

SANMOTION F2

2-PHASE STEPPING SYSTEMS

2-PHASE STEPPING MOTOR

56mm (≈2.20 in.) **86mm** (≈3.39 in.)



Features

Splash proof and dust resistance

This IP65 rated motor has superior water and dust resistance, and is safely used for applications that are operated in a harsh or wet environment.

High input voltage

The input voltage range of the motor is up to AC 250V.

- The brake, the encoder, and the oil seal are combined with this motor.
- The joint can select the cable or the connector (M12 type).

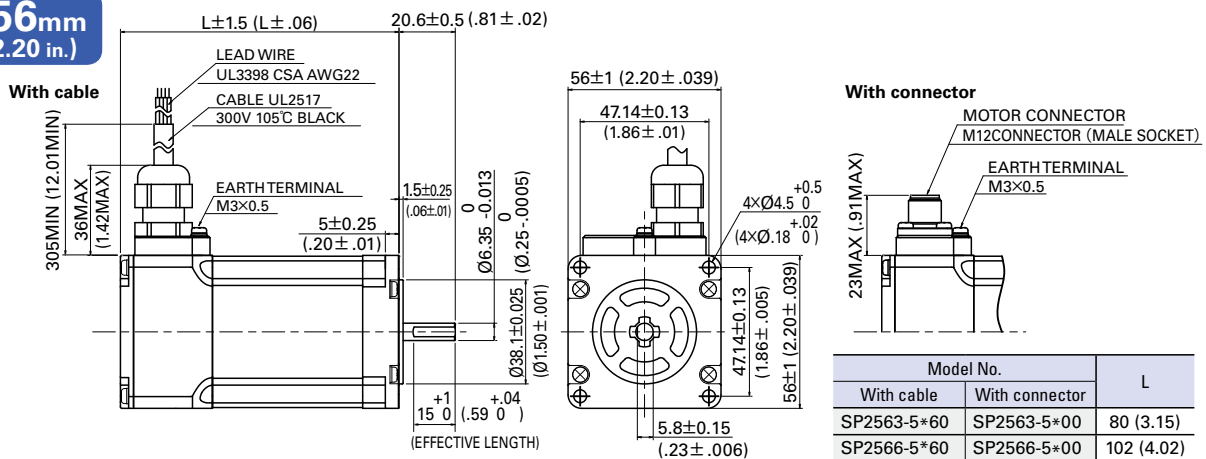


Application

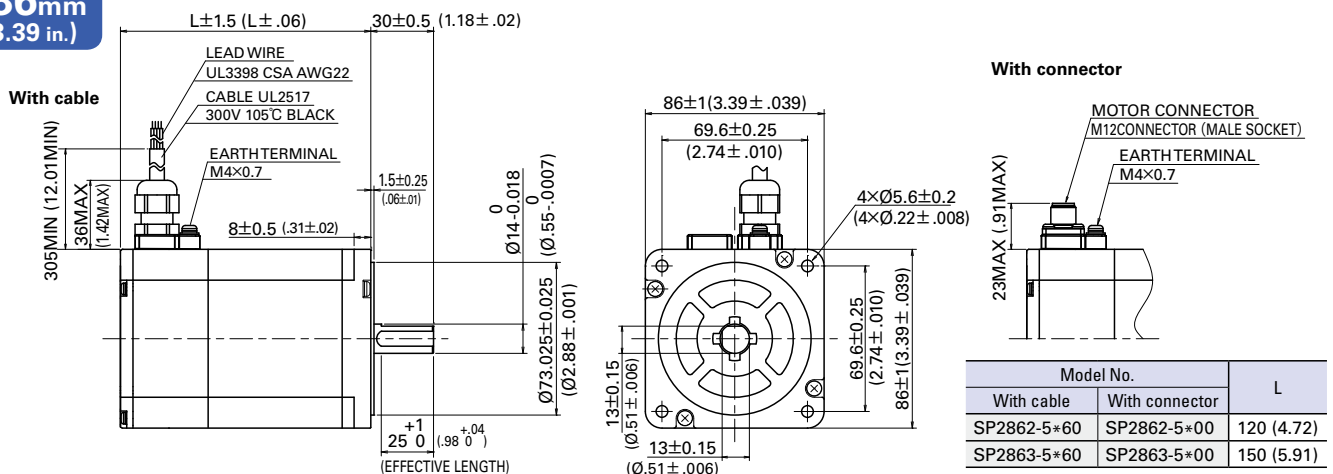
Equipment that is operated in a harsh or wet environment such as food processing machines

Dimensions [unit : mm (inch)]

56mm
(≈2.20 in.)



86mm
(≈3.39 in.)



SANMOTION F2

56mm (2.20 in.)

Specifications

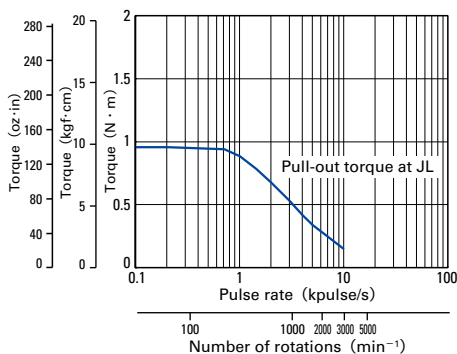
1.8° / Step Bipolar winding

Model No.		Holding torque at 2-phase energization [N·m (oz·in) MIN.]	Rated current [A/phase]	Winding resistance [Ω /phase]	Winding inductance [mH/phase]	Rotor inertia [$\times 10^{-4}$ kg·m ² (oz·in ²)]	Mass [kg(lbs)]
With cable	With connector						
SP2563-5060	SP2563-5000	1.0 (141.6)	1	5.7	29.0	0.21 (1.15)	0.9 (2.0)
SP2563-5160	SP2563-5100	1.0 (141.6)	2	1.5	7.3	0.21 (1.15)	0.9 (2.0)
SP2563-5260	SP2563-5200	1.0 (141.6)	3	0.7	3.4	0.21 (1.15)	0.9 (2.0)
SP2566-5060	SP2566-5000	1.7 (240.7)	1	7.7	35.4	0.36 (1.97)	1.2 (2.6)
SP2566-5160	SP2566-5100	1.7 (240.7)	2	2.0	9.2	0.36 (1.97)	1.2 (2.6)
SP2566-5260	SP2566-5200	1.7 (240.7)	3	0.94	4.4	0.36 (1.97)	1.2 (2.6)

· The model no., rotor inertia and mass are different when the motor is with brake, encoder or oil seal.

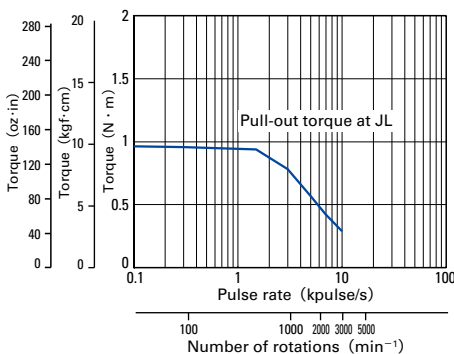
Pulse rate-torque characteristics

Model No. : SP2563-50□□



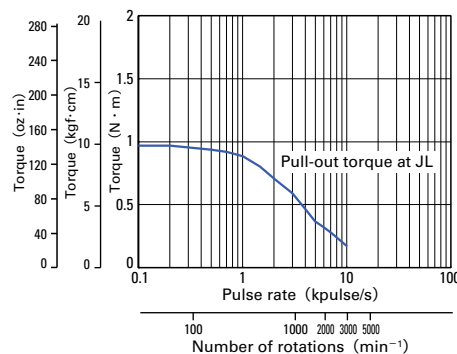
Constant current circuit
Source voltage : 100VAC · operating current : 1A/phase,
2-phase energization (full-step)
JL=2.6×10⁻⁴kg·m² (14.22 oz·in²)
(use the rubber coupling)

Model No. : SP2563-51□□



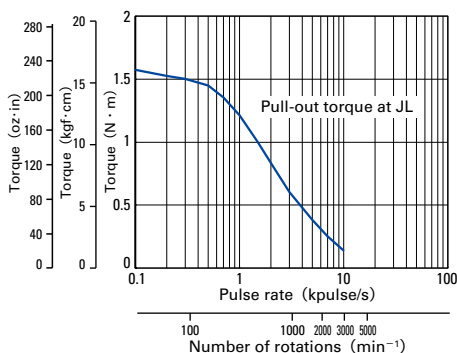
Constant current circuit
Source voltage : 100VAC · operating current : 2A/phase,
2-phase energization (full-step)
JL=2.6×10⁻⁴kg·m² (14.22 oz·in²)
(use the rubber coupling)

Model No. : SP2563-52□□



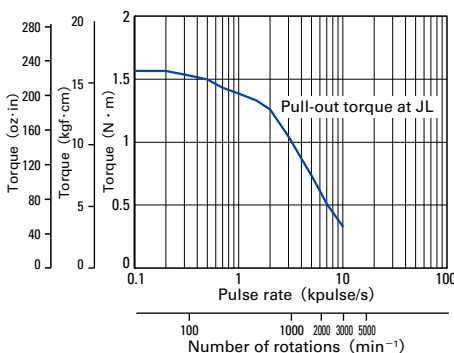
Constant current circuit
Source voltage : 100VAC · operating current : 3A/phase,
2-phase energization (full-step)
JL=2.6×10⁻⁴kg·m² (14.22 oz·in²)
(use the rubber coupling)

Model No. : SP2566-50□□



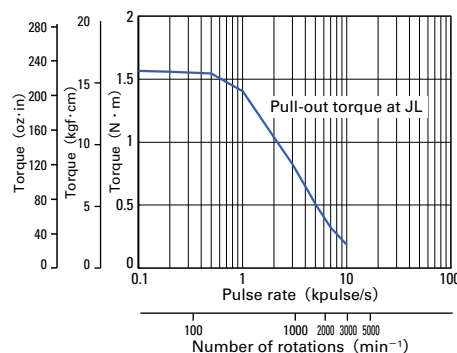
Constant current circuit
Source voltage : 100VAC · operating current : 1A/phase,
2-phase energization (full-step)
JL=7.4×10⁻⁴kg·m² (40.46 oz·in²)
(use the rubber coupling)

Model No. : SP2566-51□□



Constant current circuit
Source voltage : 100VAC · operating current : 2A/phase,
2-phase energization (full-step)
JL=7.4×10⁻⁴kg·m² (40.46 oz·in²)
(use the rubber coupling)

Model No. : SP2566-52□□



Constant current circuit
Source voltage : 100VAC · operating current : 3A/phase,
2-phase energization (full-step)
JL=7.4×10⁻⁴kg·m² (40.46 oz·in²)
(use the rubber coupling)

Specifications

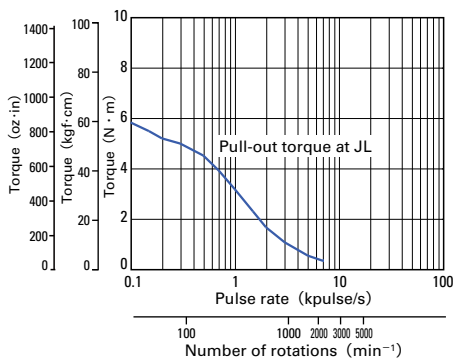
1.8° / Step Bipolar winding

Model No.		Holding torque at 2-phase energization [N·m (oz·in) MIN.]	Rated current [A/phase]	Winding resistance [Ω /phase]	Winding inductance [mH/phase]	Rotor inertia [$\times 10^{-4}$ kg·m ² (oz·in ²)]	Mass [kg(lbs)]
With cable	With connector						
SP2862-5060	SP2862-5000	6.4 (906.3)	2	3.2	25.0	3.0 (16.4)	3.1 (6.8)
SP2862-5160	SP2862-5100	6.4 (906.3)	4	0.83	6.4	3.0 (16.4)	3.1 (6.8)
SP2862-5260	—	6.4 (906.3)	6	0.36	2.8	3.0 (16.4)	3.1 (6.8)
SP2863-5060	SP2863-5000	9.0 (1274.5)	2	4.0	32.0	4.5 (24.6)	4.2 (9.3)
SP2863-5160	SP2863-5100	9.0 (1274.5)	4	1.0	7.9	4.5 (24.6)	4.2 (9.3)
SP2863-5260	—	9.0 (1274.5)	6	0.46	3.8	4.5 (24.6)	4.2 (9.3)

- The model no., rotor inertia and mass are different when the motor is with brake, encoder or oil seal.
- The rated current of the motor with the connector is 4A or less.

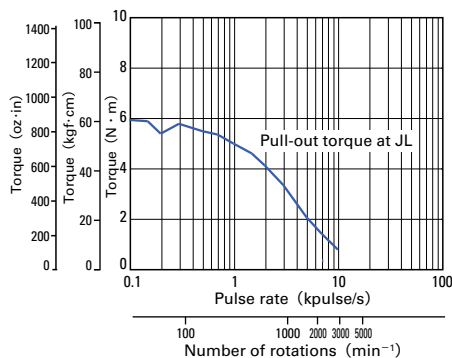
Pulse rate-torque characteristics

Model No. : SP2862-50□□



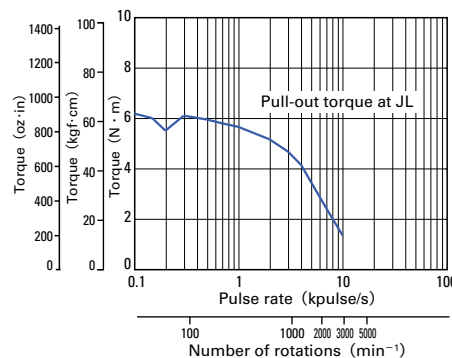
Constant current circuit
 Source voltage : 100VAC · operating current : 2A/phase,
 2-phase energization (full-step)
 JL=15.3×10⁻⁴kg·m² (83.65 oz·in²)
 (use the rubber coupling)

Model No. : SP2862-51□□



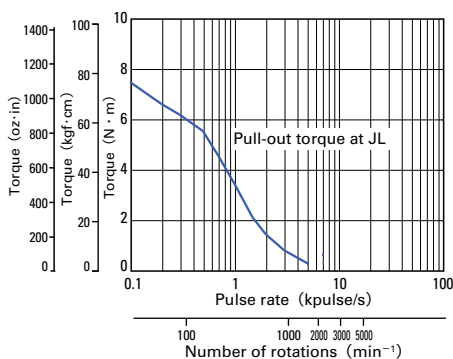
Constant current circuit
 Source voltage : 100VAC · operating current : 4A/phase,
 2-phase energization (full-step)
 JL=15.3×10⁻⁴kg·m² (83.65 oz·in²)
 (use the rubber coupling)

Model No. : SP2862-52□□



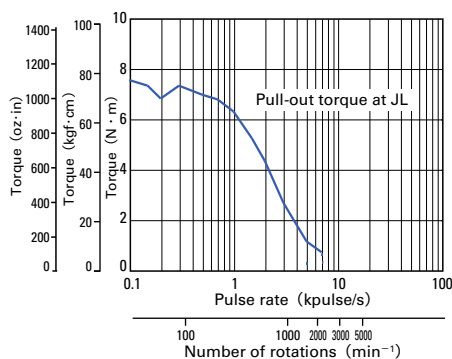
Constant current circuit
 Source voltage : 100VAC · operating current : 6A/phase,
 2-phase energization (full-step)
 JL=15.3×10⁻⁴kg·m² (83.65 oz·in²)
 (use the rubber coupling)

Model No. : SP2863-50□□



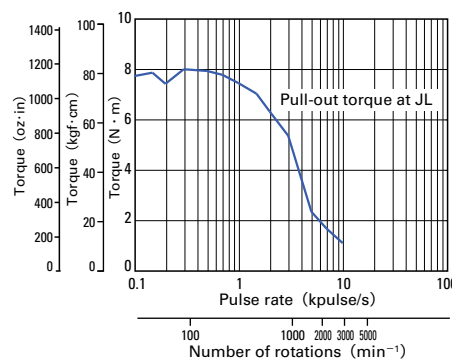
Constant current circuit
 Source voltage : 100VAC · operating current : 2A/phase,
 2-phase energization (full-step)
 JL=43×10⁻⁴kg·m² (235.10 oz·in²)
 (use the rubber coupling)

Model No. : SP2863-51□□



Constant current circuit
 Source voltage : 100VAC · operating current : 4A/phase,
 2-phase energization (full-step)
 JL=43×10⁻⁴kg·m² (235.10 oz·in²)
 (use the rubber coupling)

Model No. : SP2863-52□□



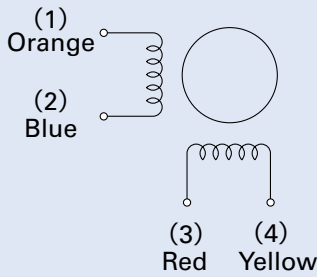
Constant current circuit
 Source voltage : 100VAC · operating current : 6A/phase,
 2-phase energization (full-step)
 JL=43×10⁻⁴kg·m² (235.10 oz·in²)
 (use the rubber coupling)

Internal Wiring and Rotation Direction

Bipolar winding

Internal wire connection

() : connector pin number



Direction of motor rotate

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	
Connector pin number	3	2	4	1	
Exciting order	1	-	-	+	+
	2	+	-	-	+
	3	+	+	-	-
	4	-	+	+	-

Precautions For Adoption

Cautions

Failure to follow the precautions on the right may cause moderate injury and property damage, or in some circumstances, could lead to a serious accident. Always follow all listed precautions.

Cautions

- Read the accompanying Instruction Manual carefully prior to using the product.
- If applying to medical devices and other equipment affecting people's lives, please contact us beforehand and take appropriate safety measures.
- If applying to equipment that can have significant effects on society and the general public, please contact us beforehand.
- Do not use this product in an environment where vibration is present, such as in a moving vehicle or shipping vessel.
- Do not perform any retrofitting, re-engineering, or modification to this equipment.
- The products presented in this catalog are meant to be used for general industrial applications. If using for special applications related to aviation and space, nuclear power, electric power, submarine repeaters, etc., please contact us beforehand.

*For any question or inquiry regarding the above, contact our Sales Department.

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