56 mm sq. (2.20 inch sq.)

1.8˚ /step

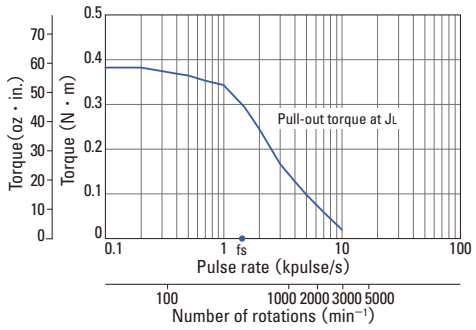
Unipolar winding · Lead wire type
Bipolar winding · Lead wire type ▶ P.40

Unipolar winding • Lead wire type

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7121-0140	**103H7121-0110**	0.39 (55.2)	1	4.8	8	0.1 (0.55)	0.47 (1.04)
103H7121-0440	**103H7121-0410**	0.39 (55.2)	2	1.25	1.9	0.1 (0.55)	0.47 (1.04)
103H7121-0740	**103H7121-0710**	0.39 (55.2)	3	0.6	0.8	0.1 (0.55)	0.47 (1.04)
103H7123-0140	**103H7123-0110**	0.83 (117.5)	1	6.7	15	0.21 (1.15)	0.65 (1.43)
103H7123-0440	**103H7123-0410**	0.83 (117.5)	2	1.6	3.8	0.21 (1.15)	0.65 (1.43)
103H7123-0740	**103H7123-0710**	0.78 (110.5)	3	0.77	1.58	0.21 (1.15)	0.65 (1.43)
103H7124-0140	**103H7124-0110**	0.98 (138.8)	1	7	14.5	0.245 (1.34)	0.8 (1.76)
103H7124-0440	**103H7124-0410**	0.98 (138.8)	2	1.7	3.1	0.245 (1.34)	0.8 (1.76)
103H7124-0740	**103H7124-0710**	0.98 (138.8)	3	0.74	1.4	0.245 (1.34)	0.8 (1.76)
103H7126-0140	**103H7126-0110**	1.27 (179.8)	1	8.6	19	0.36 (1.97)	0.98 (2.16)
103H7126-0440	**103H7126-0410**	1.27 (179.8)	2	2	4.5	0.36 (1.97)	0.98 (2.16)
103H7126-0740	**103H7126-0710**	1.27 (179.8)	3	0.9	2.2	0.36 (1.97)	0.98 (2.16)

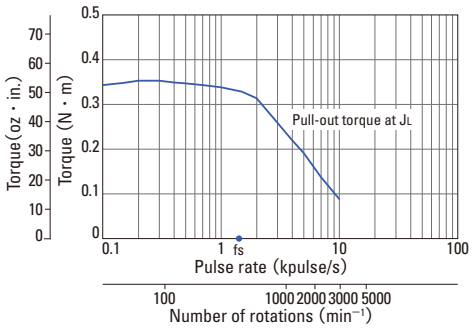
Characteristics diagram

103H7121-0140
103H7121-0110



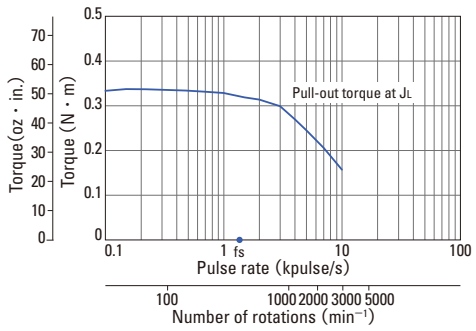
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-0440
103H7121-0410



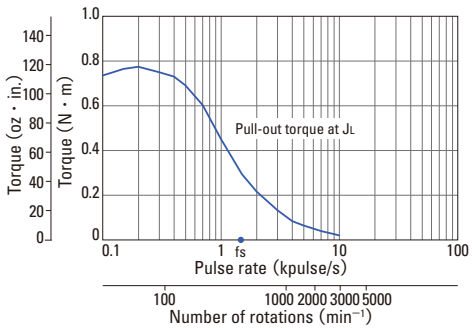
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-0740
103H7121-0710



Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-0140
103H7123-0110

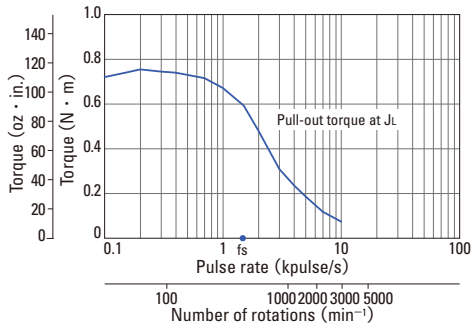


Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

Allowable Load · Internal Wiring · Rotation Direction ▶ P.56 General Specifications ▶ P.57 Motor Dimensions ▶ P.71 The data are measured under the trial conditions of SANYO DENKI.
Driving torque may vary according to actual machine precision.

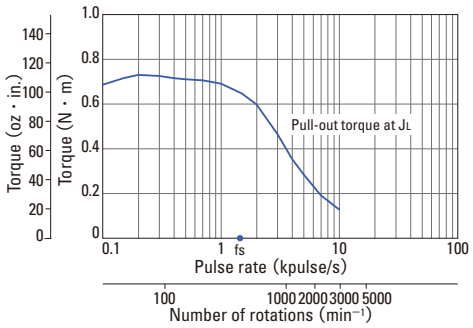
Characteristics diagram

103H7123-0440 / 103H7123-0410



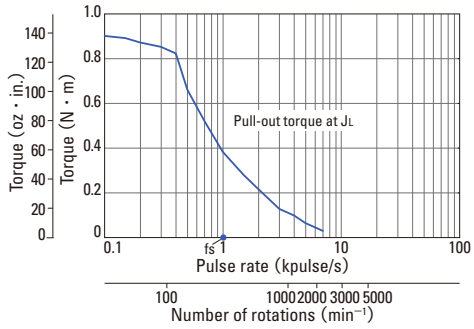
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-0740 / 103H7123-0710



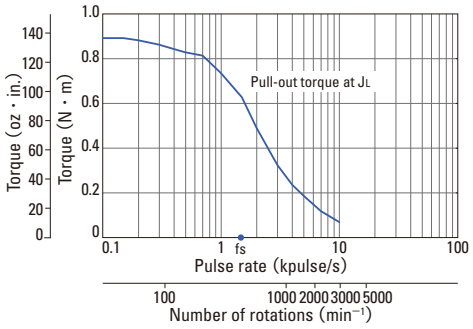
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7124-0140 / 103H7124-0110



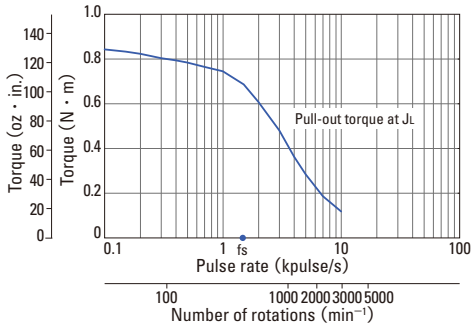
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7124-0440 / 103H7124-0410



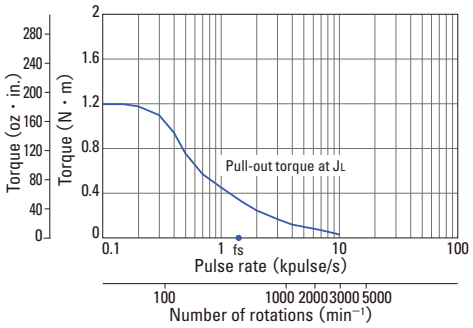
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7124-0740 / 103H7124-0710



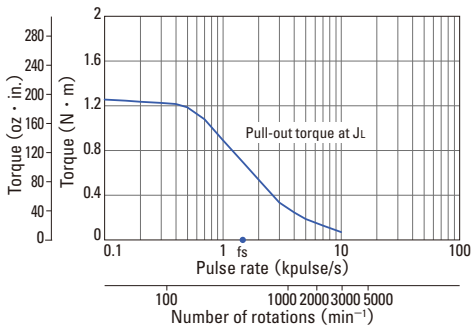
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-0140 / 103H7126-0110



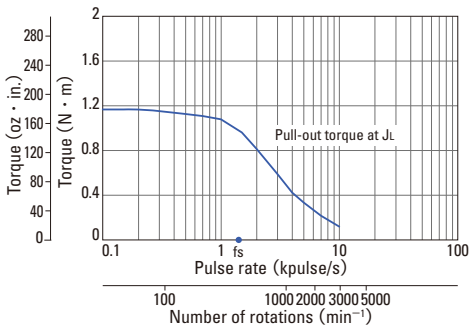
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-0440 / 103H7126-0410



Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-0740 / 103H7126-0710



Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

56 mm sq. (2.20 inch sq.)

1.8˚ /step

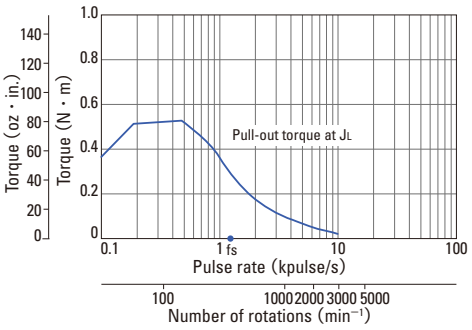
Unipolar winding · Lead wire type ▶ P.38
Bipolar winding · Lead wire type

Bipolar winding • Lead wire type

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7121-5640	**103H7121-5610**	0.55 (77.9)	1	4.3	14.5	0.1 (0.55)	0.47 (1.04)
103H7121-5740	**103H7121-5710**	0.55 (77.9)	2	1.1	3.7	0.1 (0.55)	0.47 (1.04)
103H7121-5840	**103H7121-5810**	0.55 (77.9)	3	0.54	1.74	0.1 (0.55)	0.47 (1.04)
103H7123-5640	**103H7123-5610**	1.0 (141.6)	1	5.7	29.4	0.21 (1.15)	0.65 (1.43)
103H7123-5740	**103H7123-5710**	1.0 (141.6)	2	1.5	7.5	0.21 (1.15)	0.65 (1.43)
103H7123-5840	**103H7123-5810**	1.0 (141.6)	3	0.7	3.5	0.21 (1.15)	0.65 (1.43)
103H7126-5640	**103H7126-5610**	1.6 (226.6)	1	7.7	34.6	0.36 (1.97)	0.98 (2.16)
103H7126-5740	**103H7126-5710**	1.6 (226.6)	2	2	9.1	0.36 (1.97)	0.98 (2.16)
103H7126-5840	**103H7126-5810**	1.6 (226.6)	3	0.94	4	0.36 (1.97)	0.98 (2.16)
103H7128-5640	**103H7128-5610**	2.0 (283.2)	1	8.9	40.1	0.49 (2.68)	1.3 (2.87)
103H7128-5740	**103H7128-5710**	2.0 (283.2)	2	2.3	10.4	0.49 (2.68)	1.3 (2.87)
103H7128-5840	**103H7128-5810**	2.0 (283.2)	3	1.03	4.3	0.49 (2.68)	1.3 (2.87)

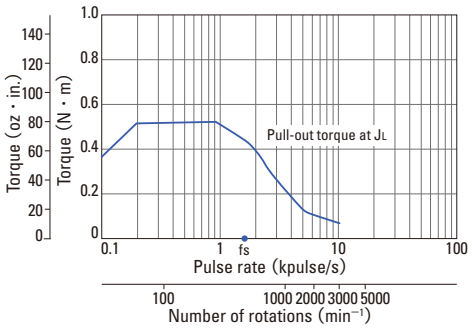
Characteristics diagram

103H7121-5640
103H7121-5610



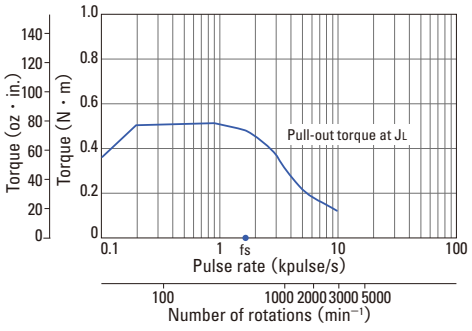
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-5740
103H7121-5710



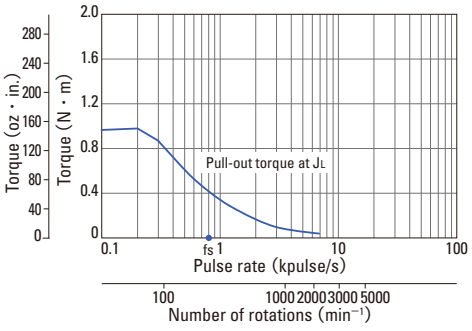
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-5840
103H7121-5810



Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-5640
103H7123-5610



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

Allowable Load · Internal Wiring · Rotation Direction ▶ P.56 General Specifications ▶ P.57 Motor Dimensions ▶ P.71 The data are measured under the trial conditions of SANYO DENKI.
Driving torque may vary according to actual machine precision.

56 mm sq. (2.20 inch sq.)

1.8˚ /step

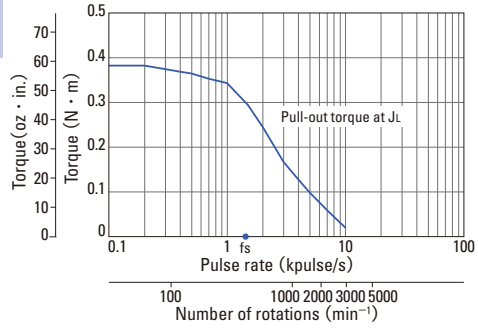
Unipolar winding · CE Model

Unipolar winding • CE Model

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7121-6140	**103H7121-6110**	0.39 (55.2)	1	4.8	8	0.1 (0.55)	0.47 (1.04)
103H7121-6740	**103H7121-6710**	0.39 (55.2)	3	0.6	0.8	0.1 (0.55)	0.47 (1.04)
103H7123-6140	**103H7123-6110**	0.83 (117.5)	1	6.7	15	0.21 (1.15)	0.65 (1.43)
103H7123-6740	**103H7123-6710**	0.78 (110.5)	3	0.77	1.58	0.21 (1.15)	0.65 (1.43)
103H7126-6140	**103H7126-6110**	1.27 (179.8)	1	8.6	19	0.36 (1.97)	0.98 (2.16)
103H7126-6740	**103H7126-6710**	1.27 (179.8)	3	0.9	2.2	0.36 (1.97)	0.98 (2.16)

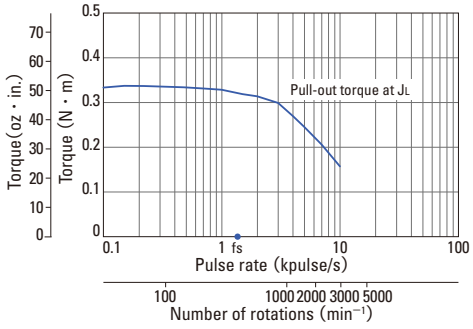
Characteristics diagram

103H7121-6140
103H7121-6110



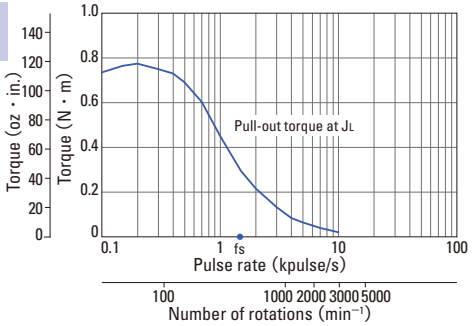
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-6740
103H7121-6710



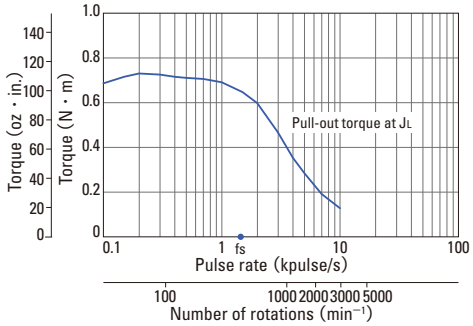
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-6140
103H7123-6110



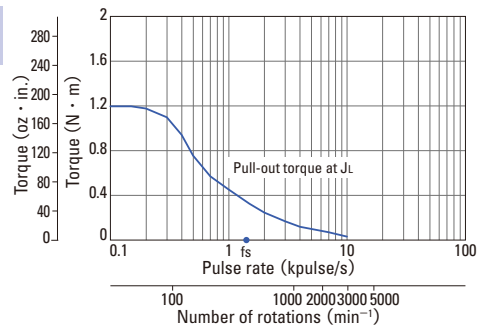
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-6740
103H7123-6710



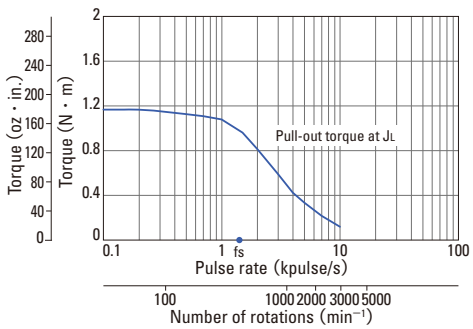
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-6140
103H7126-6110



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

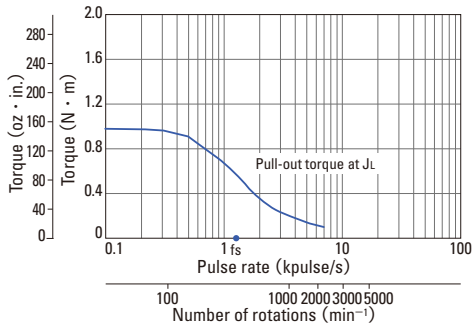
103H7126-6740
103H7126-6710



Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

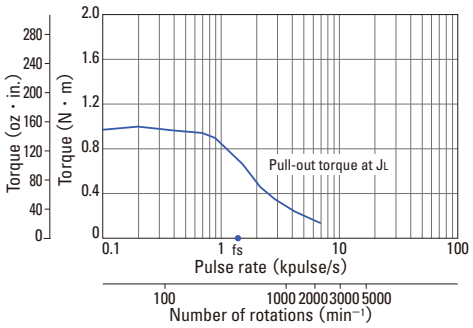
Characteristics diagram

103H7123-5740 / 103H7123-5710



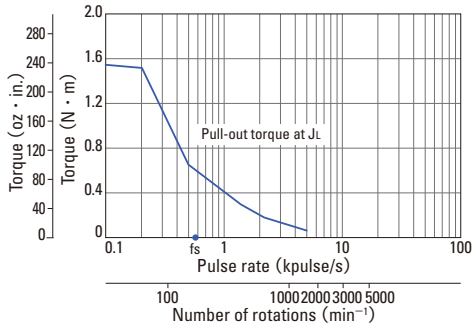
Constant current circuit
Source voltage : DC24V・operating current : 2A/phase,
2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg・m² (14.22 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-5840 / 103H7123-5810



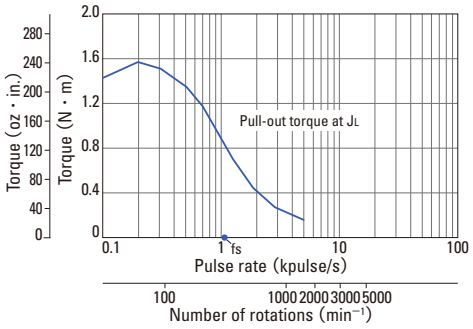
Constant current circuit
Source voltage : DC24V・Operating current : 3A/phase,
2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg・m² (14.22 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-5640 / 103H7126-5610



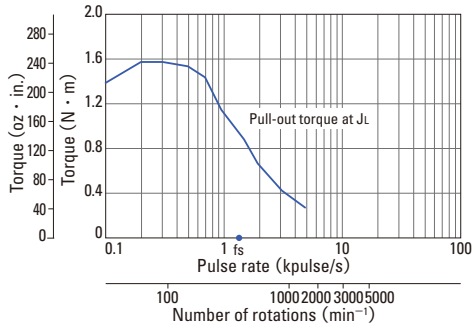
Constant current circuit
Source voltage : DC24V・Operating current : 1A/phase,
2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg・m² (14.22 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-5740 / 103H7126-5710



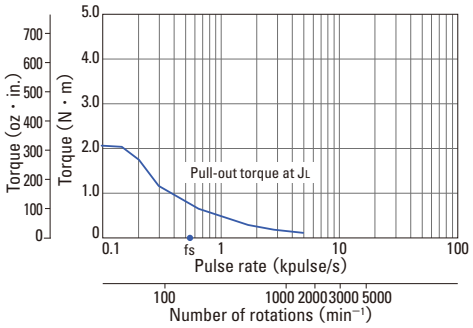
Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg・m² (14.22 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7126-5840 / 103H7126-5810



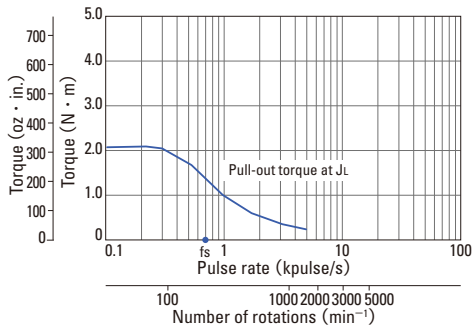
Constant current circuit
Source voltage : DC24V・Operating current : 3A/phase,
2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg・m² (14.22 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7128-5640 / 103H7128-5610



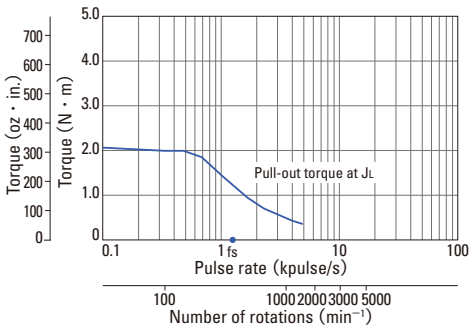
Constant current circuit
Source voltage : DC24V・Operating current : 1A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10⁻⁴kg・m² (40.46 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7128-5740 / 103H7128-5710



Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10⁻⁴kg・m² (40.46 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7128-5840 / 103H7128-5810



Constant current circuit
Source voltage : DC24V・Operating current : 3A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10-⁴kg・m2 (40.46 oz・in2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

60 mm sq. (2.36 inch sq.)

0.9˚ /step

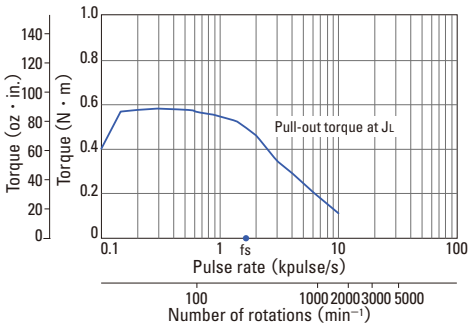
Unipolar winding · Lead wire type
Bipolar winding · Lead wire type

Unipolar winding • Lead wire type

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
SH1601-0440	**SH1601-0410**	0.57 (80.71)	2	1.35	2	0.24 (1.312)	0.55 (1.21)
SH1602-0440	**SH1602-0410**	1.1 (155.77)	2	1.8	3.5	0.4 (2.187)	0.8 (1.76)
SH1603-0440	**SH1603-0410**	1.7 (240.74)	2	2.3	4.5	0.75 (4.101)	1.2 (2.64)

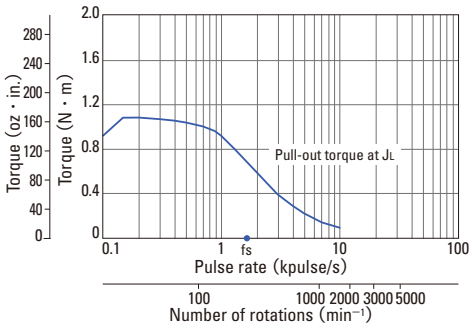
Characteristics diagram

SH1601-0440
SH1601-0410



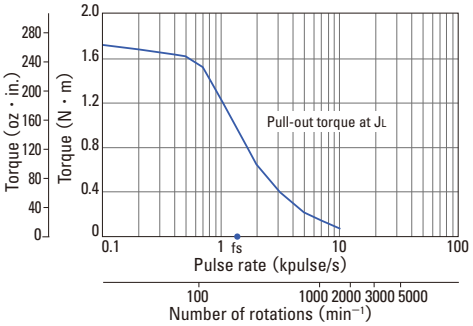
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

SH1602-0440
SH1602-0410



Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

SH1603-0440
SH1603-0410



Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
[J_L=7.4 × 10⁻⁴kg · m² (40.46 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

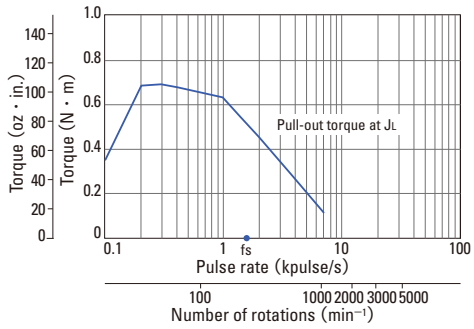
Allowable Load · Internal Wiring · Rotation Direction ▶ P.56 General Specifications ▶ P.57 Motor Dimensions ▶ P.71 The data are measured under the trial conditions of SANYO DENKI.
Driving torque may vary according to actual machine precision.

Bipolar winding • Lead wire type

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N・m (oz・in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg・m² (oz・in²)]	[kg (lbs)]
SH1601-5240	**SH1601-5210**	0.69 (97.7)	2	1.2	3.5	0.24 (1.31)	0.55 (1.21)
SH1602-5240	**SH1602-5210**	1.28 (181.2)	2	1.65	6.1	0.4 (2.19)	0.8 (1.76)
SH1603-5240	**SH1603-5210**	2.15 (304.4)	2	2.3	8.8	0.75 (4.10)	1.2 (2.65)

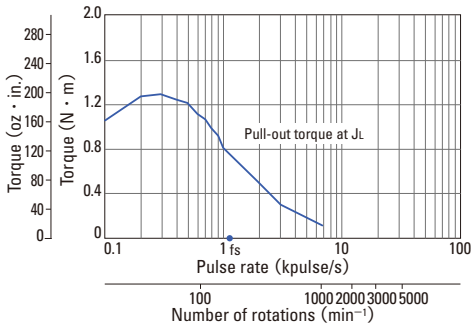
Characteristics diagram

SH1601-5240
SH1601-5210



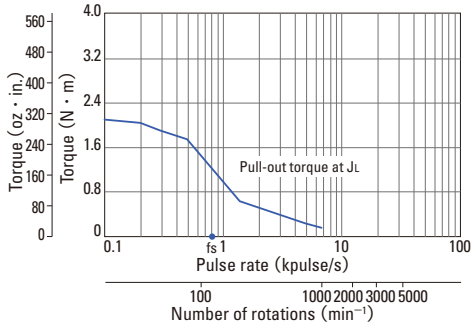
Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg・m² (5.14 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

SH1602-5240
SH1602-5210



Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg・m² (14.22 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

SH1603-5240
SH1603-5210



Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10⁻⁴kg・m² (40.46 oz・in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

60 mm sq. (2.36 inch sq.)

1.8˚ /step

Unipolar winding · Connector type
Unipolar winding · Lead wire type Dimensions for attaching NEMA23 are interchangeable (47.14 mm-pitch)
Bipolar winding · Connector type ▶ P.46
Bipolar winding · Lead wire type Dimensions for attaching NEMA23 are interchangeable (47.14 mm-pitch) ▶ P.46

Unipolar winding • Connector type

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7821-0140	**103H7821-0110**	0.78 (110.5)	1	5.7	8.3	0.275 (1.50)	0.6 (1.32)
103H7821-0440	**103H7821-0410**	0.78 (110.5)	2	1.5	2	0.275 (1.50)	0.6 (1.32)
103H7821-0740	**103H7821-0710**	0.78 (110.5)	3	0.68	0.8	0.275 (1.50)	0.6 (1.32)
103H7822-0140	**103H7822-0110**	1.17 (165.7)	1	6.9	14	0.4 (2.19)	0.77 (1.70)
103H7822-0440	**103H7822-0410**	1.17 (165.7)	2	1.8	3.6	0.4 (2.19)	0.77 (1.70)
103H7822-0740	**103H7822-0710**	1.17 (165.7)	3	0.8	1.38	0.4 (2.19)	0.77 (1.70)
103H7823-0140	**103H7823-0110**	2.1 (297.4)	1	10	21.7	0.84 (4.59)	1.34 (2.95)
103H7823-0440	**103H7823-0410**	2.1 (297.4)	2	2.7	5.6	0.84 (4.59)	1.34 (2.95)
103H7823-0740	**103H7823-0710**	2.1 (297.4)	3	1.25	2.4	0.84 (4.59)	1.34 (2.95)

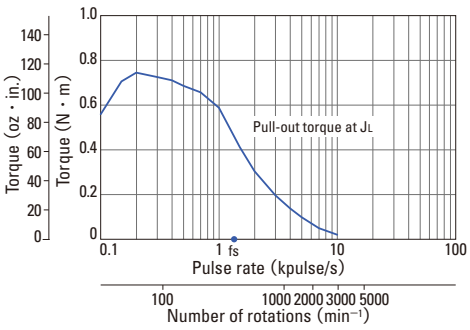
Motor cable : Model No. 4837798-1

Unipolar winding • Lead wire type Dimensions for attaching NEMA23 are interchangeable (47.14 mm-pitch)

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7821-0160	**103H7821-0130**	0.78 (110.5)	1	5.7	8.3	0.275 (1.50)	0.6 (1.32)
103H7821-0460	**103H7821-0430**	0.78 (110.5)	2	1.5	2	0.275 (1.50)	0.6 (1.32)
103H7821-0760	**103H7821-0730**	0.78 (110.5)	3	0.68	0.8	0.275 (1.50)	0.6 (1.32)
103H7822-0160	**103H7822-0130**	1.17 (165.7)	1	6.9	14	0.4 (2.19)	0.77 (1.70)
103H7822-0460	**103H7822-0430**	1.17 (165.7)	2	1.8	3.6	0.4 (2.19)	0.77 (1.70)
103H7822-0760	**103H7822-0730**	1.17 (165.7)	3	0.8	1.38	0.4 (2.19)	0.77 (1.70)
103H7823-0160	**103H7823-0130**	2.1 (297.4)	1	10	21.7	0.84 (4.59)	1.34 (2.95)
103H7823-0460	**103H7823-0430**	2.1 (297.4)	2	2.7	5.6	0.84 (4.59)	1.34 (2.95)
103H7823-0760	**103H7823-0730**	2.1 (297.4)	3	1.25	2.4	0.84 (4.59)	1.34 (2.95)

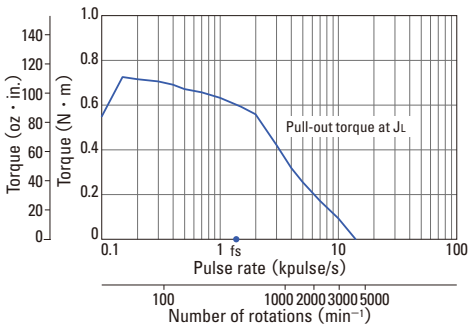
Characteristics diagram

103H7821-0140
103H7821-0110
103H7821-0160
103H7821-0130



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7821-0440
103H7821-0410
103H7821-0460
103H7821-0430

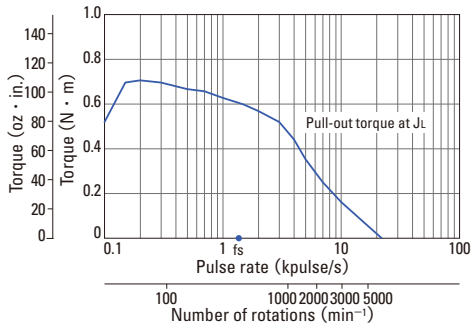


Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
J_L=[0.94 × 10⁻⁴kg · m² (5.14 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

Allowable Load · Internal Wiring · Rotation Direction ▶ P.56 General Specifications ▶ P.57 Motor Dimensions ▶ P.72 The data are measured under the trial conditions of SANYO DENKI.
Driving torque may vary according to actual machine precision.

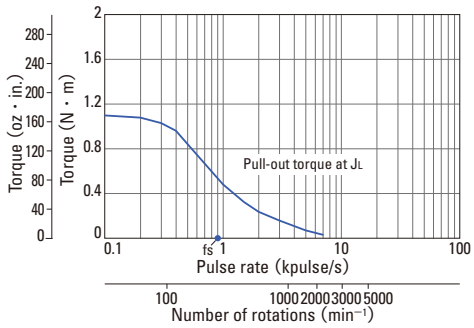
Characteristics diagram

103H7821-0740
103H7821-0710
103H7821-0760
103H7821-0730



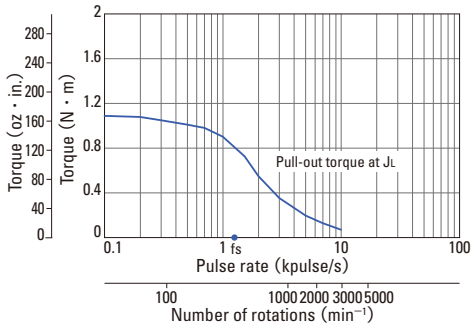
Constant current circuit
Source voltage : DC24V・Operating current : 3A/phase,
2-phase energization (full-step)
[J_L=[0.94 × 10^{-4}kg・m^2 (5.14 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7822-0140
103H7822-0110
103H7822-0160
103H7822-0130



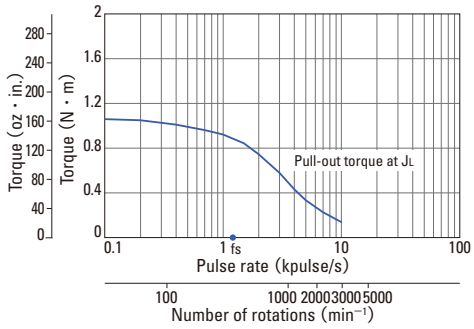
Constant current circuit
Source voltage : DC24V・Operating current : 1A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg・m^2 (40.46 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7822-0440
103H7822-0410
103H7822-0460
103H7822-0430



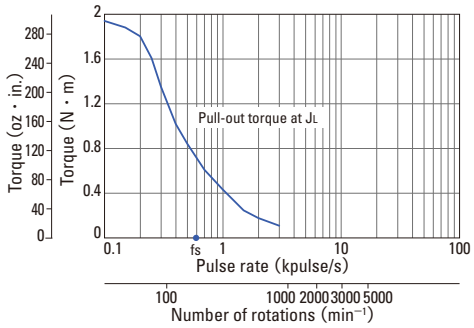
Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg・m^2 (40.46 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7822-0740
103H7822-0710
103H7822-0760
103H7822-0730



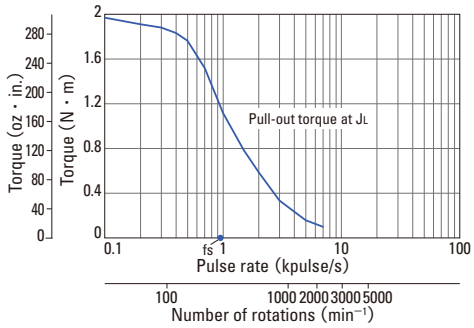
Constant current circuit
Source voltage : DC24V・Operating current : 3A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg・m^2 (40.46 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7823-0140
103H7823-0110
103H7823-0160
103H7823-0130



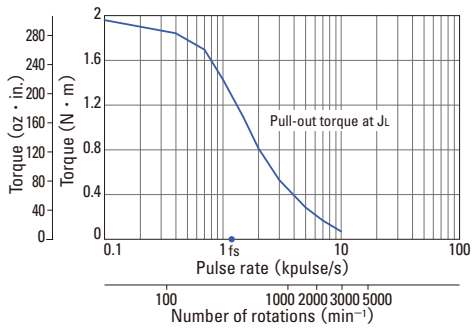
Constant current circuit
Source voltage : DC24V・Operating current : 1A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg・m^2 (40.46 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7823-0440
103H7823-0410
103H7823-0460
103H7823-0430



Constant current circuit
Source voltage : DC24V・Operating current : 2A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg・m^2 (40.46 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7823-0740
103H7823-0710
103H7823-0760
103H7823-0730



Constant current circuit
Source voltage : DC24V・Operating current : 3A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg・m^2 (40.46 oz・in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

60 mm sq. (2.36 inch sq.)

1.8˚ /step

Unipolar winding · Connector type ▶ P.44
Unipolar winding · Lead wire type Dimensions for attaching NEMA23 are interchangeable (47.14 mm-pitch) ▶ P.44
Bipolar winding · Connector type
Bipolar winding · Lead wire type Dimensions for attaching NEMA23 are interchangeable (47.14 mm-pitch)

Bipolar winding • Connector type

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7821-5740	**103H7821-5710**	0.88 (124.6)	2	1.27	3.3	0.275 (1.50)	0.6 (1.32)
103H7821-1740	**103H7821-1710**	0.88 (124.6)	4	0.35	0.8	0.275 (1.50)	0.6 (1.32)
103H7822-5740	**103H7822-5710**	1.37 (194.0)	2	1.55	5.5	0.4 (2.19)	0.77 (1.70)
103H7822-1740	**103H7822-1710**	1.37 (194.0)	4	0.43	1.38	0.4 (2.19)	0.77 (1.70)
103H7823-5740	**103H7823-5710**	2.7 (382.3)	2	2.4	9.5	0.84 (4.59)	1.34 (2.95)
103H7823-1740	**103H7823-1710**	2.7 (382.3)	4	0.65	2.4	0.84 (4.59)	1.34 (2.95)

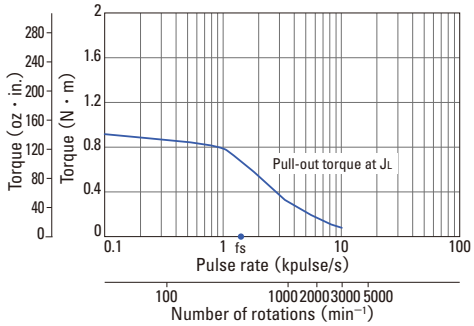
Motor cable : Model No. 4837961-1

Bipolar winding • Lead wire type Dimensions for attaching NEMA23 are interchangeable (47.14 mm-pitch)

Model number		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Dual shaft	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10⁻⁴kg · m² (oz · in²)]	[kg (lbs)]
103H7821-5760	**103H7821-5730**	0.88 (124.6)	2	1.27	3.3	0.275 (1.50)	0.6 (1.32)
103H7821-1760	**103H7821-1730**	0.88 (124.6)	4	0.35	0.8	0.275 (1.50)	0.6 (1.32)
103H7822-5760	**103H7822-5730**	1.37 (194.0)	2	1.55	5.5	0.4 (2.19)	0.77 (1.70)
103H7822-1760	**103H7822-1730**	1.37 (194.0)	4	0.43	1.38	0.4 (2.19)	0.77 (1.70)
103H7823-5760	**103H7823-5730**	2.7 (382.3)	2	2.4	9.5	0.84 (4.59)	1.34 (2.95)
103H7823-1760	**103H7823-1730**	2.7 (382.3)	4	0.65	2.4	0.84 (4.59)	1.34 (2.95)

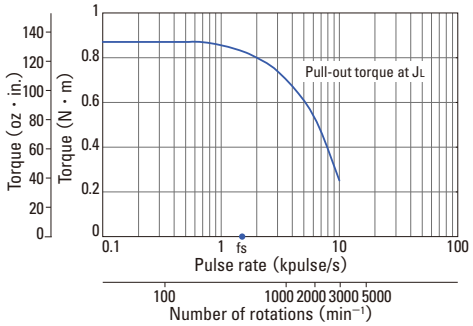
Characteristics diagram

103H7821-5740
103H7821-5710
103H7821-5760
103H7821-5730



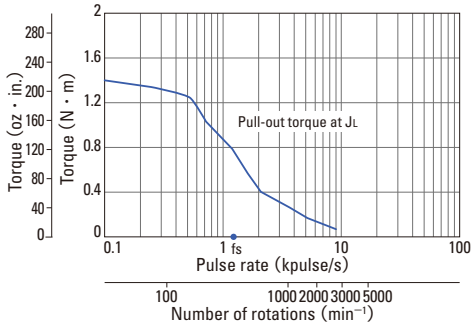
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7821-1740
103H7821-1710
103H7821-1760
103H7821-1730



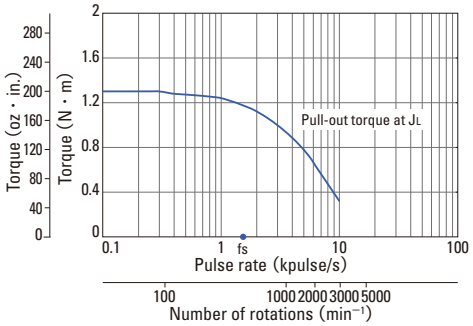
Constant current circuit
Source voltage : AC100V · operating current : 4A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7822-5740
103H7822-5710
103H7822-5760
103H7822-5730



Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7822-1740
103H7822-1710
103H7822-1760
103H7822-1730

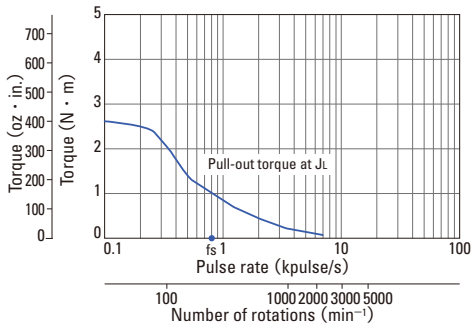


Constant current circuit
Source voltage : AC100V · operating current : 4A/phase, 2-phase energization (full-step)
J_L=[2.6 × 10⁻⁴kg · m² (14.22 oz · in²) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

Allowable Load · Internal Wiring · Rotation Direction ▶ P.56 General Specifications ▶ P.57 Motor Dimensions ▶ P.72 The data are measured under the trial conditions of SANYO DENKI.
Driving torque may vary according to actual machine precision.

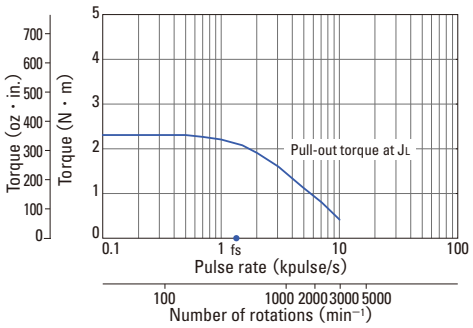
Characteristics diagram

103H7823-5740
103H7823-5710
103H7823-5760
103H7823-5730



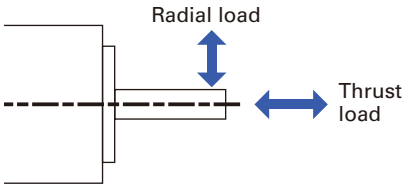
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg · m^2 (40.46 oz · in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7823-1740
103H7823-1710
103H7823-1760
103H7823-1730



Constant current circuit
Source voltage : AC100V · operating current : 4A/phase,
2-phase energization (full-step)
[J_L=7.4 × 10^{-4}kg · m^2 (40.46 oz · in^2) use the rubber coupling]
fs: Maximum self-start frequency when not loaded

Allowable Radial / Thrust Load



Flange size	Model number	Distance from end of shaft : mm (in)				Thrust load N (lbs)
		0	5	10	15	
		Radial load : N (lbs)				
14 mm sq. (0.55 in sq.)	SH2141	10 (2.25)	11 (2.47)	13 (2.92)	-	0.7 (0.16)
28 mm sq.(1.10 in sq.)	SH228 □	42 (9)	48 (10)	56 (12)	66 (14)	3 (0.67)
35 mm sq.(1.38 in sq.)	SH353 □	40 (8)	50 (11)	67 (15)	98 (22)	10 (2.25)
42 mm sq.(1.65 in sq.)	103H52 □□ SH142 □	22 (4)	26 (5)	33 (7)	46 (10)	10 (2.25)
50 mm sq.(1.97 in sq.)	103H670 □	71 (15)	87 (19)	115 (25)	167 (37)	15 (3.37)
56 mm sq.(2.20 in sq.)	103H712 □	52 (11)	65 (14)	85 (19)	123 (27)	15 (3.37)
	103H7128	85 (19)	105 (23)	138 (31)	200 (44)	15 (3.37)
60 mm sq.(2.36 in sq.)	103H782 □	70 (15)	87 (19)	114 (25)	165 (37)	20 (4.50)
	SH160 □					15 (3.37)
86 mm sq.(3.39 in sq.)	SM286 □ SH286 □	167 (37)	193 (43)	229 (51)	280 (62)	60 (13.488)
86 mm sq.(3.39 in sq.)	103H822 □	191 (43)	234 (53)	301 (68)	421 (95)	60 (13.488)
ϕ106 mm (ϕ4.17 in)	103H8922 □	321 (72)	356 (79)	401 (90)	457 (101)	100 (22.48)

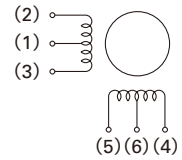
Internal Wiring and Rotation Direction

Unipolar winding

103H52 □□ Connector type

Internal wire connection

( ) connector pin number



Direction of motor rotation

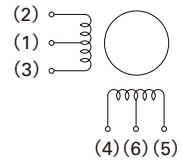
The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

		Connector pin number				
		(1.6)	(5)	(3)	(4)	(2)
Exciting order	1	+	–	–		
	2	+		–	–	
	3	+			–	–
	4	+	–			–

103H782 □□ Connector type

Internal wire connection

( ) connector pin number



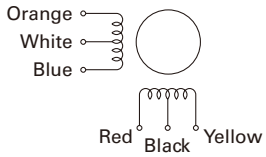
Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

		Connector pin number				
		(1.6)	(4)	(3)	(5)	(2)
Exciting order	1	+	–	–		
	2	+		–	–	
	3	+			–	–
	4	+	–			–

Lead wire type

Internal wire connection



Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

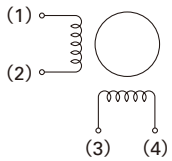
		Lead wire color				
		White & black	Red	Blue	Yellow	Orange
Exciting order	1	+	–	–		
	2	+		–	–	
	3	+			–	–
	4	+	–			–

Bipolar winding

Connector type

Internal wire connection

( ) connector pin number, terminal block number



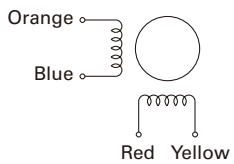
Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

		Connector pin number, terminal block number			
		(3)	(2)	(4)	(1)
Exciting order	1	–	–	+	+
	2	+	–	–	+
	3	+	+	–	–
	4	–	+	+	–

Lead wire type

Internal wire connection



Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

		Lead wire color			
		Red	Blue	Yellow	Orange
Exciting order	1	–	–	+	+
	2	+	–	–	+
	3	+	+	–	–
	4	–	+	+	–

General Specifications

Motor model number	SH2141	SH228 □	SH353 □	SS242 □	SH142 □	103H52 □□	SS250 □	103H67 □□	103H712 □
Type	—								
Operating ambient temperature	− 10℃ to + 50℃								
Conversation temperature	− 20℃ to + 65℃								
Operating ambient humidity	20 to 90% RH (no condensation)								
Conversation humidity	5 to 95% RH (no condensation)								
Operation altitude	1000m (3280 feet) MAX above sea level								
Vibration resistance	Vibration frequency 10 to 500 Hz, total amplitude 1.52 mm (10 to 70 Hz), vibration acceleration 147m/s² (70 to 500 Hz), sweep time 15 min/cycle, 12 sweeps in each X, Y and Z direction.								
Impact resistance	490m/s² of acceleration for 11 ms with half-sine wave applying three times for X, Y, and Z axes each, 18 times in total.								
Insulation class	Class B (+130℃)								
Withstand voltage	At normal temperature and humidity, no failure with 500 V AC @50/60 Hz applied for one minute between motor winding and frame.								At normal temperature and humidity, no failure with 1000 V AC @50/60 Hz applied for one minute between motor winding and frame.
Insulation resistance	At normal temperature and humidity, not less then 100MΩ between winding and frame by DC500V megger.								
Protection grade	IP40								
Winding temperature rise	80K MAX. (Based on Sanyo Denki standard)								
Static angle error	± 0.09°				± 0.054°	± 0.09°			
Axial play *1	0.075 mm (0.003 in) MAX. (load: 0.35N (0.08 lbs))	0.075 mm (0.003 in) MAX. (load: 1.5N (0.34 lbs))	0.075 mm (0.003 in) MAX. (load: 5N (1.12 lbs))	0.075 mm (0.003 in) MAX. (load: 4N (0.9 lbs))	0.075 mm (0.003 in) MAX. (load: 5N (1.12 lbs))	0.075 mm (0.003 in) (load: 5N (1.12 lbs))	0.075 mm (0.003 in) MAX. (load: 4N (0.9 lbs))	0.075 mm (0.003 in) (load: 10N (2.25 lbs))	0.075 mm (0.003 in) (load: 10N (2.25 lbs))
Radial play *2	0.025 mm (0.001 in) MAX. (load: 5N (1.12 lbs))								
Shaft runout	0.025 mm (0.001 in)								
Concentricity of mounting pilot relative to shaft	ϕ 0.05 mm (ϕ 0.002 in)	ϕ 0.05 mm (ϕ 0.002 in)	ϕ 0.075 mm (ϕ 0.003 in)	ϕ 0.075 mm (ϕ 0.003 in)	ϕ 0.05 mm (ϕ 0.002 in)	ϕ 0.05 mm (ϕ 0.002 in)	ϕ 0.075 mm (ϕ 0.003 in)	ϕ 0.075 mm (ϕ 0.003 in)	ϕ 0.075 mm (ϕ 0.003 in)
Squareness of mounting surface relative to shaft	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.075 mm (0.003 in)	0.075 mm (0.003 in)

Motor model number	SH160 □	103H78 □□	SH286 □	103H8922 □	SM286 □	103H712 □ -6 □□ 0 CE Model	103H822 □ -6 □□ 0 CE Model	103H8922 □ -63 □ 1 CE Model
Type	—				S1 (continuous operation)			
Operating ambient temperature	− 10℃ to + 50℃				− 10℃ to + 40℃			
Conversation temperature	− 20℃ to + 65℃				− 20℃ to + 60℃			
Operating ambient humidity	20 to 90% RH (no condensation)				95%MAX. : 40℃ MAX., 57%MAX. : 50℃ MAX., 35%MAX. : 60℃ MAX. (no condensation)			
Conversation humidity	5 to 95% RH (no condensation)							
Operation altitude	1000m (3280 feet) MAX above sea level							
Vibration resistance	Vibration frequency 10 to 500 Hz, total amplitude 1.52 mm (10 to 70 Hz), vibration acceleration 147m/s² (70 to 500 Hz), sweep time 15 min/cycle, 12 sweeps in each X, Y and Z direction.							
Impact resistance	490m/s² of acceleration for 11 ms with half-sine wave applying three times for X, Y and Z axes each, 18 times in total.							
Insulation class	Class B (+130℃)				Class F (+155℃)	Class B (+130℃)		
Withstand voltage	At normal temperature and humidity, no failure with 1000 V AC @50/60 Hz applied for one minute between motor winding and frame.			At normal temperature and humidity, no failure with 1500 V AC @50/60 Hz applied for one minute between motor winding and frame.				
Insulation resistance	At normal temperature and humidity, not less then 100MΩ between winding and frame by DC500V megger.							
Protection grade	IP40				IP43			
Winding temperature rise	80K MAX. (Based on Sanyo Denki standard)							
Static angle error	± 0.054°	± 0.09°						
Axial play *1	0.075 mm (0.003 in) MAX. (load: 10N (2.25 lbs))							
Radial play *2	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 10N (2.25 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 10N (2.25 lbs))
Shaft runout	0.025 mm (0.001 in)							
Concentricity of mounting pilot relative to shaft	ϕ 0.075 mm (ϕ 0.003 in)							
Squareness of mounting surface relative to shaft	0.1 mm (0.004 in)	0.075 mm (0.003 in)	0.15 mm (0.006 in)	0.1 mm (0.004 in)	0.15 mm (0.006 in)	0.075 mm (0.003 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)

*1 Axial play: Shaft displacement under axial load.
*2 Radial play: Shaft displacement under radial load applied 1/3rd of the length from the end of the shaft.

Safety standards

Model Number: SM286 □ CE • UL marked models

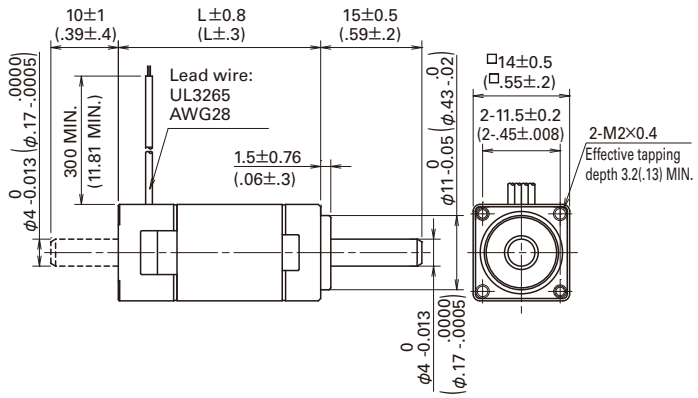
CE (TÜV)	Standard category		Standard part
	Low-voltage directives		EN60034-1, EN60034-5
UL	Acquired standards	Standard part	File No.
	UL	UL1004-1	E179832
	UL for Canada		

Model Number: 103H712 □ -6 □□ 0, 103H822 □ -6 □□ 0, 103H8922 □ -63 □ 1 CE marked model

CE (TÜV)	Standard category	Standard part
	Low-voltage directives	EN60034-1, EN60034-5

Stepping motors [Unit: mm (inch)]

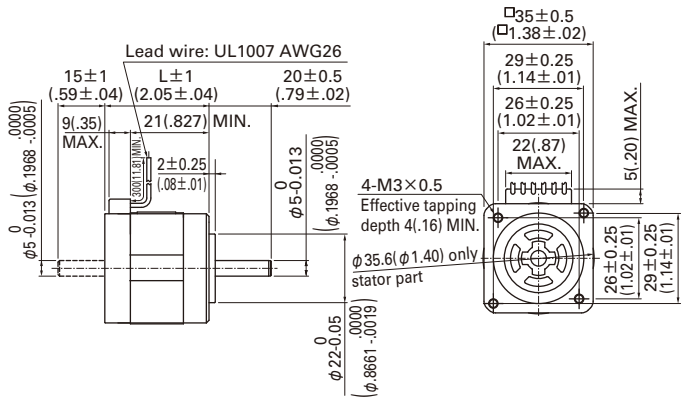
14 mm sq. (0.55 inch sq.)



Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH2141-5541	SH2141-5511	30 (1.18)

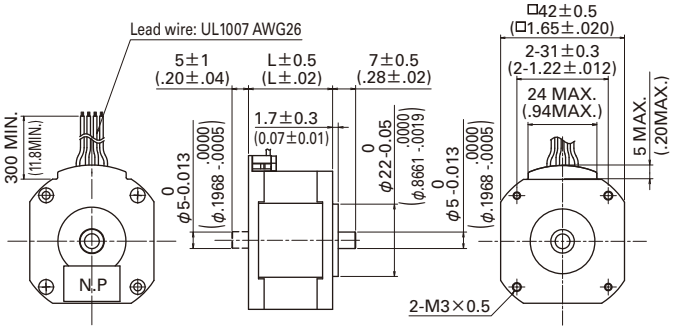
35 mm sq. (1.65 inch sq.)



Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH3533-12U40	SH3533-12U10	33 (1.25)
–	–	SH3537-12U40	SH3537-12U10	37 (1.54)
–	–	SH3552-12U40	SH3552-12U10	52 (1.89)

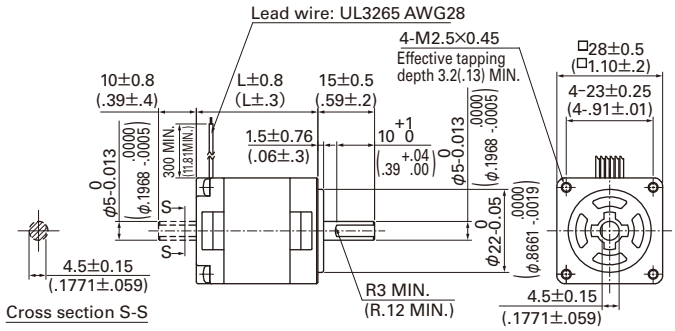
42 mm sq. (1.65 inch sq.)



Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SS2421-5041	SS2421-5011	11.6 (.457)
–	–	SS2422-5041	SS2422-5011	18.6 (.732)

28 mm sq. (1.10 inch sq.)



Note: A unipolar motor is illustrated; bipolar motors have four lead wires.

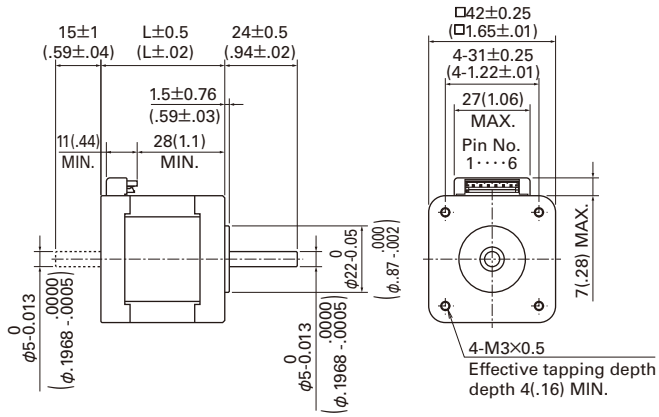
Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH2281-5171	SH2281-5131	32 (1.26)
DU14S281S	DU14S281D	SH2281-5271	SH2281-5231	32 (1.26)
–	–	SH2285-5171	SH2285-5131	51.5 (2.03)
DU14S285S	DU14S285D	SH2285-5271	SH2285-5231	51.5 (2.03)

Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH2281-5671	SH2281-5631	32 (1.26)
DB14S281S	DB14S281D	SH2281-5771	SH2281-5731	32 (1.26)
–	–	SH2285-5671	SH2285-5631	51.5 (2.03)
DB14S285S	DB14S285D	SH2285-5771	SH2285-5731	51.5 (2.03)

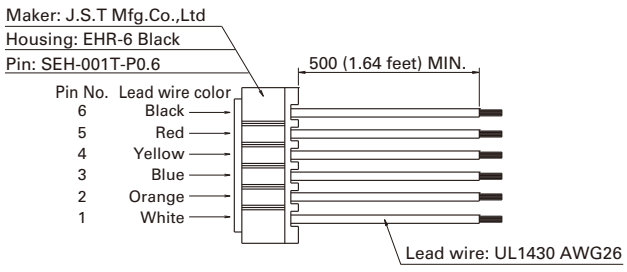
42 mm sq. (1.65 inch sq.)



Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
DU15H521S	DU15H521D	103H5205-0440	103H5205-0410	33 (1.25)
DU15H522S	DU15H522D	103H5208-0440	103H5208-0410	39 (1.54)
–	–	103H5209-0440	103H5209-0410	41 (1.61)
DU15H524S	DU15H524D	103H5210-0440	103H5210-0410	48 (1.89)

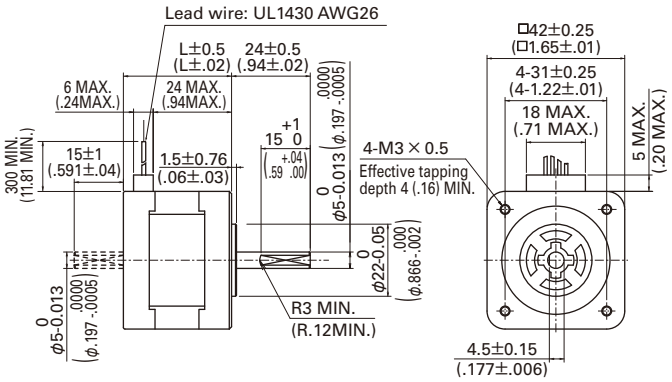
Motor cable Model number: 4835710-1



This driver-motor cable is for motor model numbers 103H52□□-04□□.

Stepping motors [Unit: mm (inch)]

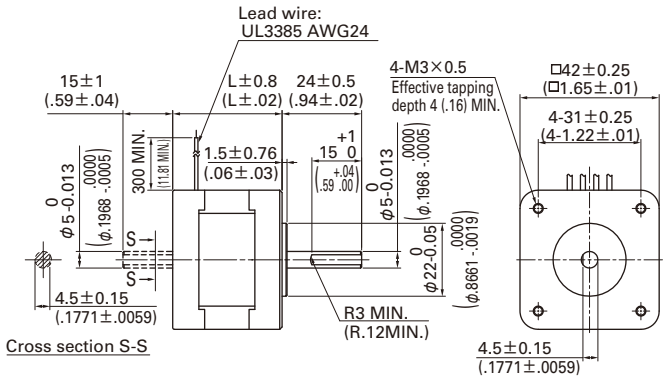
42 mm sq. (1.65 inch sq.)



Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H5205-5040	103H5205-5010	33 (1.25)
–	–	103H5205-5140	103H5205-5110	33 (1.25)
DB14H521S	DB14H521D	103H5205-5240	103H5205-5210	33 (1.25)
–	–	103H5208-5040	103H5208-5010	39 (1.54)
–	–	103H5208-5140	103H5208-5110	39 (1.54)
DB14H522S	DB14H522D	103H5208-5240	103H5208-5210	39 (1.54)
–	–	103H5209-5040	103H5209-5010	41 (1.61)
–	–	103H5209-5140	103H5209-5110	41 (1.61)
–	–	103H5209-5240	103H5209-5210	41 (1.61)
–	–	103H5210-5040	103H5210-5010	48 (1.89)
–	–	103H5210-5140	103H5210-5110	48 (1.89)
DB14H524S	DB14H524D	103H5210-5240	103H5210-5210	48 (1.89)

42 mm sq. (1.65 inch sq.)



Note: A bipolar motor is illustrated; unipolar motors have six lead wires.

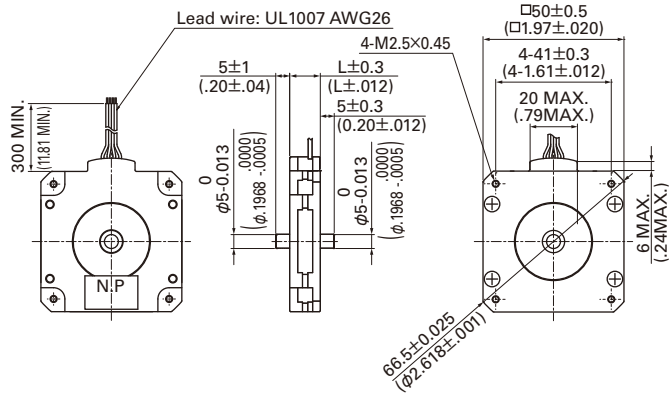
Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
DU15S141S	DU15S141D	SH1421-0441	SH1421-0411	33 (1.25)
DU15S142S	DU15S142D	SH1422-0441	SH1422-0411	39 (1.54)
DU15S144S	DU15S144D	SH1424-0441	SH1424-0411	48 (1.89)

Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH1421-5041	SH1421-5011	33 (1.25)
DB16S141S	DB16S141D	SH1421-5241	SH1421-5211	33 (1.25)
–	–	SH1422-5041	SH1422-5011	39 (1.54)
DB16S142S	DB16S142D	SH1422-5241	SH1422-5211	39 (1.54)
–	–	SH1424-5041	SH1424-5011	48 (1.89)
DB16S144S	DB16S144D	SH1424-5241	SH1424-5211	48 (1.89)

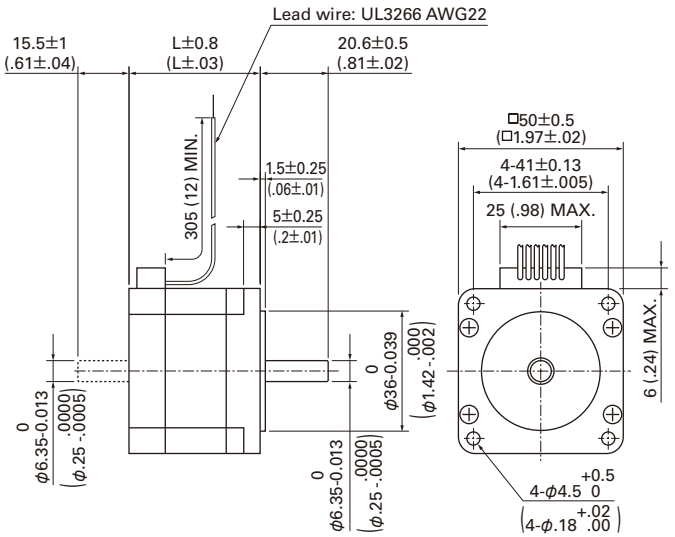
50 mm sq. (1.97 inch sq.)



Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SS2501-8040	SS2501-8010	11.4 (.43)
–	–	SS2502-8040	SS2502-8010	16.4 (.63)

50 mm sq. (1.97 inch sq.)



Note: A unipolar motor is illustrated; bipolar motors have four lead wires.

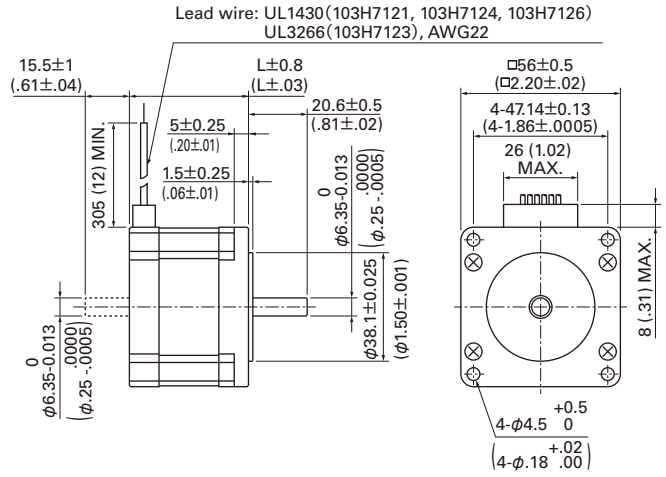
Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H6701-0140	103H6701-0110	39.8 (1.57)
–	–	103H6701-0440	103H6701-0410	39.8 (1.57)
–	–	103H6701-0740	103H6701-0710	39.8 (1.57)
–	–	103H6703-0140	103H6703-0110	51.3 (2.02)
–	–	103H6703-0440	103H6703-0410	51.3 (2.02)
–	–	103H6703-0740	103H6703-0710	51.3 (2.02)
–	–	103H6704-0140	103H6704-0110	55.8 (2.20)
–	–	103H6704-0440	103H6704-0410	55.8 (2.20)
–	–	103H6704-0740	103H6704-0710	55.8 (2.20)

Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
DB16H671S	DB16H671D	103H6701-5040	103H6701-5010	39.8 (1.57)
DB16H673S	DB16H673D	103H6703-5040	103H6703-5010	51.3 (2.02)
–	–	103H6704-5040	103H6704-5010	55.8 (2.20)

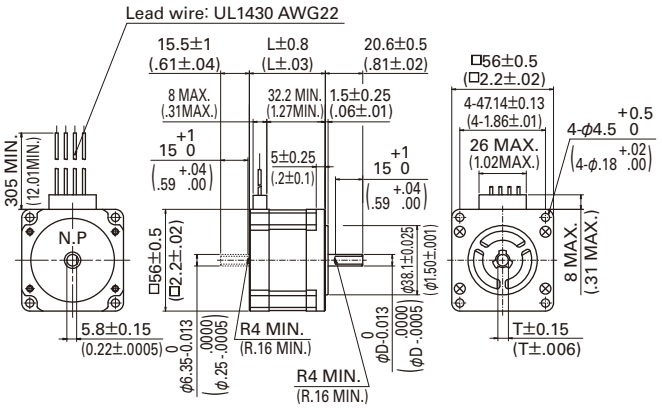
56 mm sq. (2.20 inch sq.)



Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H7121-0140	103H7121-0110	41.8 (1.65)
DU16H711S	DU16H711D	103H7121-0440	103H7121-0410	41.8 (1.65)
–	–	103H7121-0740	103H7121-0710	41.8 (1.65)
–	–	103H7123-0140	103H7123-0110	53.8 (2.12)
DU16H713S	DU16H713D	103H7123-0440	103H7123-0410	53.8 (2.12)
–	–	103H7123-0740	103H7123-0710	53.8 (2.12)
–	–	103H7124-0140	103H7124-0110	63.8 (2.51)
–	–	103H7124-0440	103H7124-0410	63.8 (2.51)
–	–	103H7124-0740	103H7124-0710	63.8 (2.51)
–	–	103H7126-0140	103H7126-0110	75.8 (2.98)
DU16H716S	DU16H716D	103H7126-0440	103H7126-0410	75.8 (2.98)
–	–	103H7126-0740	103H7126-0710	75.8 (2.98)

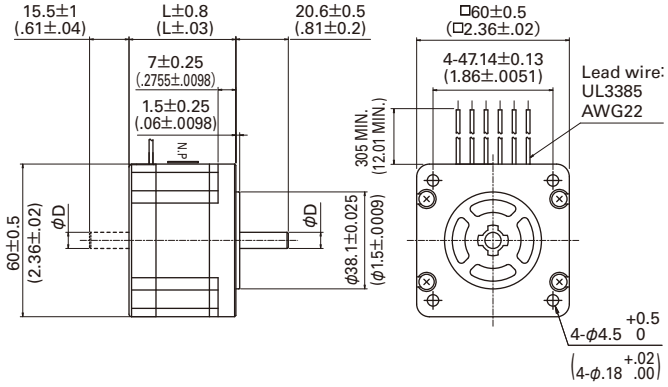
56 mm sq. (2.20 inch sq.)



Bipolar

Set model number		Motor model number		Motor length (L)	Shaft diameter (D)	Dcut thickness (T)
Single shaft	Dual shaft	Single shaft	Dual shaft			
–	–	103H7121-5640	103H7121-5610	41.8 (1.65)	φ 6.35 (φ 0.25)	5.8 (0.23)
DB16H711S	DB16H711D	103H7121-5740	103H7121-5710	41.8 (1.65)	φ 6.35 (φ 0.25)	5.8 (0.23)
–	–	103H7121-5840	103H7121-5810	41.8 (1.65)	φ 6.35 (φ 0.25)	5.8 (0.23)
–	–	103H7123-5640	103H7123-5610	53.8 (2.12)	φ 6.35 (φ 0.25)	5.8 (0.23)
DB16H713S	DB16H713D	103H7123-5740	103H7123-5710	53.8 (2.12)	φ 6.35 (φ 0.25)	5.8 (0.23)
–	–	103H7123-5840	103H7123-5810	53.8 (2.12)	φ 6.35 (φ 0.25)	5.8 (0.23)
–	–	103H7126-5640	103H7126-5610	75.8 (2.98)	φ 6.35 (φ 0.25)	5.8 (0.23)
DB16H716S	DB16H716D	103H7126-5740	103H7126-5710	75.8 (2.98)	φ 6.35 (φ 0.25)	5.8 (0.23)
–	–	103H7126-5840	103H7126-5810	75.8 (2.98)	φ 6.35 (φ 0.25)	5.8 (0.23)
–	–	103H7128-5640	103H7128-5610	94.8 (3.73)	φ 8 (φ 0.31)	7.5 (0.30)
–	–	103H7128-5740	103H7128-5710	94.8 (3.73)	φ 8 (φ 0.31)	7.5 (0.30)
–	–	103H7128-5840	103H7128-5810	94.8 (3.73)	φ 8 (φ 0.31)	7.5 (0.30)

60 mm sq. (2.36 inch sq.)



Note: A unipolar motor is illustrated; bipolar motors have four lead wires.

Unipolar

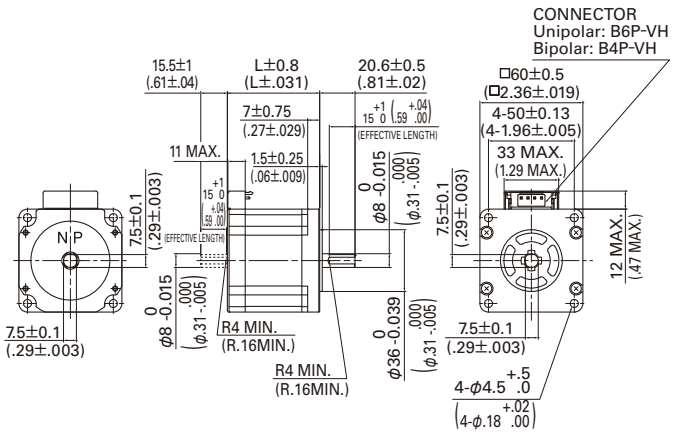
Set model number		Motor model number		Motor length (L)	Shaft diameter (D)
Single shaft	Dual shaft	Single shaft	Dual shaft		
–	–	SH1601-0440	SH1601-0410	42 (1.65)	φ 6.35 0 -0.013 (φ .25 .0000 -.0005)
–	–	SH1602-0440	SH1602-0410	54 (2.13)	φ 6.35 0 -0.013 (φ .25 .0000 -.0005)
–	–	SH1603-0440	SH1603-0410	76 (2.99)	φ 8 0 -0.015 (φ .31 .0000 -.0006)

Bipolar

Set model number		Motor model number		Motor length (L)	Shaft diameter (D)
Single shaft	Dual shaft	Single shaft	Dual shaft		
DB16S161S	DB16S161D	SH1601-5240	SH1601-5210	42 (1.65)	φ 6.35 0 -0.013 (φ .25 .0000 -.0005)
DB16S162S	DB16S162D	SH1602-5240	SH1602-5210	54 (2.13)	φ 6.35 0 -0.013 (φ .25 .0000 -.0005)
–	–	SH1603-5240	SH1603-5210	76 (2.99)	φ 8 0 -0.015 (φ .31 .0000 -.0006)

Stepping motors [Unit: mm (inch)]

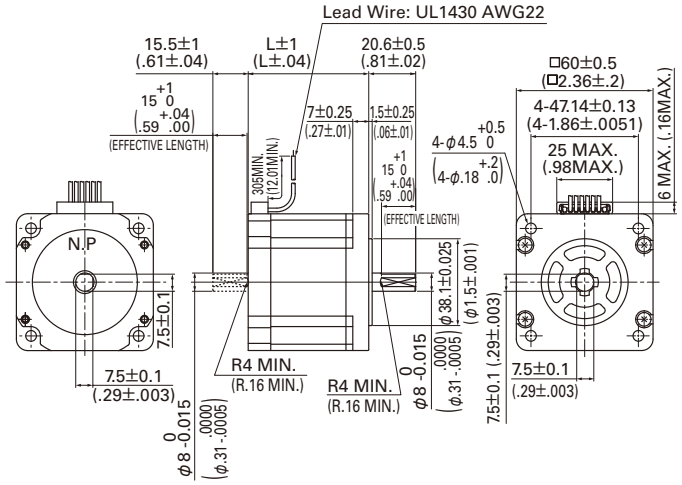
60 mm sq. (2.36 inch sq.)



Note: A bipolar motor is illustrated.

60 mm sq. (2.36 inch sq.)

(Dimensions for attaching NEMA23 are interchangeable)



Note: A unipolar motor is illustrated; bipolar motors have four lead wires.

Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H7821-0140	103H7821-0110	44.8 (1.76)
–	–	103H7821-0440	103H7821-0410	44.8 (1.76)
–	–	103H7821-0740	103H7821-0710	44.8 (1.76)
–	–	103H7822-0140	103H7822-0110	53.8 (2.12)
–	–	103H7822-0440	103H7822-0410	53.8 (2.12)
–	–	103H7822-0740	103H7822-0710	53.8 (2.12)
–	–	103H7823-0140	103H7823-0110	85.8 (3.38)
–	–	103H7823-0440	103H7823-0410	85.8 (3.38)
–	–	103H7823-0740	103H7823-0710	85.8 (3.38)

Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
DB16H781S	DB16H781D	103H7821-5740	103H7821-5710	44.8 (1.76)
DB16H782S	DB16H782D	103H7822-5740	103H7822-5710	53.8 (2.12)
DB16H783S	DB16H783D	103H7823-5740	103H7823-5710	85.8 (3.38)
–	–	103H7821-1740	103H7821-1710	44.8 (1.76)
–	–	103H7822-1740	103H7822-1710	53.8 (2.12)
–	–	103H7823-1740	103H7823-1710	85.8 (3.38)

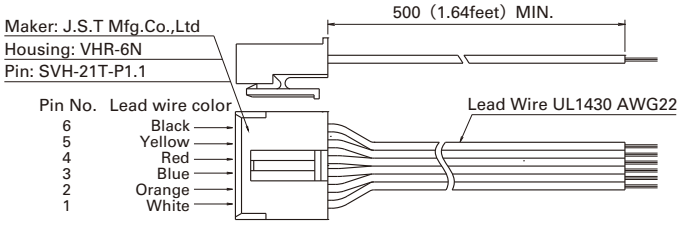
Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H7821-0160	103H7821-0130	43.5 (1.71)
–	–	103H7821-0460	103H7821-0430	43.5 (1.71)
–	–	103H7821-0760	103H7821-0730	43.5 (1.71)
–	–	103H7822-0160	103H7822-0130	52.5 (2.07)
–	–	103H7822-0460	103H7822-0430	52.5 (2.07)
–	–	103H7822-0760	103H7822-0730	52.5 (2.07)
–	–	103H7823-0160	103H7823-0130	84.5 (3.33)
–	–	103H7823-0460	103H7823-0430	84.5 (3.33)
–	–	103H7823-0760	103H7823-0730	84.5 (3.33)

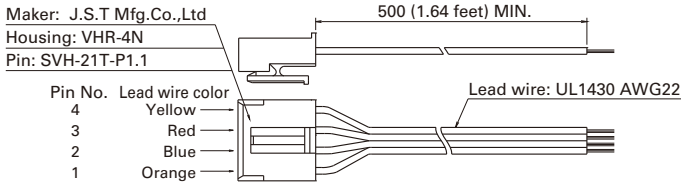
Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H7821-5760	103H7821-5730	43.5 (1.71)
–	–	103H7821-1760	103H7821-1730	43.5 (1.71)
–	–	103H7822-5760	103H7822-5730	52.5 (2.07)
–	–	103H7822-1760	103H7822-1730	52.5 (2.07)
–	–	103H7823-5760	103H7823-5730	84.5 (3.33)
–	–	103H7823-1760	103H7823-1730	84.5 (3.33)

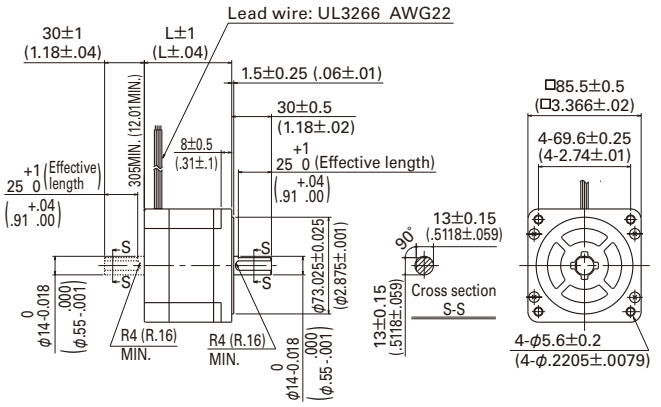
Motor cable Unipolar Model number: 4837798-1



Motor cable Bipolar Model number: 4837961-1



86 mm sq. (3.39 inch sq.)



Note: A bipolar motor is illustrated; unipolar motors have six lead wires.

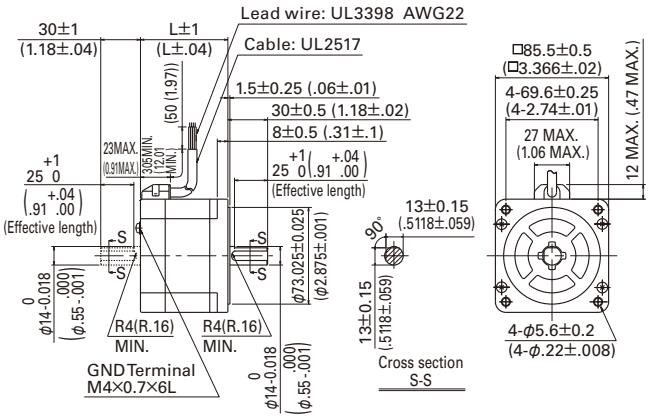
Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH2861-0441	SH2861-0411	66 (2.6)
–	–	SH2861-0941	SH2861-0911	66 (2.6)
–	–	SH2862-0441	SH2862-0411	96.5 (3.8)
–	–	SH2862-0941	SH2862-0911	96.5 (3.8)
–	–	SH2863-0441	SH2863-0411	127 (5)
–	–	SH2863-0941	SH2863-0911	127 (5)

Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SH2861-5041	SH2861-5011	66 (2.6)
–	–	SH2861-5141	SH2861-5111	66 (2.6)
–	–	SH2861-5241	SH2861-5211	66 (2.6)
–	–	SH2862-5041	SH2862-5011	96.5 (3.8)
–	–	SH2862-5141	SH2862-5111	96.5 (3.8)
–	–	SH2862-5241	SH2862-5211	96.5 (3.8)
–	–	SH2863-5041	SH2863-5011	127 (5)
–	–	SH2863-5141	SH2863-5111	127 (5)
–	–	SH2863-5241	SH2863-5211	127 (5)

86 mm sq. (3.39 inch sq.) CE · UL Model



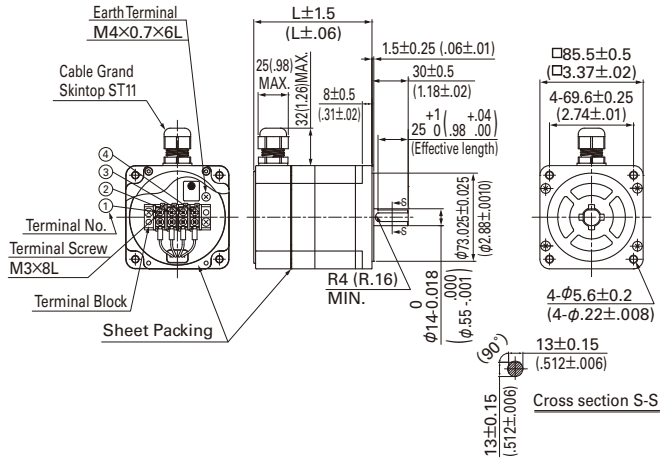
Unipolar CE · UL Model

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SM2861-0451	SM2861-0421	66 (2.6)
–	–	SM2861-0951	SM2861-0921	66 (2.6)
–	–	SM2862-0451	SM2862-0421	96.5 (3.8)
–	–	SM2862-0951	SM2862-0921	96.5 (3.8)
–	–	SM2863-0451	SM2863-0421	127 (5)
–	–	SM2863-0951	SM2863-0921	127 (5)

Bipolar CE · UL Model

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SM2861-5051	SM2861-5021	66 (2.6)
–	–	SM2861-5151	SM2861-5121	66 (2.6)
–	–	SM2861-5251	SM2861-5221	66 (2.6)
–	–	SM2862-5051	SM2862-5021	96.5 (3.8)
–	–	SM2862-5151	SM2862-5121	96.5 (3.8)
–	–	SM2862-5251	SM2862-5221	96.5 (3.8)
–	–	SM2863-5051	SM2863-5021	127 (5)
–	–	SM2863-5151	SM2863-5121	127 (5)
–	–	SM2863-5251	SM2863-5221	127 (5)

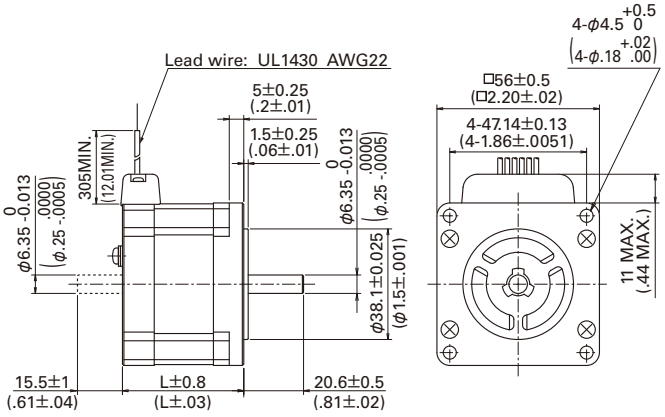
86 mm sq. (3.39 inch sq.) CE · UL Model



Bipolar terminal block type CE · UL Model

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	SM2861-5066	–	97.9 (3.9)
–	–	SM2861-5166	–	97.9 (3.9)
–	–	SM2861-5266	–	97.9 (3.9)
–	–	SM2862-5066	–	128.4 (5.1)
–	–	SM2862-5166	–	128.4 (5.1)
–	–	SM2862-5266	–	128.4 (5.1)
–	–	SM2863-5066	–	158.8 (6.3)
–	–	SM2863-5166	–	158.8 (6.3)
–	–	SM2863-5266	–	158.8 (6.3)

56 mm sq. (2.20 inch sq.) CE Model

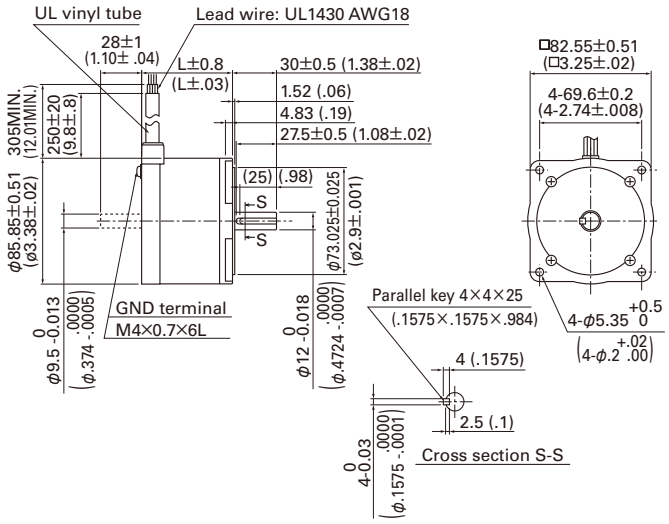


Unipolar CE Model

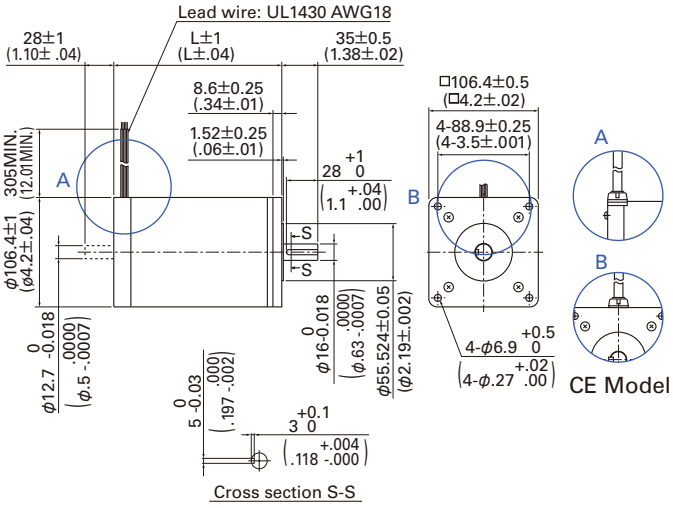
Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H7121-6140	103H7121-6110	41.8 (1.65)
–	–	103H7121-6740	103H7121-6710	41.8 (1.65)
–	–	103H7123-6140	103H7123-6110	53.8 (2.12)
–	–	103H7123-6740	103H7123-6710	53.8 (2.12)
–	–	103H7126-6140	103H7126-6110	75.8 (2.98)
–	–	103H7126-6740	103H7126-6710	75.8 (2.98)

Stepping motors [Unit: mm (inch)]

φ86 mm (φ3.39 inch) CE Model



φ106 mm (φ4.17 inch)



Bipolar CE Model

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H8221-6240	103H8221-6210	62 (3.31)
–	–	103H8222-6340	103H8222-6310	92.2 (5.51)
–	–	103H8223-6340	103H8223-6310	125.9 (7.72)

Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H89222-0941	103H89222-0911	163.3 (6.4)
–	–	103H89223-0941	103H89223-0911	221.3 (8.7)

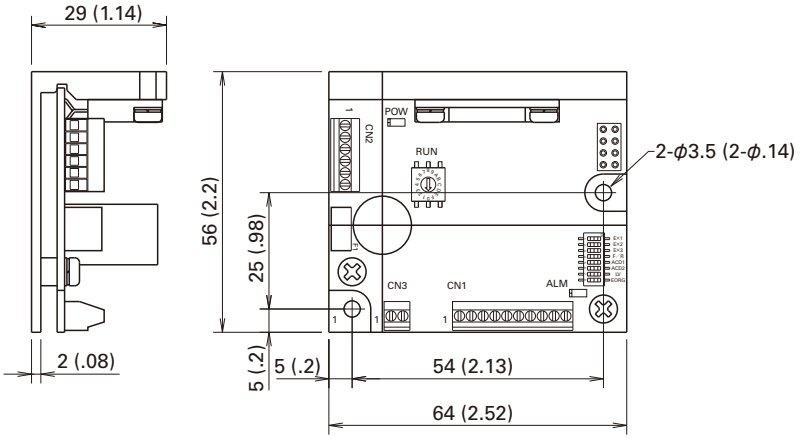
Bipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H89222-5241	103H89222-5211	163.3 (6.4)
–	–	103H89223-5241	103H89223-5211	221.3 (8.7)

Bipolar CE Model

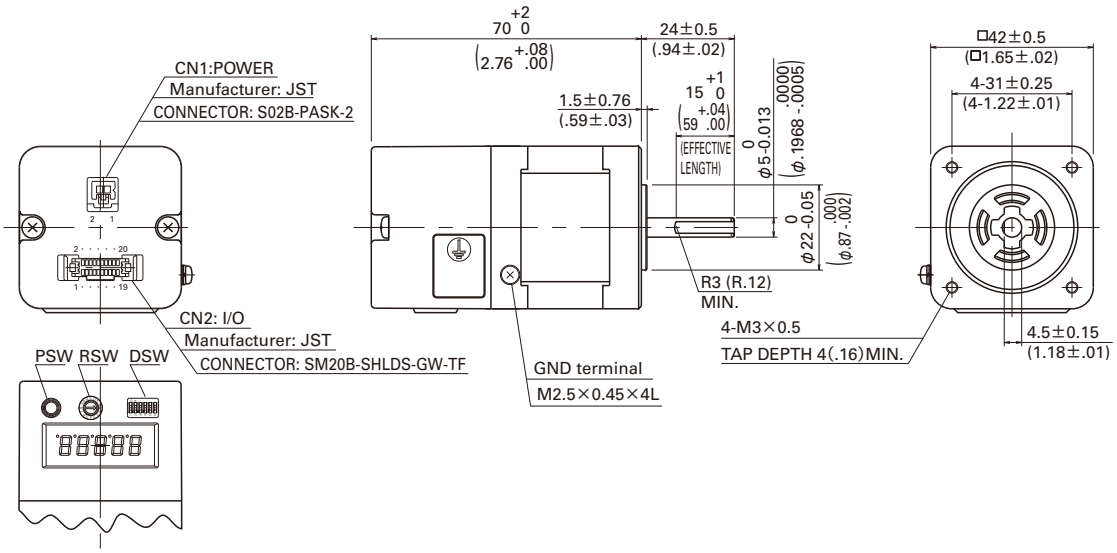
Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
–	–	103H89222-6341	103H89222-6311	163.3 (6.4)
–	–	103H89223-6341	103H89223-6311	221.3 (8.7)

Stepping Drivers [Unit: mm (inch)]



Stepping Motors with Integrated Drivers [Unit: mm (inch)]

42 mm sq. (1.65 inch sq.)



60 mm sq. (2.36 inch sq.)