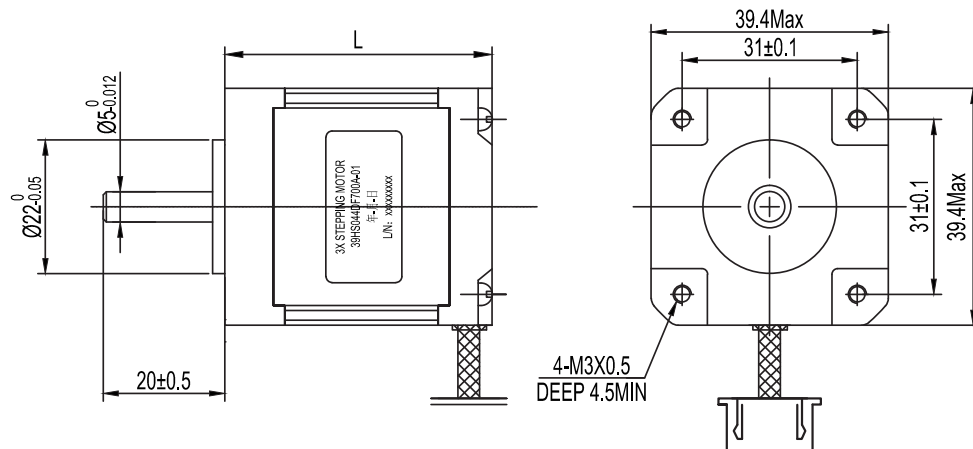


Performance Data

part number 型号	39HS020MF10JX-01	39HS022MF300X-01	39HS024MF23JX-01	39HS026MF220X-01
length(mm) 长度	20	22	24	26
step angle deg 步距角	0.9°	0.9°	0.9°	0.9°
resistance (Ω) 电阻	10	3	23	2.2
current (A) 电流	0.5	1.2	0.48	1
voltage 电压	5	3.6	11.04	2.2
holding torque (N.cm) 保持力矩	8	8.2	14	12
lead wires /pins 引出线 / 针脚	4	4	4	4
rotor inertia (g.cm ²) 转动惯量	10	12	13	14
weight (kg) 重量	0.13	0.135	0.14	0.13

part number 型号	39HS027MF11JX-01	39HS033MF12JX-01	39HS037MS26JX-01	39HS039MF14JB-01
length(mm) 长度	27	33	37	39
step angle deg 步距角	0.9°	0.9°	0.9°	0.9°
resistance (Ω) 电阻	11	12	26	14
current (A) 电流	0.5	0.6	0.4	0.5
voltage 电压	5.5	7.2	10.4	7
holding torque (N.cm) 保持力矩	13	20	18	20
lead wires /pins 引出线 / 针脚	4	4	6	4
rotor inertia (g.cm ²) 转动惯量	14	17	27	29
weight (kg) 重量	0.13	0.18	0.22	0.26

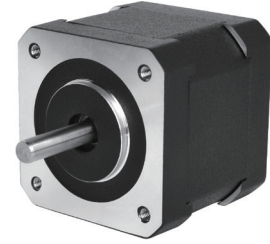
Dimensions in mm



42HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

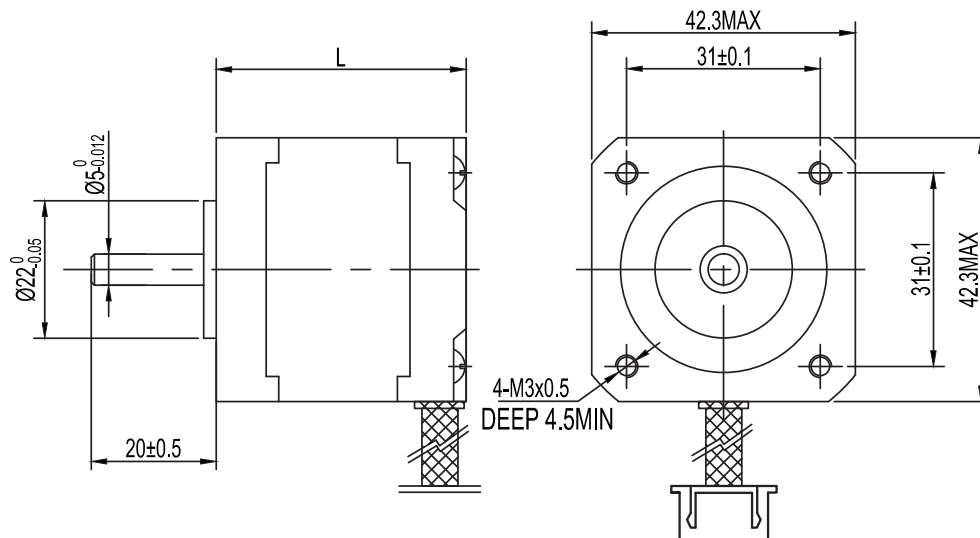


Performance Data

part number 型号	42HS028DF 250X-01	42HS034DF 130X-01	42HS040DF 090X-01	42HS044DF 80JX-01	42HS045DS 650X-01	42HS046DF 330X-01
length(mm) 长度	28	34	40	44	45	46
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	2.5	1.3	0.9	80	6.5	3.3
current (A) 电流	1.2	1.7	2.1	0.25	0.5	1.7
voltage 电压	3	2.21	1.89	20	3.25	5.61
holding torque (N.cm) 保持力矩	24	40	36	40	25	50
lead wires /pins 引出线 / 针脚	4	4	4	4	6	4
rotor inertia (g.cm ²) 转动惯量	23	38	58	75	79	82
weight (kg) 重量	0.18	0.25	0.3	0.34	0.34	0.36

part number 型号	42HS048DF120X-01	42HS050DF230X-01	42HS058DF220X-01	42HS060DE840X-01	42HS061DF460X-01
length(mm) 长度	48	50	58	60	61
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	1.2	2.3	2.2	8.4	4.6
current (A) 电流	1.7	1.2	1.7	1	1.3
voltage 电压	2.04	2.76	3.74	8.4	5.98
holding torque (N.cm) 保持力矩	22	40	67	70	83
lead wires /pins 引出线 / 针脚	4	4	4	8	4
rotor inertia (g.cm ²) 转动惯量	85	88	112	115	115
weight (kg) 重量	0.38	0.4	0.48	0.5	0.5

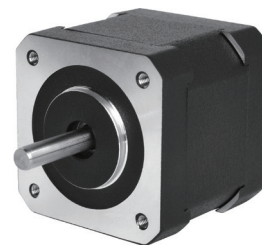
Dimensions in mm



42HSM Series (0.9 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	28N (20mm from the flange)
Max. Axial Force 最大轴向力	10N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

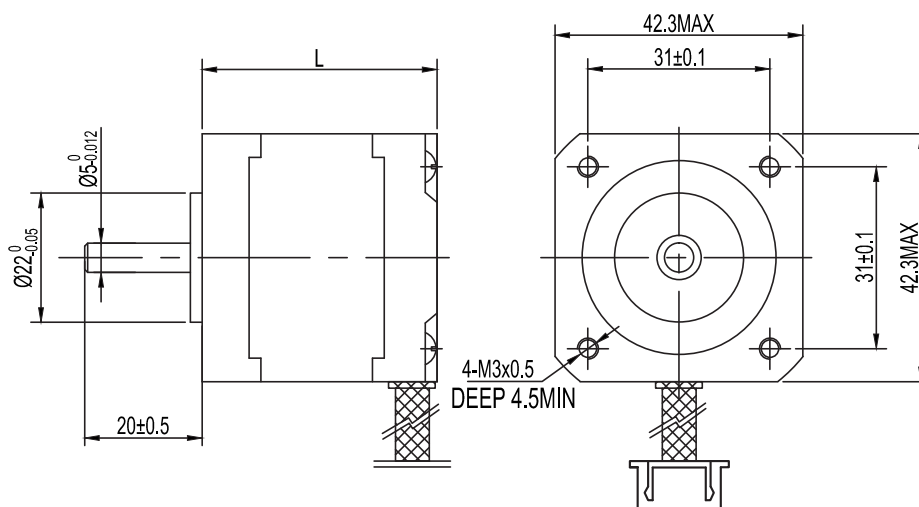


Performance Data

part number 型号	42HS021MF21JX-01	42HS025MF25JX-01	42HS028MF800X-01
length(mm) 长度	21	25	28
step angle deg 步距角	0.9°	0.9°	0.9°
resistance (Ω) 电阻	21	25	8
current (A) 电流	1.3	0.48	0.425
voltage 电压	3	12	3.4
holding torque (N.cm) 保持力矩	11	20	10
lead wires /pins 引出线 / 针脚	4	4	4
rotor inertia (g.cm ²) 转动惯量	16	18	20
weight (kg) 重量	0.13	0.15	0.18

part number 型号	42HS034MS30JX-01	42HS040MF300X-01	42HS048MF100X-01
length(mm) 长度	34	40	48
step angle deg 步距角	0.9°	0.9°	0.9°
resistance (Ω) 电阻	30	3	1
current (A) 电流	0.4	1.2	2.4
voltage 电压	12	3.6	2.4
holding torque (N.cm) 保持力矩	16	21	44
lead wires /pins 引出线 / 针脚	6	4	4
rotor inertia (g.cm ²) 转动惯量	36	56	70
weight (kg) 重量	0.25	0.3	0.38

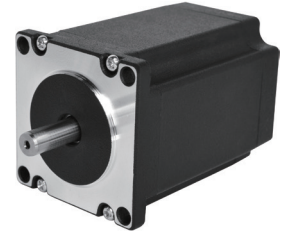
Dimensions in mm



57HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

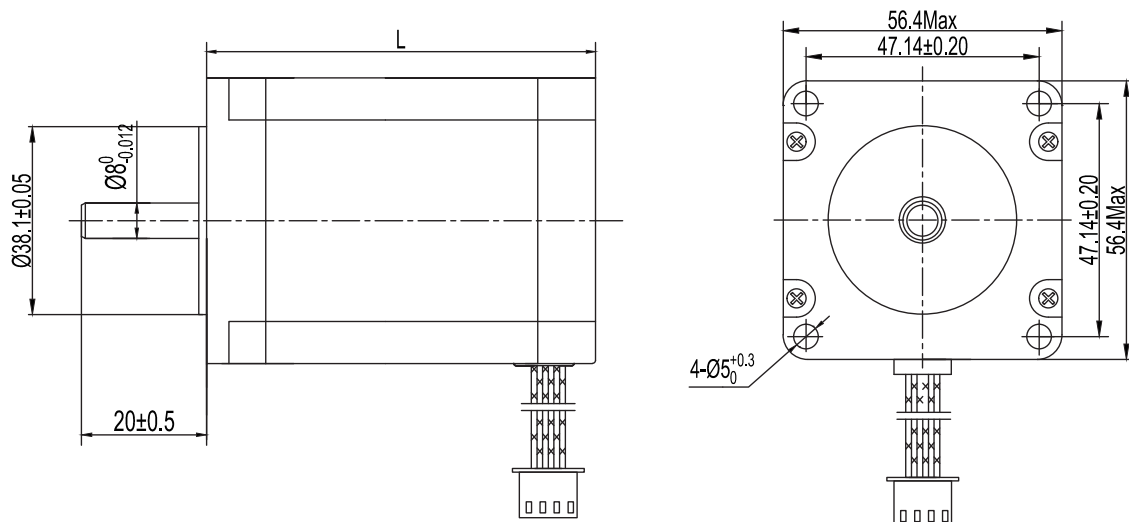


Performance Data

part number 型号	57HS041DF 052X-01	57HS045DF 12JX-01	57HS047DF 135X-01	57HS051DF 083X-01	57HS056DF 100X-01	57HS064DF 100X-01
length(mm) 长度	41	45	47	51	56	64
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	0.52	12	1.35	0.83	1	1
current (A) 电流	3	0.6	2.5	2.8	3	2
voltage 电压	1.56	7.2	3.375	2.324	3	2
holding torque (N.cm) 保持力矩	55	78	110	100	90	130
lead wires /pins 引出线 / 针脚	4	4	4	4	4	4
rotor inertia (g.cm ²) 转动惯量	135	180	210	230	280	340
weight (kg) 重量	0.47	0.49	0.51	0.57	0.65	0.82

part number 型号	57HS076DF16JX-01	57HS080DE075X-01	57HS085DF070X-01	57HS100DF070X-01	57HS112DF080X-01
length(mm) 长度	76	80	85	100	112
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	16	0.75	0.7	0.7	0.8
current (A) 电流	0.75	4	4	3	3
voltage 电压	12	3	2.8	2.1	2.4
holding torque (N.cm) 保持力矩	150	170	220	220	250
lead wires /pins 引出线 / 针脚	4	8	4	4	4
rotor inertia (g.cm ²) 转动惯量	460	500	530	650	760
weight (kg) 重量	1	1.1	1.2	1.4	1.5

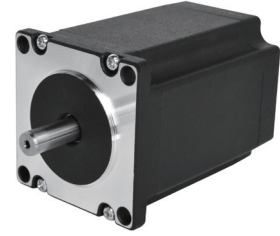
Dimensions in mm



57HSM Series (0.9 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

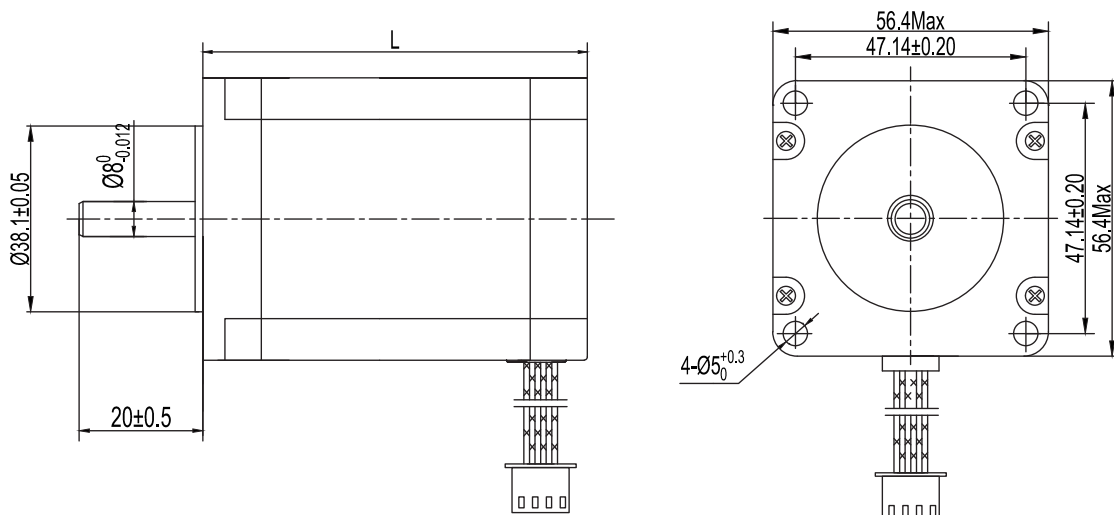


Performance Data

part number 型号	57HS041ME 048X-01	57HS051MF 600X-01	57HS056MF 160X-01	57HS076MF 200X-01
length(mm) 长度	41	51	56	76
step angle deg 步距角	0.9°	0.9°	0.9°	0.9°
resistance (Ω) 电阻	0.48	6	1.6	2
current (A) 电流	5.4	0.88	2	2
voltage 电压	2.592	5.28	3.2	4
holding torque (N.cm) 保持力矩	28	100	100	182
lead wires /pins 引出线 / 针脚	8	4	4	4
rotor inertia (g.cm ²) 转动惯量	130	220	270	450
weight (kg) 重量	0.47	0.57	0.65	1

part number 型号	57HS080ME182X-01	57HS085MF26JX-01	57HS100MF070X-01
length(mm) 长度	80	85	100
step angle deg 步距角	0.9°	0.9°	0.9°
resistance (Ω) 电阻	1.82	26	0.7
current (A) 电流	2.1	0.5	3
voltage 电压	3.822	13	2.1
holding torque (N.cm) 保持力矩	130	200	200
lead wires /pins 引出线 / 针脚	8	4	4
rotor inertia (g.cm ²) 转动惯量	490	520	630
weight (kg) 重量	1.1	1.2	1.4

Dimensions in mm



57HYD Series (1.8 degree)

General Specification

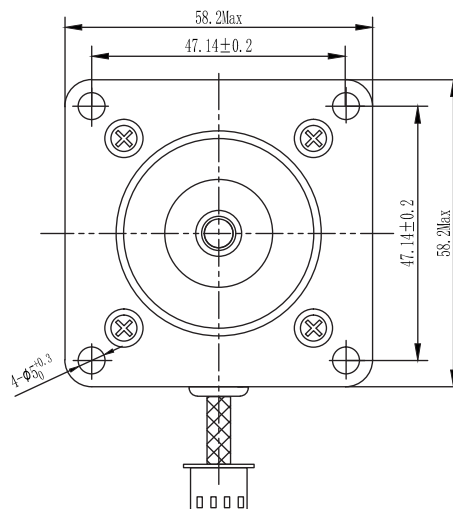
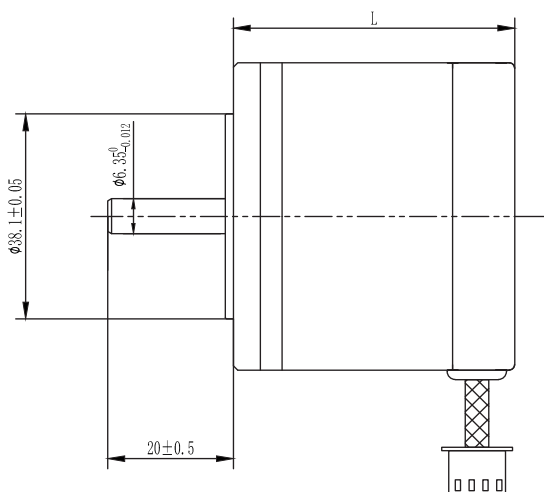
Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	57HY041DF 40JX-01	57HY051DE 500X-01	57HY055DF 200X-01	57HY056DF 093X-01	57HY076DF 360X-01
length(mm) 长度	41	51	55	56	76
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	40	5	2	0.93	3.6
current (A) 电流	0.5	1	1.4	1.5	1.5
voltage 电压	20	5	2.8	1.395	5.4
holding torque (N.cm) 保持力矩	42	53	60	70	90
lead wires /pins 引出线 / 针脚	4	8	4	4	4
rotor inertia (g.cm ²) 转动惯量	55	120	140	145	300
weight (kg) 重量	0.36	0.51	0.6	0.62	0.96

Dimensions in mm



57HYM Series (0.9 degree)

General Specification

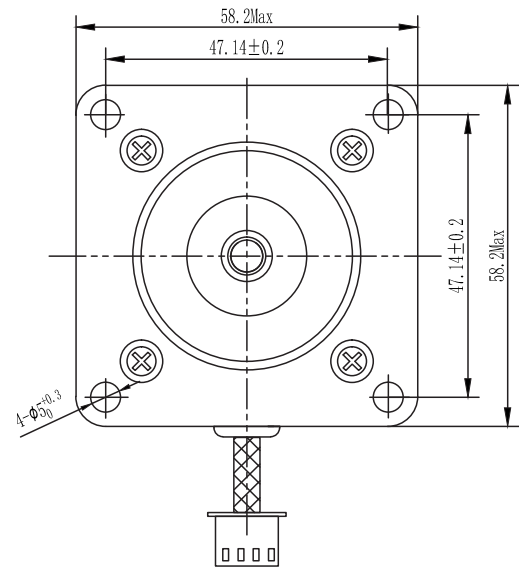
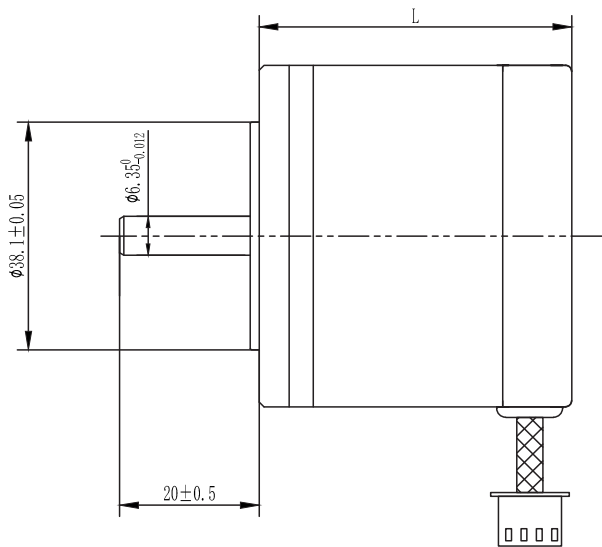
Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	57HY040MS390X-01	57HY049MS730X-01	57HY051MF15EX-01
length(mm) 长度	40	49	51
step angle deg 步距角	0.9°	0.9°	0.9°
resistance (Ω) 电阻	3.9	7.3	15.5
current (A) 电流	1	0.85	0.5
voltage 电压	3.9	6.205	7.75
holding torque (N.cm) 保持力矩	25	50	52
lead wires /pins 引出线 / 针脚	6	6	4
rotor inertia (g.cm ²) 转动惯量	50	120	125
weight (kg) 重量	0.34	0.51	0.55

Dimensions in mm



60HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

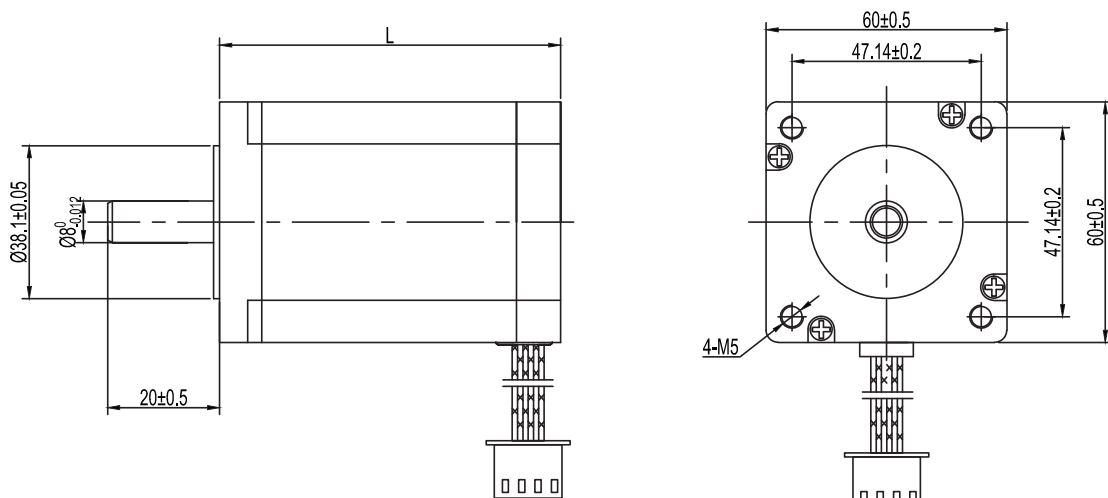


Performance Data

part number 型号	60HS044DF045X-01	60HS056DE210D-01	60HS066DS210B-01	60HS076DF100X-01
length(mm) 长度	44	56	66	76
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	0.45	2.1	2.1	1
current (A) 电流	4.2	2	2.8	3
voltage 电压	1.89	4.2	4	3
holding torque (N.cm) 保持力矩	106	120	210	210
lead wires /pins 引出线 / 针脚	4	8	6	4
rotor inertia (g.cm ²) 转动惯量	280	400	570	720
weight (kg) 重量	0.62	0.8	1.02	1.18

part number 型号	60HS078DE076X-01	60HS080DF075X-01	60HS088DE130X-01	60HS100DE100X-01
length(mm) 长度	78	80	88	100
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	0.76	0.75	1.3	1
current (A) 电流	3.5	4	3	3.5
voltage 电压	2.7	3	3.9	3.5
holding torque (N.cm) 保持力矩	208	200	215	320
lead wires /pins 引出线 / 针脚	8	4	8	8
rotor inertia (g.cm ²) 转动惯量	750	800	930	1200
weight (kg) 重量	1.2	1.3	1.48	1.65

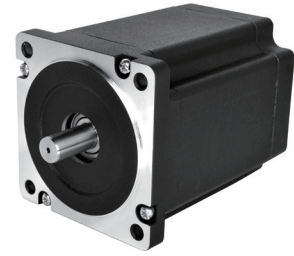
Dimensions in mm



86HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)

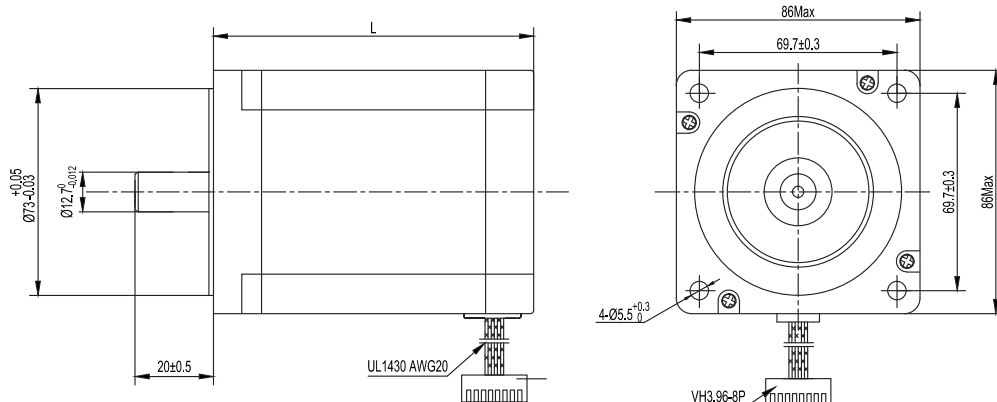


Performance Data

part number 型号	86HS065DE034X-01	86HS066DE048X-01	86HS078DF042X-01	86HS080DE075X-01	86HS090DF075X-01
length(mm) 长度	65	66	78	80	90
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	0.34	0.48	0.42	0.75	0.75
current (A) 电流	5	4.5	5.5	4	4
voltage 电压	1.7	2.16	2.31	3	3
holding torque (N.cm) 保持力矩	290	220	500	460	600
lead wires /pins 引出线 / 针脚	8	8	4	8	4
rotor inertia (g.cm ²) 转动惯量	1400	1500	1850	1900	2300
weight (kg) 重量	1.7	1.9	2.05	2.1	2.4

part number 型号	86HS096DF130X-01	86HS114DE100X-01	86HS118DE035X-01	86HS120DE100X-01	86HS150DE085X-01
length(mm) 长度	96	114	118	120	150
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	1.3	1	0.35	1	0.85
current (A) 电流	2.4	4	7.1	4.5	7
voltage 电压	3.12	4	2.485	4.5	5.95
holding torque (N.cm) 保持力矩	450	420	607	800	1200
lead wires /pins 引出线 / 针脚	4	8	8	8	8
rotor inertia (g.cm ²) 转动惯量	2700	3200	3500	3800	4500
weight (kg) 重量	2.8	3.15	3.3	3.5	4.2

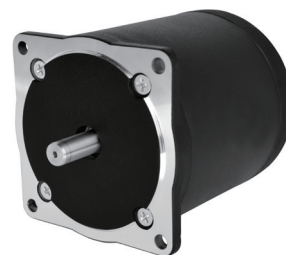
Dimensions in mm



86HYD Series (1.8 degree)

General Specification

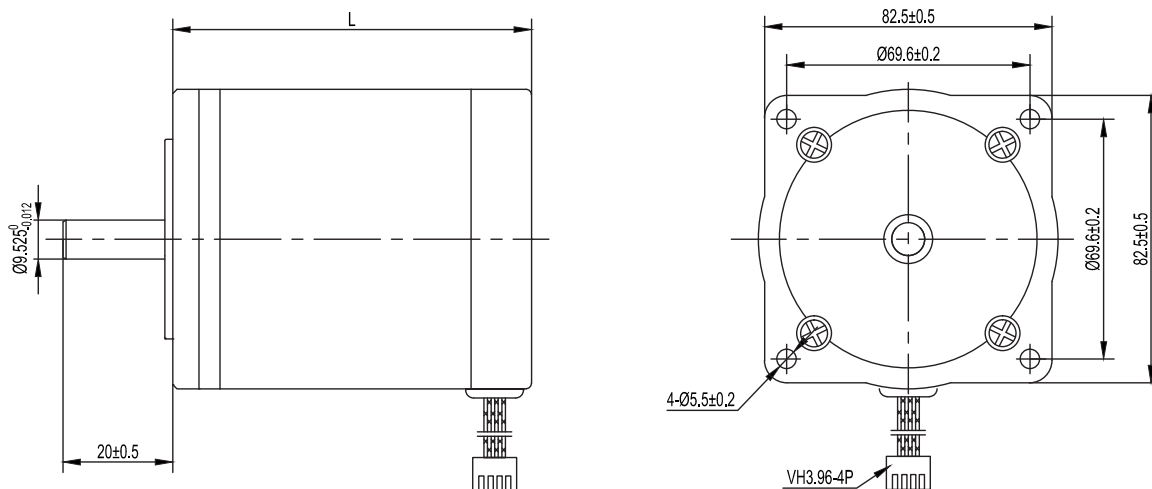
Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	86HY064DF100X-01	86HY075DF020X-01	86HY092DE270X-01	86HY112DE080X-01	86HY129DE070X-01
length(mm) 长度	64	75	92	122	129
step angle deg 步距角	1.8°	1.8°	1.8°	1.8°	1.8°
resistance (Ω) 电阻	1	0.2	2.7	0.8	0.7
current (A) 电流	2.5	6.8	2	4	5
voltage 电压	2.5	1.36	5.4	3.2	3.5
holding torque (N.cm) 保持力矩	180	160	350	480	440
lead wires /pins 引出线 / 针脚	4	4	8	8	8
rotor inertia (g.cm ²) 转动惯量	570	800	1200	1750	2100
weight (kg) 重量	1.5	1.9	2.6	3.2	3.6

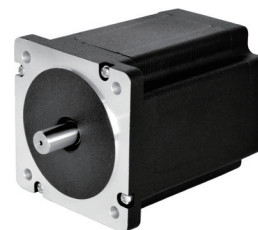
Dimensions in mm



90HSD Series (1.8 degree)

General Specification

Step Angle Accuracy 步距角精度	± 5% (full step, no load)
Resistance Accuracy 电阻公差	± 10%
Inductance Accuracy 电感公差	± 20%
Temperature Rise 温升	80°C max (rated current, 2 phase on)
Ambient Temperature 工作环境温度	-20°C ~ +50°C
Insulation Resistance 绝缘电阻	100MΩ min, 500VDC
Dielectric Strength 介电强度	500VDC for one minute
Shaft Radial Play 径向跳动	0.02mm max (450g load)
Shaft Axial Play 轴向游隙	0.08mm max (450g load)
Max. Radial Force 最大径向力	75N (20mm from the flange)
Max. Axial Force 最大轴向力	15N
Rotation 转向	CCW
Insulation Class 绝缘等级	B (130°C)



Performance Data

part number 型号	90HS065DE053X-01	90HS078DE062X-01	90HS095DE052X-01	90HS114DE065X-01	90HS150DE082X-01
length(mm) 长度	65	78	95	114	150
step angle deg 步距角	1.8	1.8	1.8	1.8	1.8
resistance (Ω) 电阻	0.53	0.62	0.52	0.65	0.82
current (A) 电流	5	5	6	6	6
voltage 电压	2.6	3.1	3.1	3.9	4.9
holding torque (N.cm) 保持力矩	320	520	700	1000	1300
lead wires /pins 引出线 / 针脚	8	8	8	8	8
rotor inertia (g.cm ²) 转动惯量	1.2	1.8	2.4	3.5	4.8
weight (kg) 重量	2200	3200	3600	4200	5100

Dimensions in mm

