

Stepping Motors

Introduction

Q5STEP
AS
AC Input

Q5STEP
ASC
DC Input

5-Phase
RK
AC Input

5-Phase
CRK

2-Phase
CMK
DC Input

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2-Phase Stepping Motors

5-Phase Stepping Motors

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RoHS Compliant 2-Phase Stepping Motors PK Series

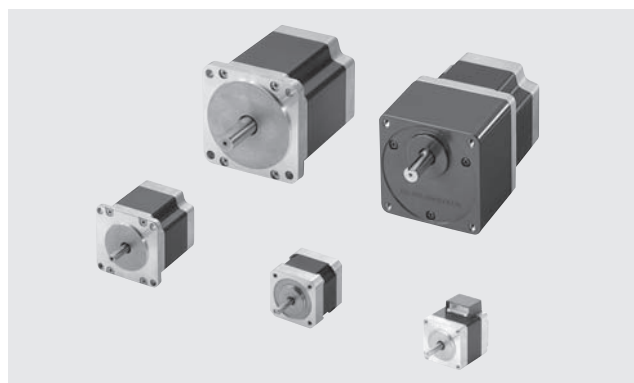
● Additional Information ●
Technical reference → Page F-1

Seven frame sizes are available in a range from 28 mm to 85 mm. In addition to the standard type, we offer high-torque type, high-resolution type and **SH** geared type. The motor windings also come in various specifications.








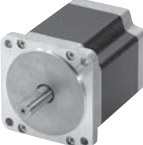








RoHS Compliant

The 2-phase **PK** Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

● Details of RoHS Directive → Page G-23



Wide Range of Motor Variations

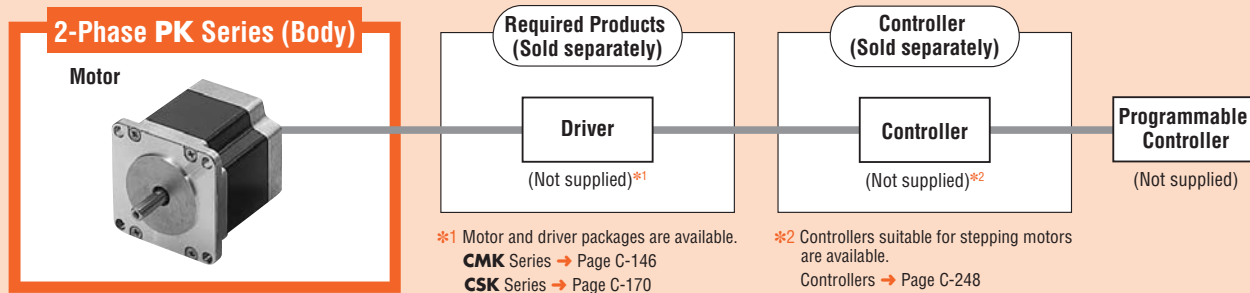
Type	Motor Frame Size						
	□28 mm	□35 mm	□42 mm	□50 mm	□56.4 mm*1	□60 mm	□85 mm*2
High-Torque Type	 Page C-198	 Page C-202	 Page C-204	-	-	 Page C-228	-
Standard Type	-	-	 Page C-206	 Page C-216	 Page C-218	-	 Page C-234
Standard Type IP65 Rated Motor	-	-	-	-	 Page C-222	-	 Page C-236
High-Resolution Type	-	-	 Page C-210	-	 Page C-224	-	-
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*1 Gearhead frame size is □60 mm

*2 Gearhead frame size is □90 mm

System Configuration

These accessories enable 2-phase **PK** Series products to be used for various operations.



Selectable Accessories and Peripheral Equipment (Sold separately)



No.	Product Name	Overview	Page
①	Motor Mounting Brackets	Dedicated mounting bracket for the motor.	C-266
②	Flexible Couplings	Coupling that connects the motor shaft to the driven shaft.	C-258
③	Clean Dampers	Dedicated damper for suppressing stepping motor vibration.	C-264
④	Motor Lead Wire/Connector Assembly	Lead wire with a connector crimped for connector-coupled motors (0.6 m, 1 m).	C-255
⑤	Motor Connector Set	Set of connector housings and contacts for use with connector-coupled motors (for 30 units).	C-255

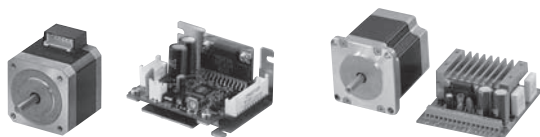
Example of System Configuration



●The system configuration shown above is an example. Other combinations are available.

2-Phase Stepping Motor and Driver Packages

To achieve maximum performance, motors with dedicated drivers are available.



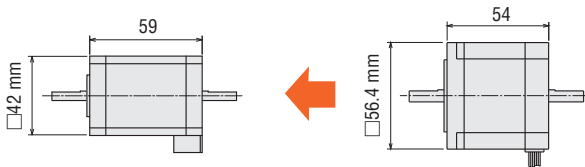
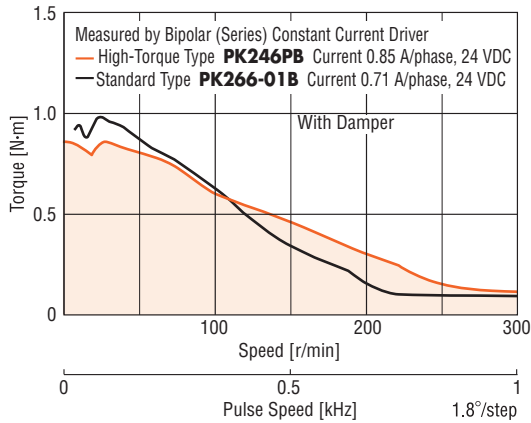
DC Input
Microstep Drive
CMK Series
→ Page C-146

DC Input
CSK Series
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High-Torque Type

This motor type combines high torque and a compact size. Four frame sizes, 28 mm, 35 mm, 42 mm and 60 mm, are available. Each specification provides torque equivalent to a motor of the next larger frame size, supporting high-torque operation even in the high-speed range.

For example, high-torque type **PK246PB** motor frame size (42 mm) has the same holding torque as the standard type **PK266-01B** motor frame size (56.4 mm). This means a smaller size motor will maintain the same torque. This allows for downsized and lightweight equipment.



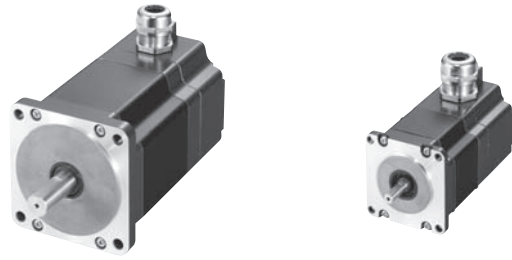
High-Torque Type	Type Model	Standard Type
PK246PB		PK266-01B
0.93 N·m	Holding Torque	1.17 N·m
$114 \times 10^{-7} \text{ kg·m}^2$	Rotor Inertia	$300 \times 10^{-7} \text{ kg·m}^2$

Standard Type

The standard **PK** Series 2-phase stepping motor offers balanced performance enhanced by high torque, low vibration and low noise. Optimal motor size and winding specification can be selected from a wide range of motor variations.

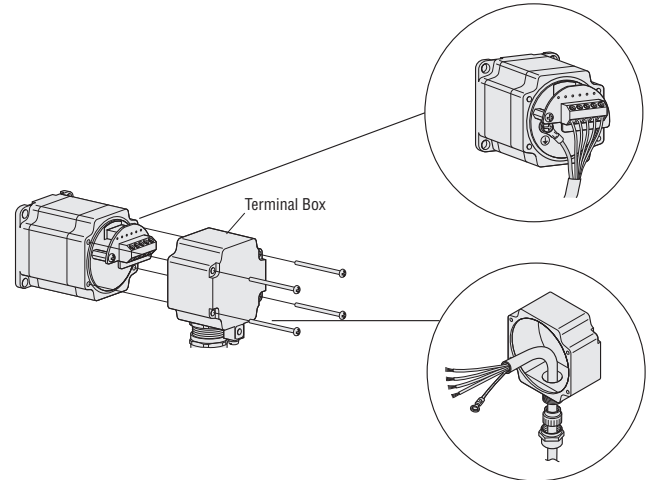
Standard Type IP65 Rated Motor

The motor conforms to the IP65 standard of ingress protection against dust and water.



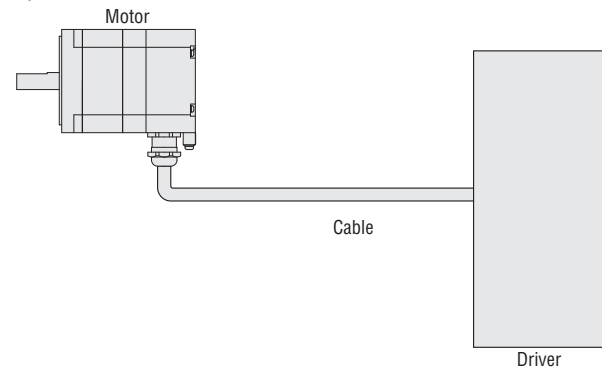
• Terminal-Block Connection Design

The motor can be wired directly from its terminal block.



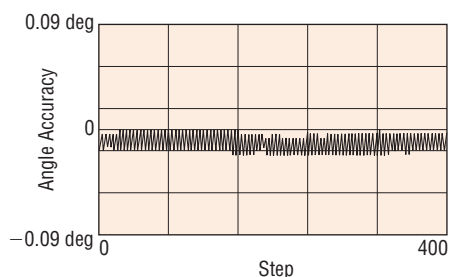
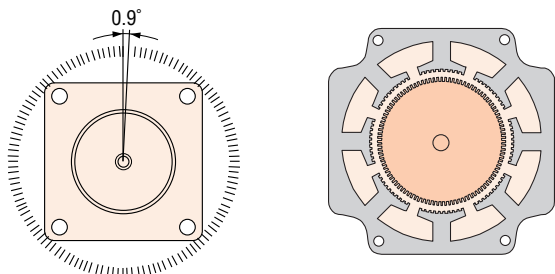
• No Motor/Driver Relay

Since the motor cable can be connected directly to the driver terminals, there is no need for wire connection or soldering on a relay terminal block.

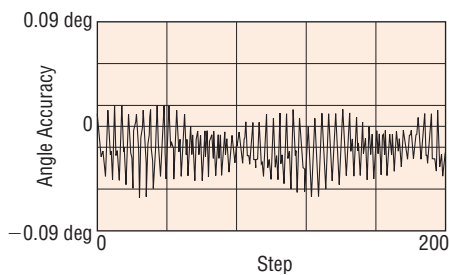


High-Resolution Type

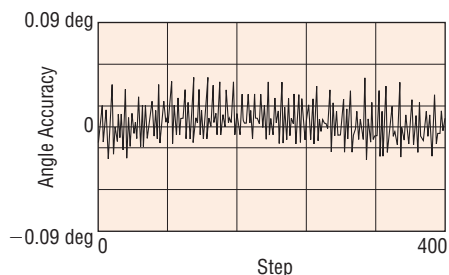
These 2-phase, high resolution stepping motors have half the step angle of standard stepping motors. The high-resolution type increases motor resolution from 200 steps/rotation to 400 steps/rotation. Smaller step-angles can be achieved by half-step driving or microstep driving. Such options, however, do not improve accuracy. Other than having twice as many rotor teeth as standard stepping motors, all other structures are exactly the same as the standard motors.



(1) High-Resolution Type (0.9°/step)



(2) Standard Type (1.8°/step)



(3) Standard Type (0.9°/step)
Angle Accuracy

SH Geared Type

Incorporating **SH** gears with high permissible torque, these models offer the full benefit of the speed reducing capability of geared motors, delivering high resolution, high torque and smooth low-speed rotation. With performance like this, the **SH** geared type can easily satisfy the requirements of various kinds of low-speed positioning applications.

● Smooth Rotation at Low Speeds

Stepping motors at low speed produce a relatively high amount of vibration. Use of a gearhead allows for an increase in the speed of the motor, which results in a smoother motion while maintaining the low output speed required by the application.

● Six Gear Ratios

SH geared motors are available with six different gear ratios: 1:3.6, 1:7.2, 1:9, 1:10, 1:18, 1:36. The low ratios of these gearheads can greatly facilitate speed control of the 2-phase stepping motors.

● **PK223-SG** type is not available in a gear ratio of 1:3.6.

● Ideal for High Inertia Drive

The stepping motor itself can drive an inertia of ten times the rotor inertia. The geared type can reduce the load inertia by the square of the gear ratio. Therefore, the geared type is suitable for driving larger inertial loads.

Product Number Code

High-Torque Type

PK 2 6 4 J D B

① ② ③ ④ ⑤ ⑥ ⑦

①	Series	PK: PK Series
②	2: 2-Phase	
③	Motor Frame Size	2: 28 mm 3: 35 mm 4: 42 mm 6: 60 mm
④	Motor Case Length	
⑤	Motor Type	P, J: High-Torque Type
⑥	Motor Lead	Blank: 6 Leads D: 4 Leads
⑦	Shaft Type	A: Single Shaft B: Double Shaft

Standard Type, High-Resolution Type

PK 2 6 6 M - E 2.0 B

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series	PK: PK Series
②	2: 2-Phase	
③	Motor Frame Size	4: 42 mm 5: 50 mm 6: 56.4 mm 9: 85 mm
④	Motor Case Length	
⑤	Motor Type	Blank: Standard Type (1.8°/step) M: High-Resolution Type (0.9°/step)
⑥	Motor Lead	O: 6 Leads E: 8 Leads
⑦	Winding Specification	
⑧	Shaft Type	A: Single Shaft B: Double Shaft

Standard Type IP65 Rated Motor

PK 2 9 6 E A T

① ② ③ ④ ⑤ ⑥ ⑦

①	Series	PK: PK Series
②	2: 2-Phase	
③	Motor Frame Size	6: 56.4 mm 9: 85 mm
④	Motor Case Length	
⑤	Motor Lead	D: 4 Terminals E: 8 Terminals
⑥	Shaft Type	A: Single Shaft
⑦	Motor Classification	

SH Geared Type

◇ Motor Frame Size 28 mm

PK 2 2 3 P A - SG 10

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series	PK: PK Series
②	2: 2-Phase	
③	Motor Frame Size	2: 28 mm
④	Motor Case Length	
⑤	Motor Type	
⑥	Shaft Type	A: Single Shaft B: Double Shaft
⑦	Gearhead Type	SG: SH Geared Type
⑧	Gear Ratio	

SH Geared Type

◇ Motor Frame Size 42 mm, 60 mm, 90 mm

PK 2 6 4 A E - SG 10

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

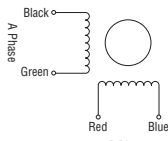
①	Series	PK: PK Series
②	2: 2-Phase	
③	Motor Frame Size	4: 42 mm 6: 60 mm 9: 90 mm
④	Motor Case Length	
⑤	Shaft Type	A: Single Shaft B: Double Shaft
⑥	Motor Lead	1: 6 Leads E: 8 Leads
⑦	Gearhead Type	SG: SH Geared Type
⑧	Gear Ratio	

Wirings and Connections

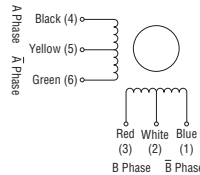
High-Torque Type, Standard Type, High-Resolution Type, SH Geared Type

◇ Motor Wirings

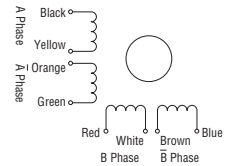
• 4 Leads Motor



• 6 Leads Motor

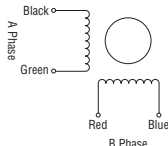


• 8 Leads Motor

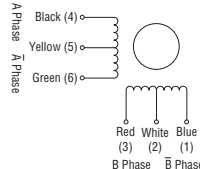


◇ Wirings Connection Diagrams

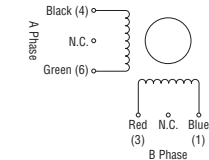
① 4 Leads Bipolar Connection



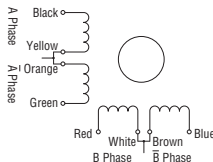
② 6 Leads Unipolar Connection



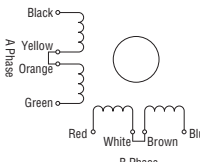
③ 6 Leads Bipolar (Series) Connection



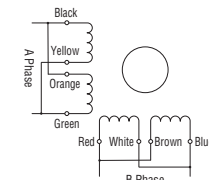
④ 8 Leads Unipolar Connection



⑤ 8 Leads Bipolar (Series) Connection



⑥ 8 Leads Bipolar (Parallel) Connection

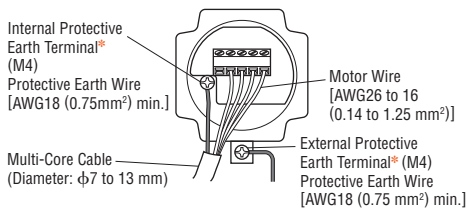


- The numbers inside the parentheses indicate the connector pin No. of the high-torque type motor.
- N.C.: No Connection

● Standard Type IP65 Rated Motor

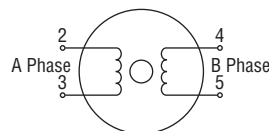
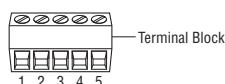
◇ Motor Wirings

● PK26 □ DAT

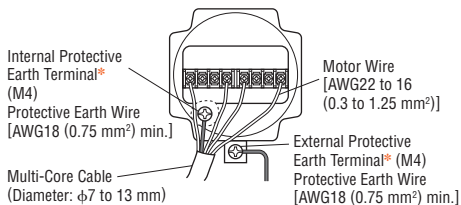


*Use either the internal or external protective earth terminal for grounding.

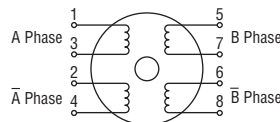
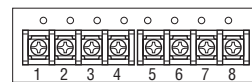
Connect motor lead wires to the terminals 2 to 5.



● PK29 □ EAT



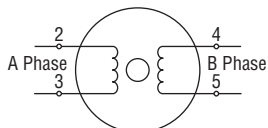
*Use either the internal or external protective earth terminal for grounding.



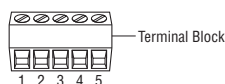
◇ Wirings Connection Diagrams

● PK26 □ DAT

7 Bipolar

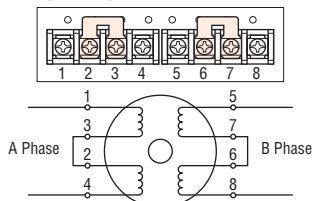


Connect motor lead wires to the terminals 2 to 5.

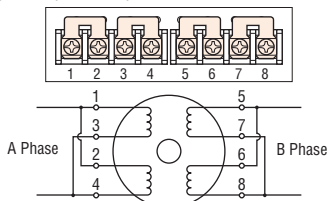


● PK29 □ EAT

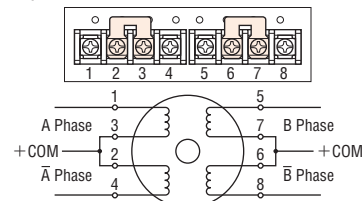
8 Bipolar (Series)



9 Bipolar (Parallel)



10 Unipolar



■ Notes on the Speed – Torque Characteristics Diagrams

The speed – torque characteristics featured in this catalogue are as measured on a constant-current driver.

The actual characteristics will vary depending on the driver used. Please use these diagrams only for reference purposes when selecting a motor.

You must also conduct a thorough evaluation with the actual driver to be used.

Product Specifications (Bipolar)

Motor Frame Size: 28 mm **PK22**□

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page
High-Torque Type	PK223PA PK223PB	1.8°	0.065	0.67	3.8	5.6	4	9×10 ⁻⁷	0.11	C-198
	PK224PA PK224PB		0.097		4.6	6.8	4.8	12×10 ⁻⁷	0.14	
	PK225PA PK225PB		0.11		6.2	9.2	5.6	18×10 ⁻⁷	0.2	
SH Geared Type	PK223PA-SG7.2 PK223PB-SG7.2	0.25°	0.3	0.67	3.8	5.6	4	9×10 ⁻⁷	0.16	C-200
	PK223PA-SG9 PK223PB-SG9	0.2°								
	PK223PA-SG10 PK223PB-SG10	0.18°								
	PK223PA-SG18 PK223PB-SG18	0.1°	0.4							
	PK223PA-SG36 PK223PB-SG36	0.05°								

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

Motor Frame Size: 35 mm **PK23**□

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page
High-Torque Type	PK233PA PK233PB	1.8°	0.2	0.85	4.6	5.4	5.6	24×10 ⁻⁷	0.18	C-202
	PK235PA PK235PB		0.37		5.8	6.8	8	50×10 ⁻⁷	0.285	

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

Motor Frame Size: 42 mm **PK24**□

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page	
High-Torque Type	PK244PA PK244PB	1.8°	0.48	0.85	6.8	8	15.6	57×10 ⁻⁷	0.3	C-204	
	PK246PA PK246PB		0.93		10	12	26	114×10 ⁻⁷	0.5		
Standard Type	PK243-01A PK243-01B	1.8°	0.2	0.67	5.6	8.4	10	35×10 ⁻⁷	0.21	C-206	
	PK243-02A PK243-02B				13	48	60				
	PK243-03A PK243-03B				17	77	84				
	PK244-01A PK244-01B		0.33	0.85	5.6	6.6	12.8	54×10 ⁻⁷	0.27		
	PK244-02A PK244-02B				8.6	15	26.8				
	PK244-03A PK244-03B				17	60	120				
	PK245-01A PK245-01B		0.43	0.85	0.57	5.6	6.6	11.2	68×10 ⁻⁷		0.35
	PK245-02A PK245-02B					8.6	15	28.4			
	PK245-03A PK245-03B					17	60	100			
	High-Resolution Type		PK243M-01A PK243M-01B	0.9°	0.2	0.67	5.6	8.4	15.2		35×10 ⁻⁷
PK243M-02A PK243M-02B		8.4	20				38.8				
PK243M-03A PK243M-03B		17	77				136				
PK244M-01A PK244M-01B		0.31	0.85		0.57	5.6	6.6	17.2	54×10 ⁻⁷	0.3	
PK244M-02A PK244M-02B						8.6	15	38.8			
PK244M-03A PK244M-03B						17	60	152			
PK245M-01A PK245M-01B		0.38	0.85		0.57	5.6	6.6	15.6	68×10 ⁻⁷	0.37	
PK245M-02A PK245M-02B						8.6	15	39.6			
PK245M-03A PK245M-03B						17	60	128			
SH Geared Type		PK243A1-SG3.6 PK243B1-SG3.6	0.5°		0.2	0.67	5.6	8.4	10	35×10 ⁻⁷	0.35
	PK243A1-SG7.2 PK243B1-SG7.2	0.25°	0.4								
	PK243A1-SG9 PK243B1-SG9	0.2°	0.5								
	PK243A1-SG10 PK243B1-SG10	0.18°	0.56								
	PK243A1-SG18 PK243B1-SG18	0.1°	0.8								
	PK243A1-SG36 PK243B1-SG36	0.05°	0.8								

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

Introduction

AC Input

DC Input

AC Input

DC Input

DC Input

DC Input

DC Input

Stepping Motors

Stepping Motors

Stepping Motors

Controllers

Accessories

Installation

Motor Frame Size: 50 mm **PK25**□

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page
Standard Type	PK256-02A PK256-02B	1.8°	0.84	1.4	4.2	3	5.6	230×10 ⁻⁷	0.53	C-216
	PK258-02A PK258-02B		1.56	1.4	6.7	4.8	11.5	420×10 ⁻⁷	0.89	

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

Motor Frame Size: 56.4 mm **PK26**□

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page
Standard Type	PK264-01A PK264-01B	1.8°	0.48	0.71	8.1	11.4	21.6	120×10 ⁻⁷	0.45	C-218
	PK264-02A PK264-02B			1.4	3.9	2.8	5.6			
	PK264-03A PK264-03B			2.1	2.6	1.26	2.4			
	PK264-E2.0A PK264-E2.0B			1.4	3.9	2.8	5.6			
	PK266-01A PK266-01B		1.17	0.71	11	14.8	40	300×10 ⁻⁷	0.7	
	PK266-02A PK266-02B			1.4	5	3.6	10			
	PK266-03A PK266-03B			2.1	3.2	1.5	4.4			
	PK266-E2.0A PK266-E2.0B			1.4	5	3.6	10			
	PK268-01A PK268-01B		1.75	0.71	12	17.2	56	480×10 ⁻⁷	1	
	PK268-02A PK268-02B			1.4	6.3	4.5	14.4			
	PK268-03A PK268-03B			2.1	4.2	2	6.4			
	PK268-E2.0A PK268-E2.0B			1.4	6.3	4.5	14.4			
Standard Type IP65 Rated Motor	PK264DAT	1.8°	0.48	2.8	1.96	0.7	1.4	120×10 ⁻⁷	0.6	C-222
	PK266DAT		1.17		2.52	0.9	2.5	300×10 ⁻⁷	0.9	
	PK268DAT		1.75		3.16	1.13	3.6	480×10 ⁻⁷	1.2	
High- Resolution Type	PK264M-01A PK264M-01B	0.9°	0.48	0.71	8.1	11.4	26	120×10 ⁻⁷	0.45	C-224
	PK264M-02A PK264M-02B			1.4	3.9	2.8	6.8			
	PK264M-03A PK264M-03B			2.1	2.6	1.26	3			
	PK264M-E2.0A PK264M-E2.0B			1.4	3.9	2.8	6.8			
	PK266M-01A PK266M-01B		1.17	0.71	11	14.8	50.8	300×10 ⁻⁷	0.7	
	PK266M-02A PK266M-02B			1.4	5	3.6	12.8			
	PK266M-03A PK266M-03B			2.1	3.2	1.5	5.8			
	PK266M-E2.0A PK266M-E2.0B			1.4	5	3.6	12.8			
	PK268M-01A PK268M-01B		1.75	0.71	12	17.2	77.6	480×10 ⁻⁷	1	
	PK268M-02A PK268M-02B			1.4	6.3	4.5	19.2			
	PK268M-03A PK268M-03B			2.1	4.2	2	8.4			
	PK268M-E2.0A PK268M-E2.0B			1.4	6.3	4.5	19.2			

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

Motor Frame Size: 60 mm **PK26**□

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page		
High-Torque Type	PK264JDA PK264JDB	1.8°	1.06	2.8	2.1	0.73	1.8	280×10 ⁻⁷	0.6	C-228		
	PK264JA PK264JB			1.4	4.1	2.92	7.2					
	PK266JDA PK266JDB		1.75	1.75	2.8	2.8	1	3.05	450×10 ⁻⁷		0.83	
	PK266JA PK266JB				1.4	5.6	4	12.2				
	PK267JDA PK267JDB		2.2	2.2	2.2	2.8	3.4	1.2	3.54		570×10 ⁻⁷	1.02
	PK267JA PK267JB					1.4	6.7	4.8	14.2			
	PK269JDA PK269JDB		3.1	3.1	3.1	2.8	4.2	1.49	5.7		900×10 ⁻⁷	1.43
	PK269JA PK269JB					1.4	8.3	5.96	22.8			
SH Geared Type	PK264AE-SG3.6 PK264BE-SG3.6	0.5°	1	1.4	3.9	2.8	5.6	120×10 ⁻⁷	0.75	C-232		
	PK264AE-SG7.2 PK264BE-SG7.2	0.25°	2									
	PK264AE-SG9 PK264BE-SG9	0.2°	2.5									
	PK264AE-SG10 PK264BE-SG10	0.18°	2.7									
	PK264AE-SG18 PK264BE-SG18	0.1°	3									
	PK264AE-SG36 PK264BE-SG36	0.05°	4									

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

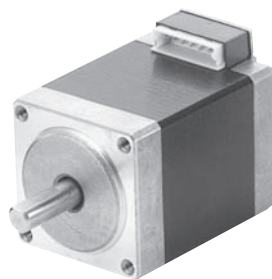
Motor Frame Size: 85 mm **PK29**□ (Frame size of **SH** geared type is 90 mm.)

Type	Model Single Shaft Double Shaft	Basic Step Angle	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Mass kg	Page
Standard Type	PK296-E4.5A PK296-E4.5B	1.8°	3.1	3.18	2.8	0.96	6	1400×10 ⁻⁷	1.7	C-234
	PK299-E4.5A PK299-E4.5B		6.2		3.9	1.32	10	2700×10 ⁻⁷	2.8	
	PK2913-E4.0A PK2913-E4.0B		9.3	2.8	5.3	1.94	16.8	4000×10 ⁻⁷	3.8	
Standard Type IP65 Rated Motor	PK296EAT	1.8°	3.1	3.18	2.8	0.96	6	1400×10 ⁻⁷	2.1	C-236
	PK299EAT		6.2		3.9	1.32	10	2700×10 ⁻⁷	3.2	
	PK2913EAT		9.3	2.8	5.3	1.94	16.8	1400×10 ⁻⁷	4.3	
SH Geared Type	PK296AE-SG3.6 PK296BE-SG3.6	0.5°	2.5	2.1	2	0.96	6.0	1400×10 ⁻⁷	2.8	C-238
	PK296AE-SG7.2 PK296BE-SG7.2	0.25°	5							
	PK296AE-SG9 PK296BE-SG9	0.2°	6.3							
	PK296AE-SG10 PK296BE-SG10	0.18°	7							
	PK296AE-SG18 PK296BE-SG18	0.1°	9							
	PK296AE-SG36 PK296BE-SG36	0.05°	12							

● The value given for holding torque is the value when operated with rated voltage and 2-phase excitation.

28 mm

Step Angle 1.8° High-Torque Type



Specifications (RoHS)

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK223PA PK223PB	Bipolar (Series)	0.065	0.67	3.8	5.6	4	9×10 ⁻⁷	6	[3]
	Unipolar	0.05	0.95	2.66	2.8	1			[2]
PK224PA PK224PB	Bipolar (Series)	0.097	0.67	4.6	6.8	4.8	12×10 ⁻⁷	6	[3]
	Unipolar	0.075	0.95	3.2	3.4	1.2			[2]
PK225PA PK225PB	Bipolar (Series)	0.11	0.67	6.2	9.2	5.6	18×10 ⁻⁷	6	[3]
	Unipolar	0.09	0.95	4.4	4.6	1.4			[2]

How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK223PA PK223PB	32	—	0.11
	42		
PK224PA PK224PB	40	—	0.14
	50		
PK225PA PK225PB	51.5	—	0.2
	61.5		

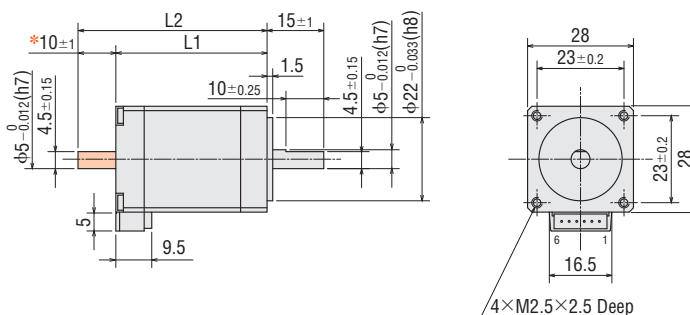
● Lead wire and connector will not be supplied with the connector-coupled motor. They must be purchased separately.

● Applicable Connector

Connector housing: 51065-0600 (MOLEX)

Contact: 50212-8100 (MOLEX)

Crimp tool: 57176-5000 (MOLEX)



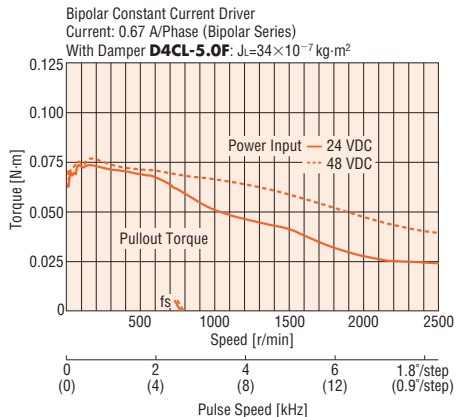
* The length of machining on double shaft model is 10±0.25.

● These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.

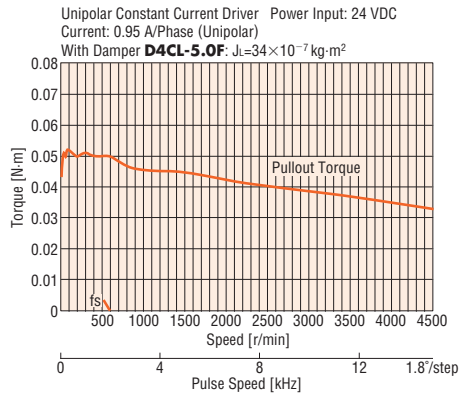
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

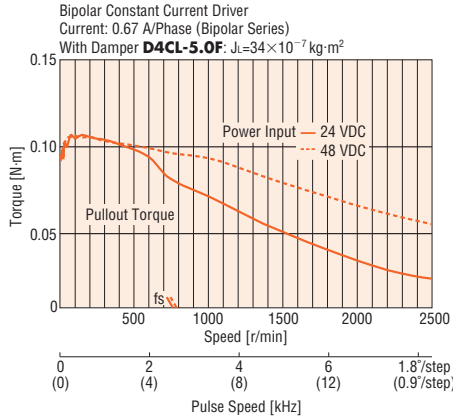
PK223PA/PK223PB Bipolar (Series)



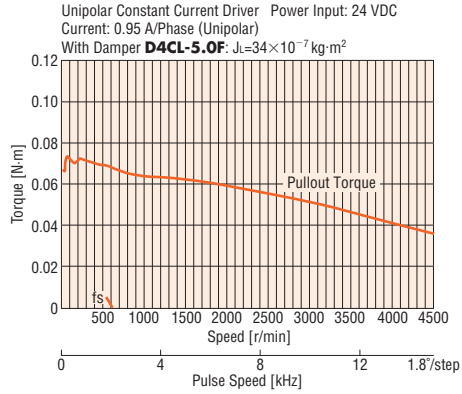
PK223PA/PK223PB Unipolar



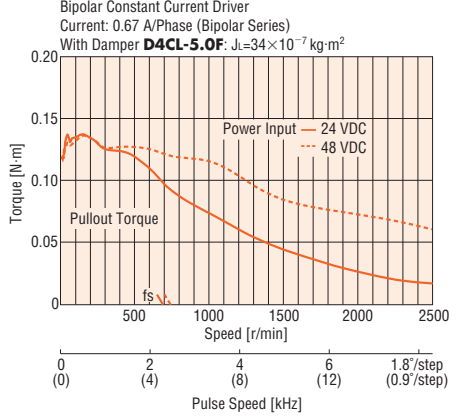
PK224PA/PK224PB Bipolar (Series)



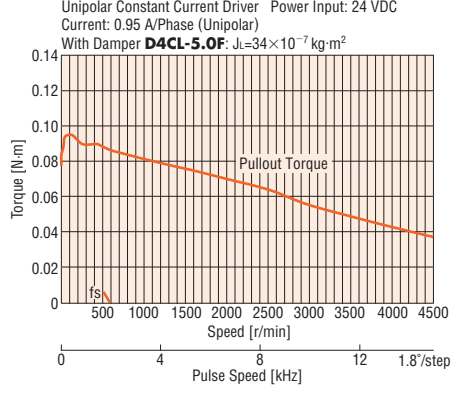
PK224PA/PK224PB Unipolar



PK225PA/PK225PB Bipolar (Series)



PK225PA/PK225PB Unipolar



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Motor Lead Wire/Connector Assembly (Sold separately)

● Lead wire and connector will not be supplied with the connector-coupled motor.

Motor lead wire/connector assembly (sold separately) is available.

Model	Cable Length (mm)	Number of Leads	Leads Specifications	
			UL Style No.	AWG No.
LC2U06A	600	6 Leads	3265	24
LC2U10A	1000			



Introduction

AC Input

DC Input

AC Input

DC Input

DC Input

DC Input

Stepping Motors

Stepping Motors

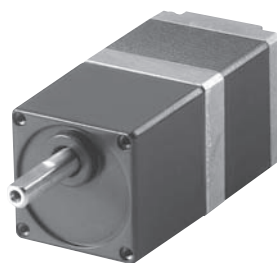
Controllers

Accessories

Installation

28 mm

SH Geared Type



Specifications RoHS

Motor Specifications

Model Single Shaft Double Shaft	Connection Type	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω /phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK223PA-SG □	Bipolar (Series)	0.67	3.8	5.6	4	9×10 ⁻⁷	6	3
PK223PB-SG □	Unipolar	0.95	2.66	2.8	1			2

How to read specifications table → Page C-10

- Degree of Protection: IP30
- Enter the gear ratio in the box (□) within the model name.
- Backlash value is approximately 1 to 2°.

Note:

- Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 1:7.2 and 1:36. It is the opposite for 1:9, 1:10 and 1:18 gear ratios.

Gearmotor Specifications

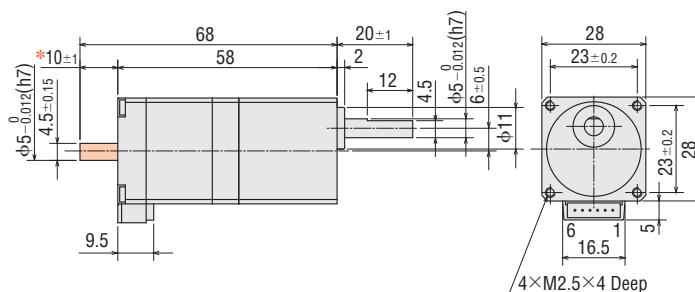
Model Single Shaft Double Shaft	Gear Ratio	Holding Torque* N·m	Step Angle	Permissible Speed r/min
PK223PA-SG7.2 PK223PB-SG7.2	1:7.2	0.3	0.25°	250
PK223PA-SG9 PK223PB-SG9	1:9	0.3	0.2°	200
PK223PA-SG10 PK223PB-SG10	1:10	0.3	0.18°	180
PK223PA-SG18 PK223PB-SG18	1:18	0.4	0.1°	100
PK223PA-SG36 PK223PB-SG36	1:36	0.4	0.05°	50

* Holding torque is the same regardless of the connection type, due to the permissible torque limit of the gearhead.

Dimensions (Unit = mm)

Model	Gear Ratio	Mass (kg)
PK223PA-SG □	7.2, 9, 10,	0.16
PK223PB-SG □	18, 36	

- Enter the gear ratio in the box (□) within the model name.
- Lead wire and connector will not be supplied with the connector-coupled motor. They must be purchased separately.
- Applicable Connector
Connector housing: 51065-0600 (MOLEX)
Contact: 50212-8100 (MOLEX)
Crimp tool: 57176-5000 (MOLEX)



* The length of machining on double shaft model is 10±0.25.

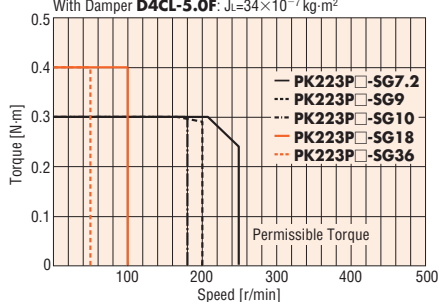
- These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.
- Screws (Included)
M2.5 Length 8 mm×4 Pieces

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

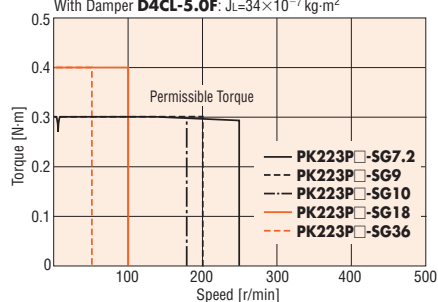
PK223PA-SG□/PK223PB-SG□ Bipolar (Series) 24 VDC

Bipolar Constant Current Driver Power Input: 24 VDC
Current: 0.67 A/Phase (Bipolar Series)
With Damper **D4CL-5.0F**: $J_L=34 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



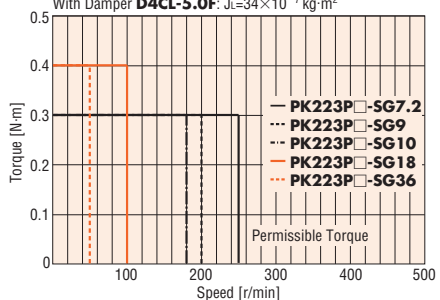
PK223PA-SG□/PK223PB-SG□ Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 0.95 A/Phase (Unipolar)
With Damper **D4CL-5.0F**: $J_L=34 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK223PA-SG□/PK223PB-SG□ Bipolar (Series) 48 VDC

Bipolar Constant Current Driver Power Input: 48 VDC
Current: 0.67 A/Phase (Bipolar Series)
With Damper **D4CL-5.0F**: $J_L=34 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Motor Lead Wire/Connector Assembly (Sold separately)

- Lead wire and connector will not be supplied with the connector-coupled motor. Motor lead wire/connector assembly (sold separately) is available.

Model	Cable Length (mm)	Number of Leads	Leads Specifications	
			UL Style No.	AWG No.
LC2U06A	600	6 Leads	3265	24
LC2U10A	1000			



Introduction

AC Input

Q5STEP AS

DC Input

Q5STEP ASC

AC Input

5-Phase RK

5-Phase CRK

5-Phase CRK

DC Input

2-Phase CMK

2-Phase CSK

2-Phase CSK

2-Phase Stepping Motors

5-Phase Stepping Motors

Controllers

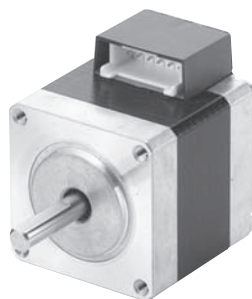
Accessories

Installation

35 mm

Step Angle 1.8°

High-Torque Type



Specifications RoHS

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK233PA PK233PB	Bipolar (Series)	0.2	0.85	4.6	5.4	5.6	24×10 ⁻⁷	6	[3]
	Unipolar	0.16	1.2	3.24	2.7	1.4			[2]
PK235PA PK235PB	Bipolar (Series)	0.37	0.85	5.8	6.8	8	50×10 ⁻⁷	6	[3]
	Unipolar	0.3	1.2	4.08	3.4	2			[2]

How to read specifications table → Page C-10

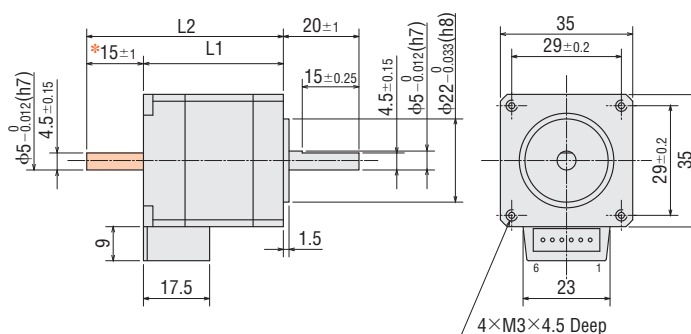
● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK233PA PK233PB	37	—	0.18
PK235PA PK235PB	52	67	0.285

● Lead wire and connector will not be supplied with the connector-coupled motor. They must be purchased separately.

● Applicable Connector
Connector housing: 51103-0600 (MOLEX)
Contact: 50351-8100 (MOLEX)
Crimp tool: 57295-5000 (MOLEX)



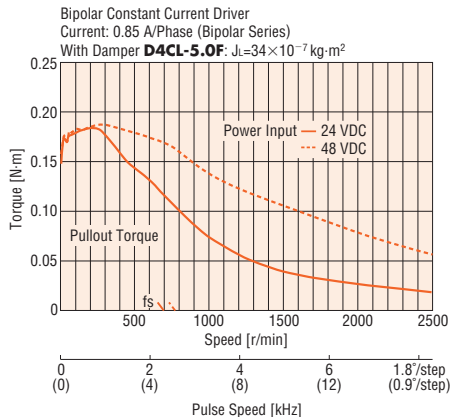
* The length of machining on double shaft model is 15 ± 0.25 .

● These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.

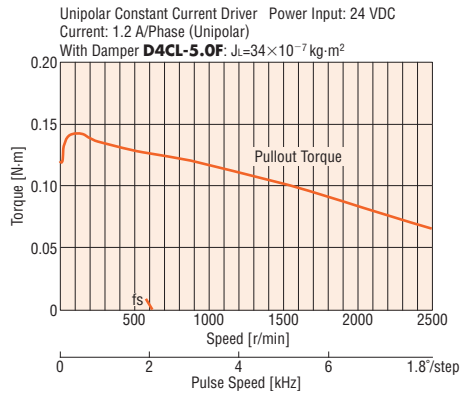
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

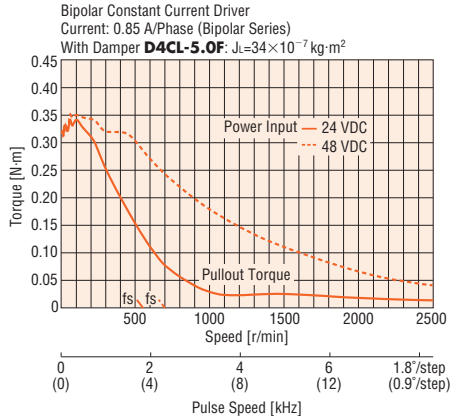
PK233PA/PK233PB Bipolar (Series)



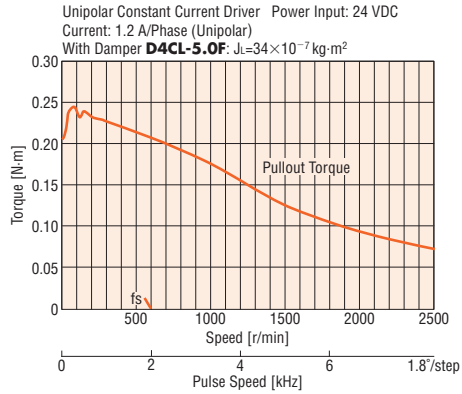
PK233PA/PK233PB Unipolar



PK235PA/PK235PB Bipolar (Series)



PK235PA/PK235PB Unipolar



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Motor Lead Wire/Connector Assembly (Sold separately)

● Lead wire and connector will not be supplied with the connector-coupled motor. Motor lead wire/connector assembly (sold separately) is available.

Model	Cable Length (mm)	Number of Leads	Leads Specifications	
			UL Style No.	AWG No.
LC2U06B	600	6 Leads	3265	24
LC2U10B	1000			

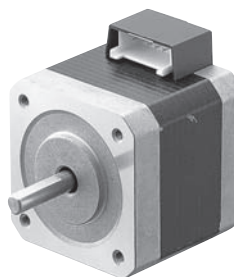


- Introduction
- AC Input
 - Q5STEP AS
- DC Input
 - Q5STEP ASC
- AC Input
 - 5-Phase RK
- AC Input
 - 5-Phase CRK
- DC Input
 - 2-Phase CMK
- DC Input
 - 2-Phase CSK
- 2-Phase Stepping Motors
- 5-Phase Stepping Motors
- Controllers
- Accessories
- Installation

42 mm

Step Angle 1.8°

High-Torque Type



Specifications RoHS

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK244PA PK244PB	Bipolar (Series)	0.48	0.85	6.8	8	15.6	57×10 ⁻⁷	6	[3]
	Unipolar	0.39	1.2	4.8	4	3.9			[2]
PK246PA PK246PB	Bipolar (Series)	0.93	0.85	10	12	26	114×10 ⁻⁷	6	[3]
	Unipolar	0.75	1.2	7.2	6	6.5			[2]

How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK244PA PK244PB	39	—	0.3
		54	
PK246PA PK246PB	59	—	0.5
		74	

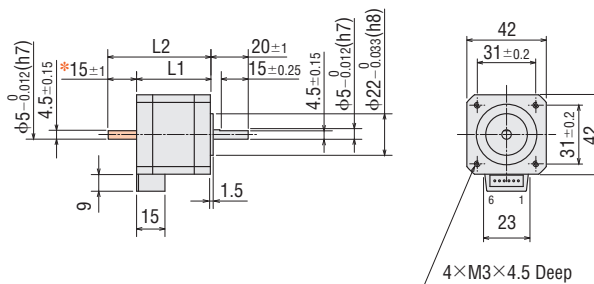
● Lead wire and connector will not be supplied with the connector-coupled motor. They must be purchased separately.

● Applicable Connector

Connector housing: 51103-0600 (MOLEX)

Contact: 50351-8100 (MOLEX)

Crimp tool: 57295-5000 (MOLEX)



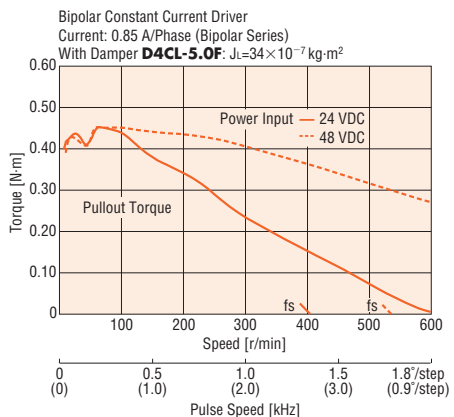
* The length of machining on double shaft model is 15±0.25.

● These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.

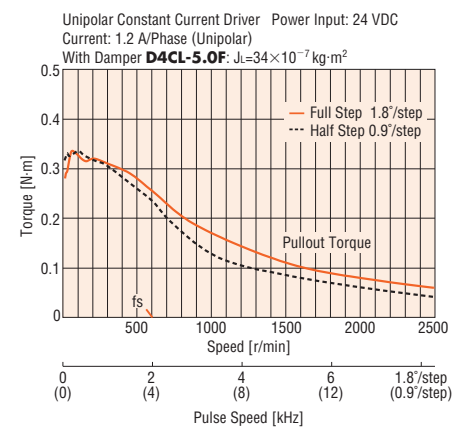
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

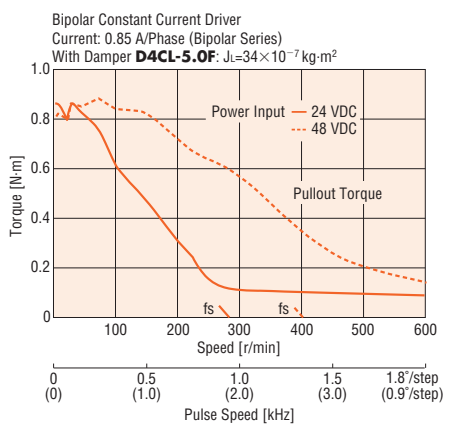
PK244PA/PK244PB Bipolar (Series)



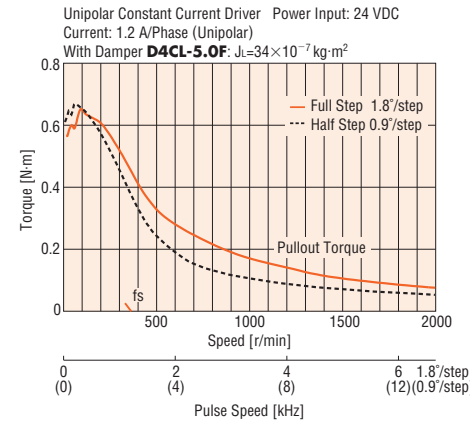
PK244PA/PK244PB Unipolar



PK246PA/PK246PB Bipolar (Series)



PK246PA/PK246PB Unipolar



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Motor Lead Wire/Connector Assembly (Sold separately)

● Lead wire and connector will not be supplied with the connector-coupled motor. Motor lead wire/connector assembly (sold separately) is available.

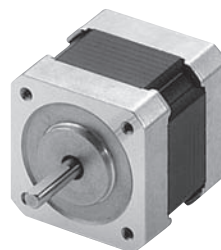
Model	Cable Length (mm)	Number of Leads	Leads Specifications	
			UL Style No.	AWG No.
LC2U06B	600	6 Leads	3265	24
LC2U10B	1000			



- Introduction
- AC Input
 - Q5STEP AS
- DC Input
 - Q5STEP ASC
- AC Input
 - 5-Phase RK
 - 5-Phase CRK
- DC Input
 - 2-Phase CMK
 - 2-Phase CSK
- 2-Phase Stepping Motors
- 5-Phase Stepping Motors
- Controllers
- Accessories
- Installation

42 mm

Step Angle 1.8°
Standard Type



Specifications (RoHS)

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wiring and Connections
									(See Page C-192)
PK243-01A	Bipolar (Series)	0.2	0.67	5.6	8.4	10	35×10 ⁻⁷	6	[3]
PK243-01B	Unipolar	0.16	0.95	4	4.2	2.5			[2]
PK243-02A	Bipolar (Series)	0.2	0.28	13	48	60	35×10 ⁻⁷	6	[3]
PK243-02B	Unipolar	0.16	0.4	9.6	24	15			[2]
PK243-03A	Bipolar (Series)	0.2	0.22	17	77	84	35×10 ⁻⁷	6	[3]
PK243-03B	Unipolar	0.16	0.31	12	38.5	21			[2]
PK244-01A	Bipolar (Series)	0.33	0.85	5.6	6.6	12.8	54×10 ⁻⁷	6	[3]
PK244-01B	Unipolar	0.26	1.2	4	3.3	3.2			[2]
PK244-02A	Bipolar (Series)	0.33	0.57	8.6	15	26.8	54×10 ⁻⁷	6	[3]
PK244-02B	Unipolar	0.26	0.8	6	7.5	6.7			[2]
PK244-03A	Bipolar (Series)	0.33	0.28	17	60	120	54×10 ⁻⁷	6	[3]
PK244-03B	Unipolar	0.26	0.4	12	30	30			[2]
PK245-01A	Bipolar (Series)	0.43	0.85	5.6	6.6	11.2	68×10 ⁻⁷	6	[3]
PK245-01B	Unipolar	0.32	1.2	4	3.3	2.8			[2]
PK245-02A	Bipolar (Series)	0.43	0.57	8.6	15	28.4	68×10 ⁻⁷	6	[3]
PK245-02B	Unipolar	0.32	0.8	6	7.5	7.1			[2]
PK245-03A	Bipolar (Series)	0.43	0.28	17	60	100	68×10 ⁻⁷	6	[3]
PK245-03B	Unipolar	0.32	0.4	12	30	25			[2]

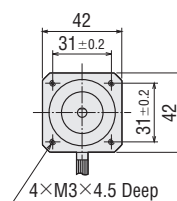
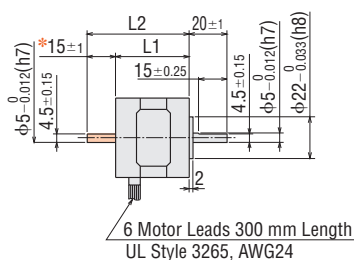
How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK243-0□A	33	—	0.21
PK243-0□B		48	
PK244-0□A	39	—	0.27
PK244-0□B		54	
PK245-0□A	47	—	0.35
PK245-0□B		62	

● Enter the winding specifications in the box (□) within the model name.



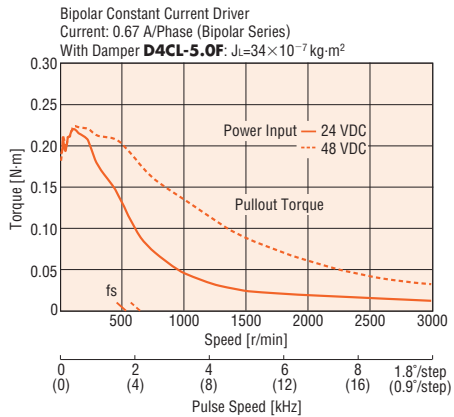
* The length of machining on double shaft model is 15±0.25.

● These dimensions are for double shaft models. For single shaft models, ignore the orange (□) areas.

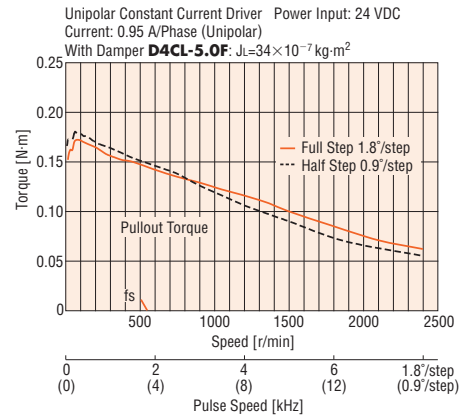
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

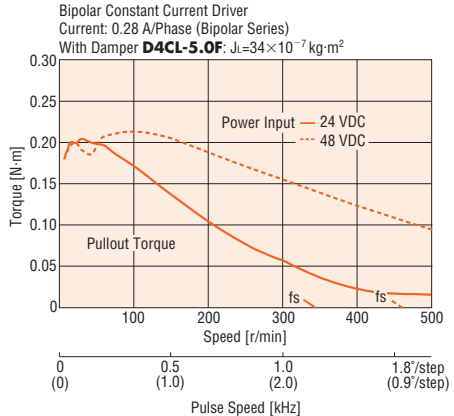
PK243-01A/PK243-01B Bipolar (Series)



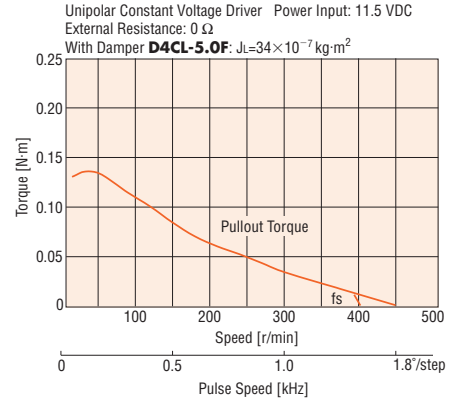
PK243-01A/PK243-01B Unipolar



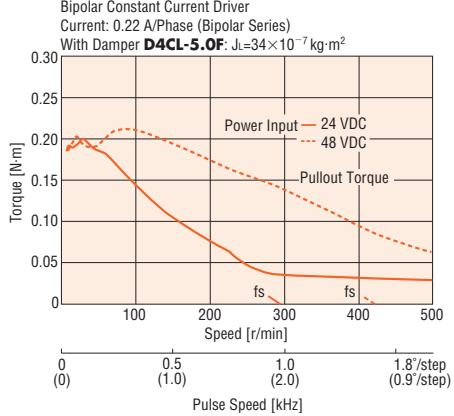
PK243-02A/PK243-02B Bipolar (Series)



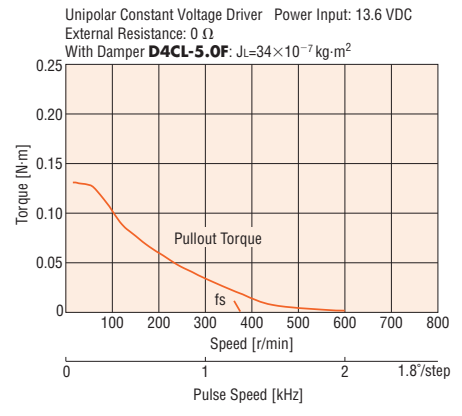
PK243-02A/PK243-02B Unipolar



PK243-03A/PK243-03B Bipolar (Series)



PK243-03A/PK243-03B Unipolar



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input

DC Input

AC Input

DC Input

DC Input

DC Input

Stepping Motors

Stepping Motors

Controllers

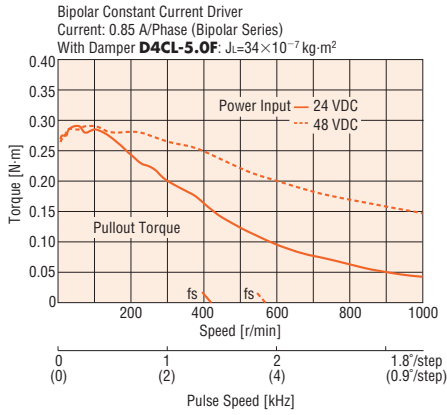
Accessories

Installation

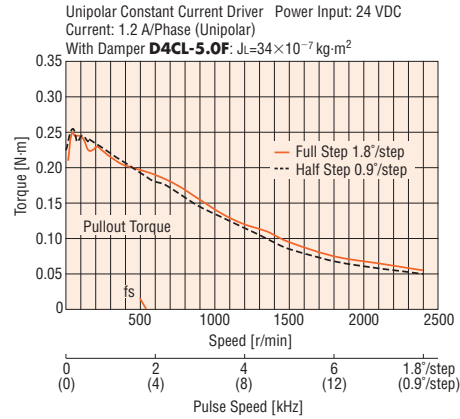
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

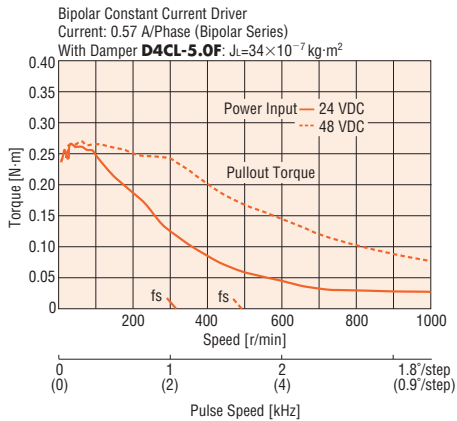
PK244-01A/PK244-01B Bipolar (Series)



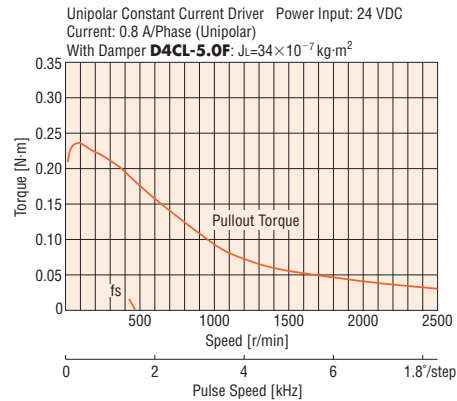
PK244-01A/PK244-01B Unipolar



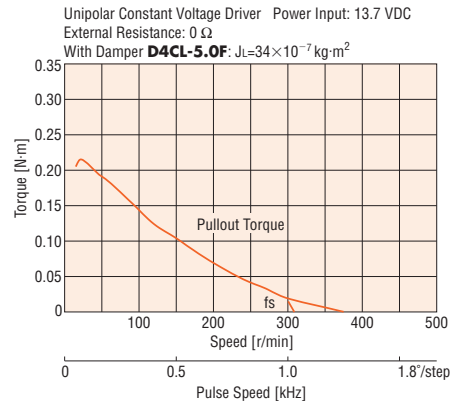
PK244-02A/PK244-02B Bipolar (Series)



PK244-02A/PK244-02B Unipolar



PK244-03A/PK244-03B Unipolar



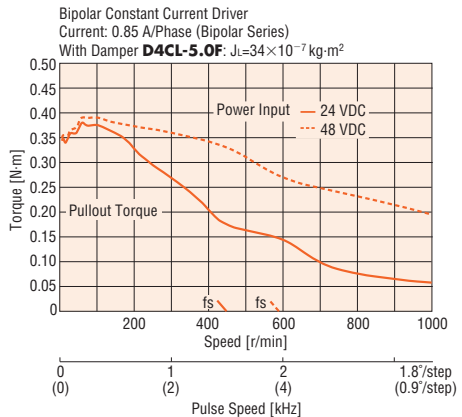
Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

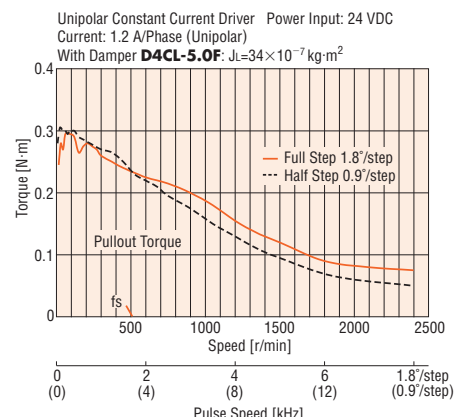
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

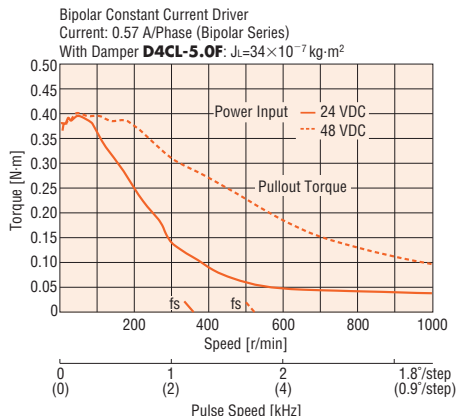
PK245-01A/PK245-01B Bipolar (Series)



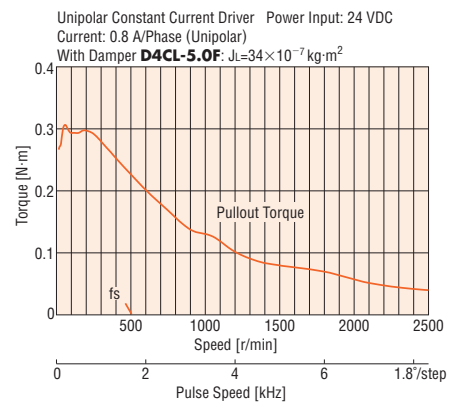
PK245-01A/PK245-01B Unipolar



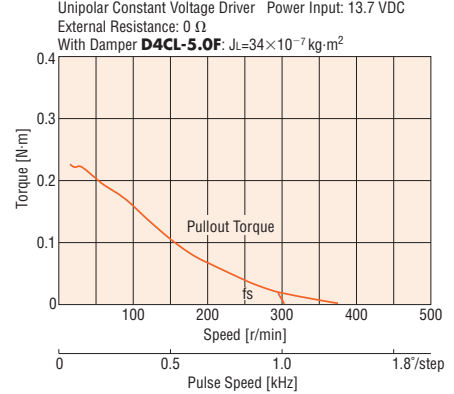
PK245-02A/PK245-02B Bipolar (Series)



PK245-02A/PK245-02B Unipolar



PK245-03A/PK245-03B Unipolar



Note:

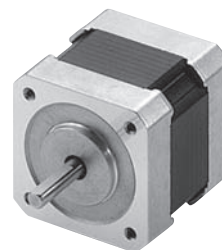
● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

- Introduction
- AC Input
 - Q5STEP AS
- DC Input
 - Q5STEP ASC
- AC Input
 - 5-Phase RK
- 5-Phase CRK
- DC Input
 - 2-Phase CMK
 - 2-Phase CSK
- 2-Phase Stepping Motors
- 5-Phase Stepping Motors
- Controllers
- Accessories
- Installation

42 mm

Step Angle 0.9°

High-Resolution Type



Specifications (RoHS)

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK243M-01A	Bipolar (Series)	0.2	0.67	5.6	8.4	15.2	35×10 ⁻⁷	6	[3]
PK243M-01B	Unipolar	0.16	0.95	4	4.2	3.8			[2]
PK243M-02A	Bipolar (Series)	0.2	0.42	8.4	20	38.8	35×10 ⁻⁷	6	[3]
PK243M-02B	Unipolar	0.16	0.6	6	10	9.7			[2]
PK243M-03A	Bipolar (Series)	0.2	0.22	17	77	136	35×10 ⁻⁷	6	[3]
PK243M-03B	Unipolar	0.16	0.31	12	38.5	34			[2]
PK244M-01A	Bipolar (Series)	0.31	0.85	5.6	6.6	17.2	54×10 ⁻⁷	6	[3]
PK244M-01B	Unipolar	0.26	1.2	4	3.3	4.3			[2]
PK244M-02A	Bipolar (Series)	0.31	0.57	8.6	15	38.8	54×10 ⁻⁷	6	[3]
PK244M-02B	Unipolar	0.26	0.8	6	7.5	9.7			[2]
PK244M-03A	Bipolar (Series)	0.31	0.28	17	60	152	54×10 ⁻⁷	6	[3]
PK244M-03B	Unipolar	0.26	0.4	12	30	38			[2]
PK245M-01A	Bipolar (Series)	0.38	0.85	5.6	6.6	15.6	68×10 ⁻⁷	6	[3]
PK245M-01B	Unipolar	0.32	1.2	4	3.3	3.9			[2]
PK245M-02A	Bipolar (Series)	0.38	0.57	8.6	15	39.6	68×10 ⁻⁷	6	[3]
PK245M-02B	Unipolar	0.32	0.8	6	7.5	9.9			[2]
PK245M-03A	Bipolar (Series)	0.38	0.28	17	60	128	68×10 ⁻⁷	6	[3]
PK245M-03B	Unipolar	0.32	0.4	12	30	32			[2]

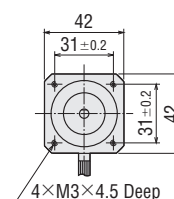
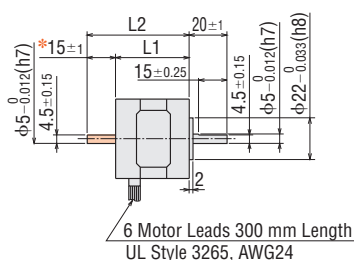
How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK243M-0□A	33	—	0.24
PK243M-0□B		48	
PK244M-0□A	39	—	0.3
PK244M-0□B		54	
PK245M-0□A	47	—	0.37
PK245M-0□B		62	

● Enter the winding specification in the box (□) within the model name.



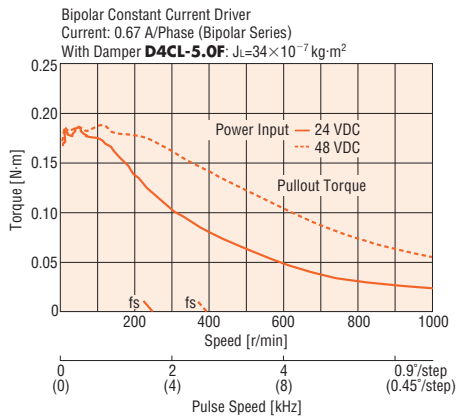
* The length of machining on double shaft model is 15±0.25.

● These dimensions are for double shaft models. For single shaft models, ignore the orange (□) areas.

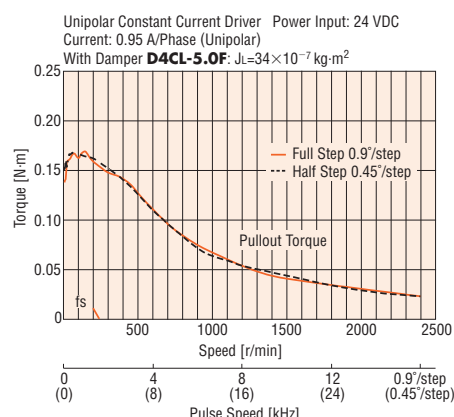
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

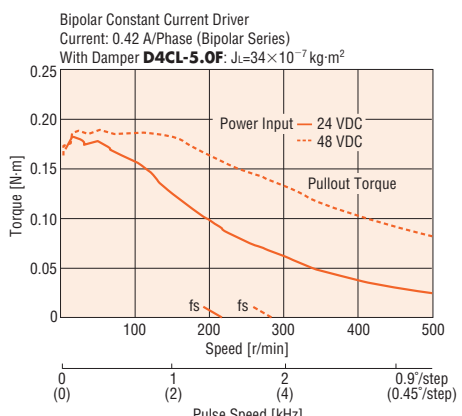
PK243M-01A/PK243M-01B Bipolar (Series)



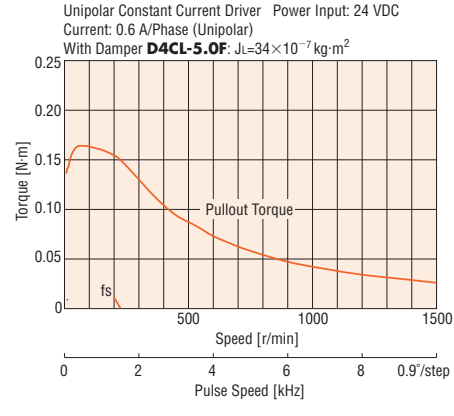
PK243M-01A/PK243M-01B Unipolar



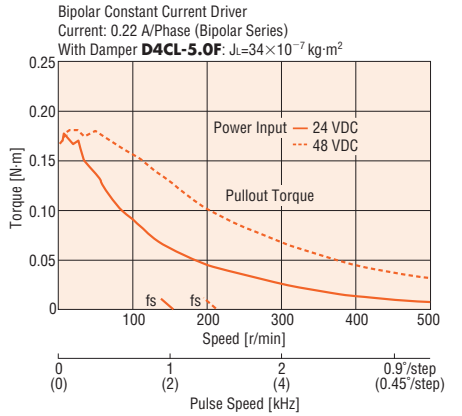
PK243M-02A/PK243M-02B Bipolar (Series)



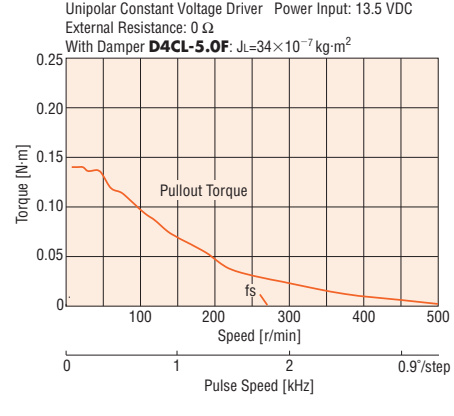
PK243M-02A/PK243M-02B Unipolar



PK243M-03A/PK243M-03B Bipolar (Series)



PK243M-03A/PK243M-03B Unipolar



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input

DC Input

AC Input

DC Input

DC Input

DC Input

Stepping Motors

Stepping Motors

Controllers

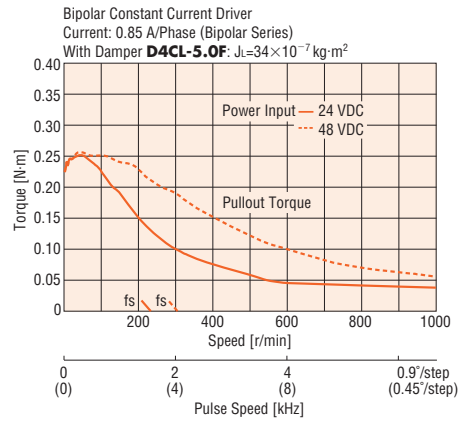
Accessories

Installation

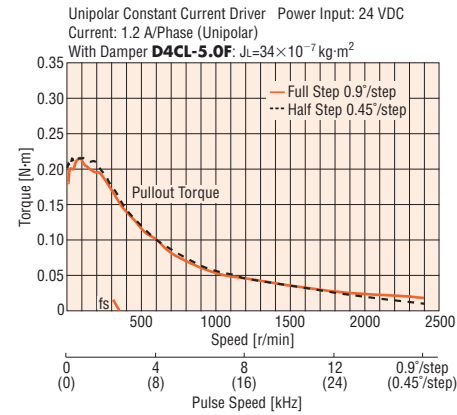
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

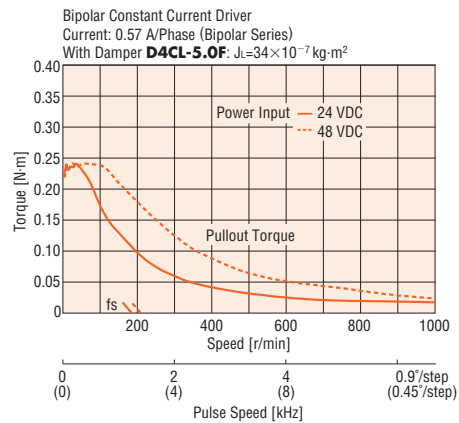
PK244M-01A/PK244M-01B Bipolar (Series)



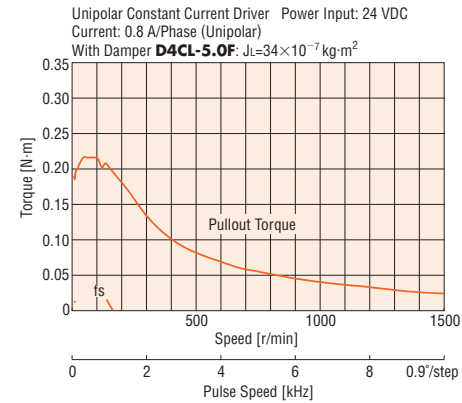
PK244M-01A/PK244M-01B Unipolar



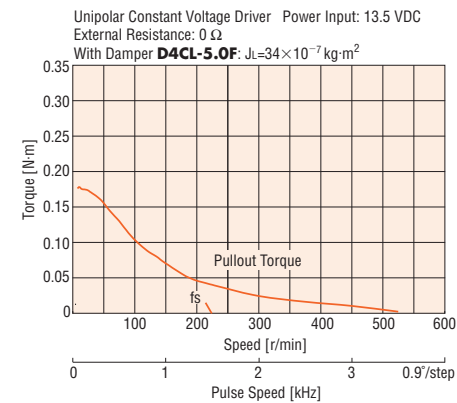
PK244M-02A/PK244M-02B Bipolar (Series)



PK244M-02A/PK244M-02B Unipolar



PK244M-03A/PK244M-03B Unipolar



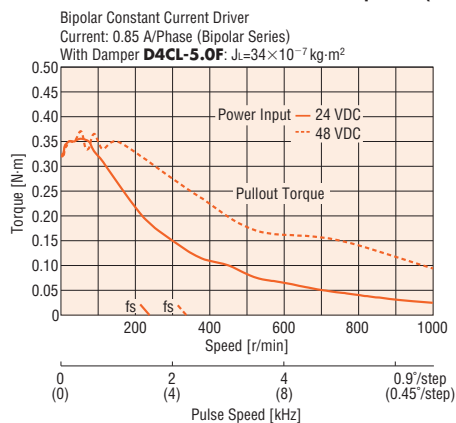
Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

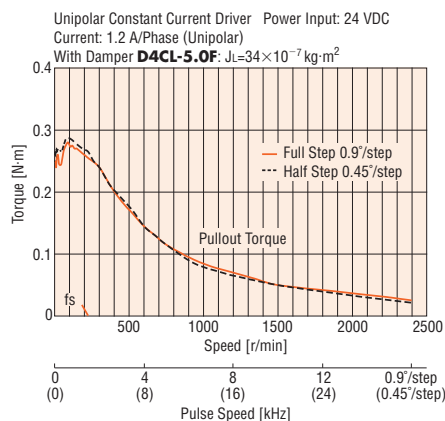
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

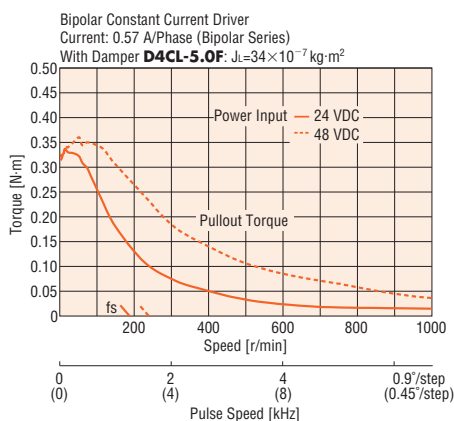
PK245M-01A/PK245M-01B Bipolar (Series)



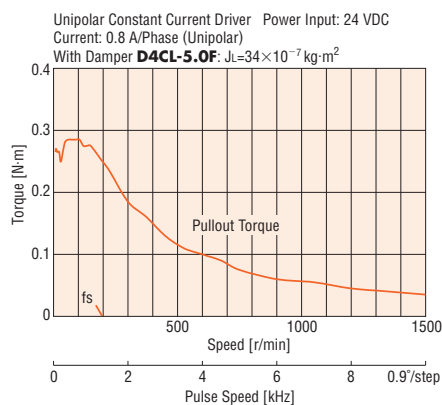
PK245M-01A/PK245M-01B Unipolar



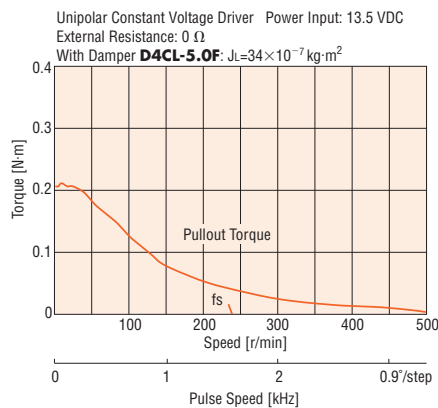
PK245M-02A/PK245M-02B Bipolar (Series)



PK245M-02A/PK245M-02B Unipolar



PK245M-03A/PK245M-03B Unipolar



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

42 mm

SH Geared Type



Specifications (RoHS)

Motor Specifications

Model Single Shaft Double Shaft	Connection Type	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω /phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK243A1-SG <input type="checkbox"/>	Bipolar (Series)	0.67	5.6	8.4	10	35×10 ⁻⁷	6	<input type="checkbox"/>
PK243B1-SG <input type="checkbox"/>	Unipolar	0.95	4.0	4.2	2.5			<input type="checkbox"/>

How to read specifications table → Page C-10

- Degree of Protection: IP30
- Enter the gear ratio in the box () within the model name.
- Backlash value is approximately 1 to 2°.

Note:

- Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 1:3.6, 1:7.2, 1:9 and 1:10. It is the opposite for 1:18 and 1:36 gear ratios.

Gearmotor Specifications

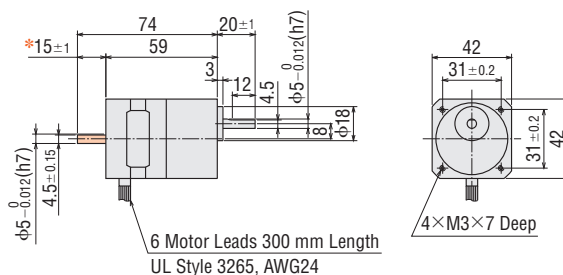
Model Single Shaft Double Shaft	Gear Ratio	Holding Torque* N·m	Step Angle	Permissible Speed r/min
PK243A1-SG3.6 PK243B1-SG3.6	1:3.6	0.2	0.5°	500
PK243A1-SG7.2 PK243B1-SG7.2	1:7.2	0.4	0.25°	250
PK243A1-SG9 PK243B1-SG9	1:9	0.5	0.2°	200
PK243A1-SG10 PK243B1-SG10	1:10	0.56	0.18°	180
PK243A1-SG18 PK243B1-SG18	1:18	0.8	0.1°	100
PK243A1-SG36 PK243B1-SG36	1:36	0.8	0.05°	50

* Holding torque is the same regardless of the connection type, due to the permissible torque limit of the gearhead.

Dimensions (Unit = mm)

Model	Gear Ratio	Mass (kg)
PK243A1-SG <input type="checkbox"/>	3.6, 7.2, 9,	0.35
PK243B1-SG <input type="checkbox"/>	10, 18, 36	

- Enter the gear ratio in the box () within the model name.



* The length of machining on double shaft model is 15±0.25.

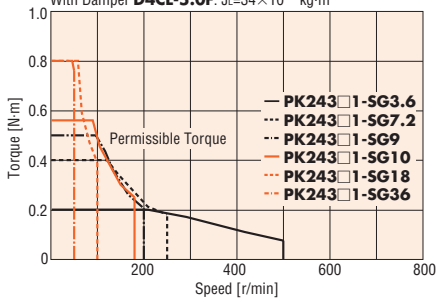
- These dimensions are for double shaft models. For single shaft models, ignore the orange () areas.
- Screws (Included)
M3 Length 10 mm---4 Pieces

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

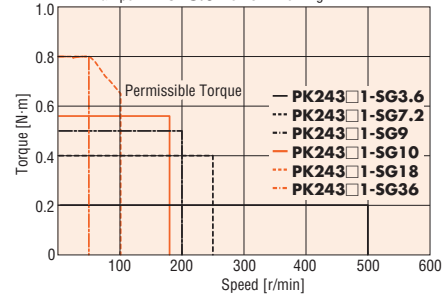
PK243A1-SG□/PK243B1-SG□ Bipolar (Series) 24 VDC

Bipolar Constant Current Driver Power Input: 24 VDC
Current: 0.67 A/Phase (Bipolar Series)
With Damper **D4CL-5.0F**: $J_L=34 \times 10^{-7}$ kg·m²



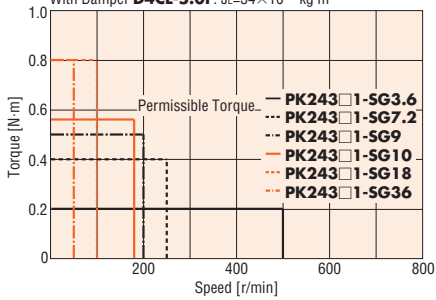
PK243A1-SG□/PK243B1-SG□ Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 0.95 A/Phase (Unipolar)
With Damper **D4CL-5.0F**: $J_L=34 \times 10^{-7}$ kg·m²



PK243A1-SG□/PK243B1-SG□ Bipolar (Series) 48 VDC

Bipolar Constant Current Driver Power Input: 48 VDC
Current: 0.67 A/Phase (Bipolar Series)
With Damper **D4CL-5.0F**: $J_L=34 \times 10^{-7}$ kg·m²



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input
Q5STEP
ASDC Input
Q5STEP
ASCAC Input
5-Phase
RK5-Phase
CRKDC Input
2-Phase
CMK2-Phase
CSK2-Phase
Stepping
Motors5-Phase
Stepping
Motors

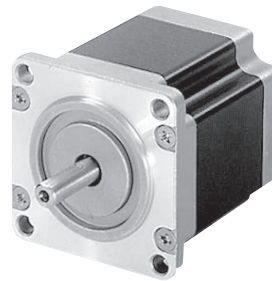
Controllers

Accessories

Installation

50 mm

Step Angle 1.8°
Standard Type



Specifications (RoHS)

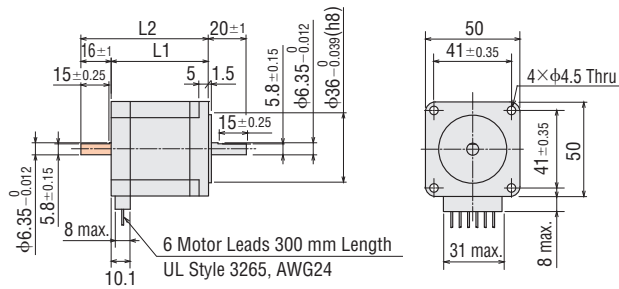
Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK256-02A PK256-02B	Bipolar (Series)	0.84	1.4	4.2	3	5.6	230×10 ⁻⁷	6	[3]
	Unipolar	0.6	2	3	1.5	1.4			[2]
PK258-02A PK258-02B	Bipolar (Series)	1.56	1.4	6.7	4.8	11.5	420×10 ⁻⁷	6	[3]
	Unipolar	1.2	2	4.8	2.4	2.87			[2]

How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK256-02A PK256-02B	51.5	— 67.5	0.53
PK258-02A PK258-02B	81	— 97	0.89

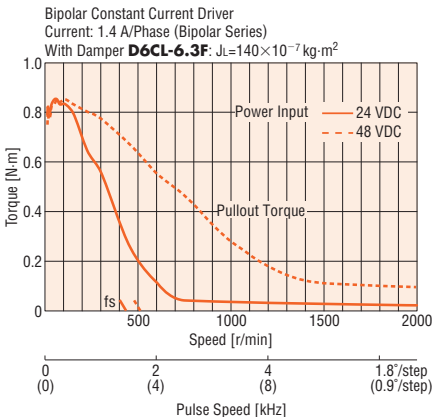


● These dimensions are for double shaft models. For single shaft models, ignore the orange () areas.

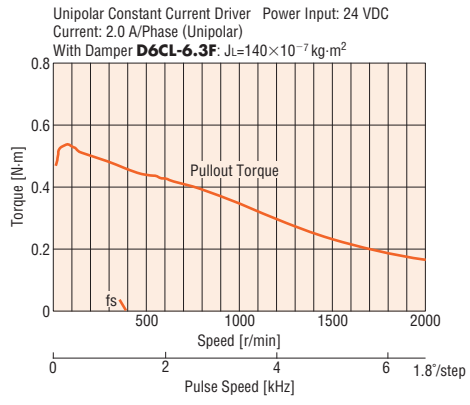
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

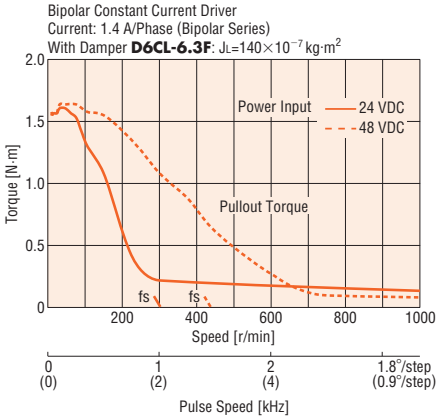
PK256-02A/PK256-02B Bipolar (Series)



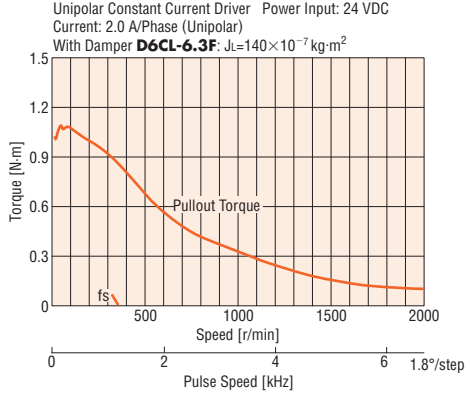
PK256-02A/PK256-02B Unipolar



PK258-02A/PK258-02B Bipolar (Series)



PK258-02A/PK258-02B Unipolar



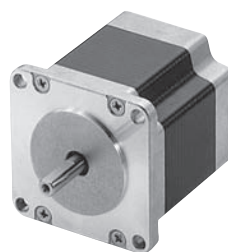
Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

- Introduction
- AC Input
 - Q5STEP AS
- DC Input
 - Q5STEP ASC
- AC Input
 - 5-Phase RK
- AC Input
 - 5-Phase CRK
- DC Input
 - 2-Phase CMK
 - 2-Phase CSK
- 2-Phase Stepping Motors
- 5-Phase Stepping Motors
- Controllers
- Accessories
- Installation

56.4 mm

Step Angle 1.8°
Standard Type



Specifications (RoHS)

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK264-01A PK264-01B	Bipolar (Series)	0.48	0.71	8.1	11.4	21.6	120×10 ⁻⁷	6	[3] [2]
	Unipolar	0.39	1	5.7	5.7	5.4			
PK264-02A PK264-02B	Bipolar (Series)	0.48	1.4	3.9	2.8	5.6	120×10 ⁻⁷	6	[3] [2]
	Unipolar	0.39	2	2.8	1.4	1.4			
PK264-03A PK264-03B	Bipolar (Series)	0.48	2.1	2.6	1.26	2.4	120×10 ⁻⁷	6	[3] [2]
	Unipolar	0.39	3	1.9	0.63	0.6			
PK264-E2.0A PK264-E2.0B	Bipolar (Parallel)	0.48	2.8	1.96	0.7	1.4	120×10 ⁻⁷	8	[6] [5] [4]
	Bipolar (Series)	0.48	1.4	3.9	2.8	5.6			
	Unipolar	0.39	2	2.8	1.4	1.4			
PK266-01A PK266-01B	Bipolar (Series)	1.17	0.71	11	14.8	40	300×10 ⁻⁷	6	[3] [2]
	Unipolar	0.9	1	7.4	7.4	10			
PK266-02A PK266-02B	Bipolar (Series)	1.17	1.4	5	3.6	10	300×10 ⁻⁷	6	[3] [2]
	Unipolar	0.9	2	3.6	1.8	2.5			
PK266-03A PK266-03B	Bipolar (Series)	1.17	2.1	3.2	1.5	4.4	300×10 ⁻⁷	6	[3] [2]
	Unipolar	0.9	3	2.3	0.75	1.1			
PK266-E2.0A PK266-E2.0B	Bipolar (Parallel)	1.17	2.8	2.52	0.9	2.5	300×10 ⁻⁷	8	[6] [5] [4]
	Bipolar (Series)	1.17	1.4	5	3.6	10			
	Unipolar	0.9	2	3.6	1.8	2.5			
PK268-01A PK268-01B	Bipolar (Series)	1.75	0.71	12	17.2	56	480×10 ⁻⁷	6	[3] [2]
	Unipolar	1.35	1	8.6	8.6	14			
PK268-02A PK268-02B	Bipolar (Series)	1.75	1.4	6.3	4.5	14.4	480×10 ⁻⁷	6	[3] [2]
	Unipolar	1.35	2	4.5	2.25	3.6			
PK268-03A PK268-03B	Bipolar (Series)	1.75	2.1	4.2	2	6.4	480×10 ⁻⁷	6	[3] [2]
	Unipolar	1.35	3	3	1	1.6			
PK268-E2.0A PK268-E2.0B	Bipolar (Parallel)	1.75	2.8	3.16	1.13	3.6	480×10 ⁻⁷	8	[6] [5] [4]
	Bipolar (Series)	1.75	1.4	6.3	4.5	14.4			
	Unipolar	1.35	2	4.5	2.25	3.6			

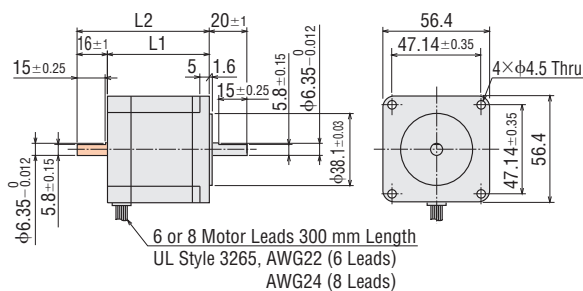
How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)	
PK264-0□A PK264-E2.0A PK264-0□B PK264-E2.0B	39	—	0.45	
PK266-0□A PK266-E2.0A PK266-0□B PK266-E2.0B		55		0.7
		70		
PK268-0□A PK268-E2.0A PK268-0□B PK268-E2.0B		76		—
	92			

● Enter the winding specifications in the box (□) within the model name.



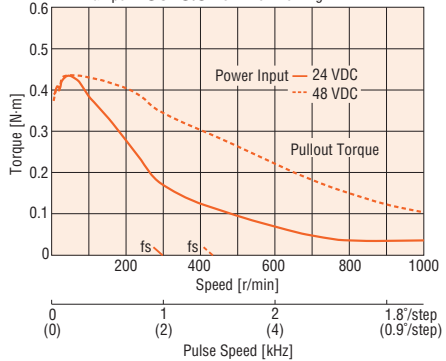
● These dimensions are for double shaft models. For single shaft models, ignore the orange (□) areas.

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

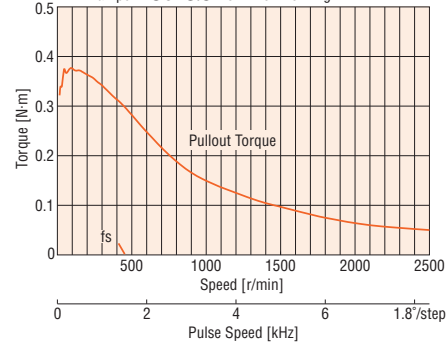
PK264-01A/PK264-01B Bipolar (Series)

Bipolar Constant Current Driver
Current: 0.71 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



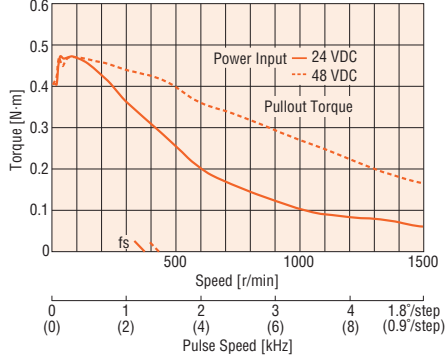
PK264-01A/PK264-01B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 1.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



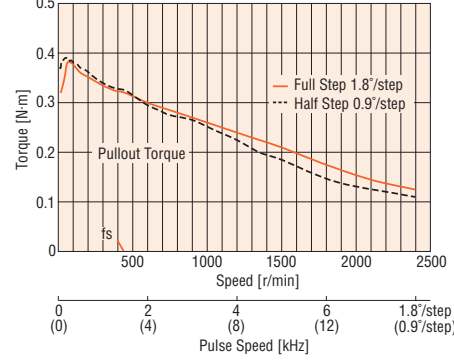
PK264-02A/PK264-02B Bipolar (Series)

Bipolar Constant Current Driver
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



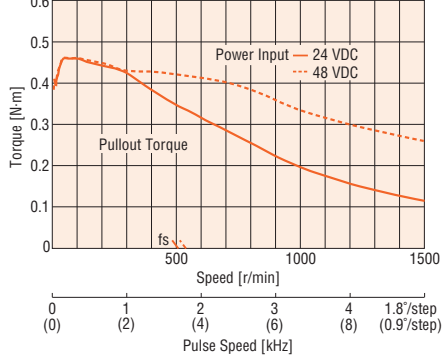
PK264-02A/PK264-02B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 2.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



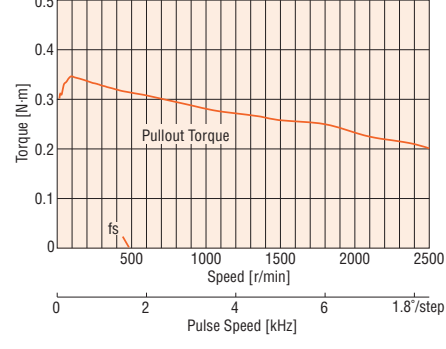
PK264-03A/PK264-03B Bipolar (Series)

Bipolar Constant Current Driver
Current: 2.1 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



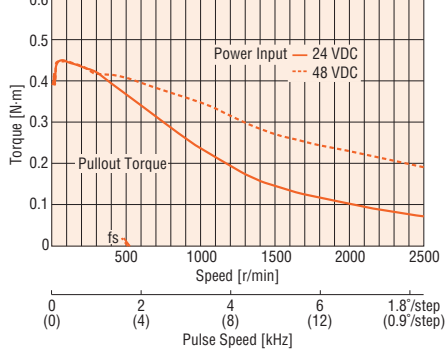
PK264-03A/PK264-03B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 3.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



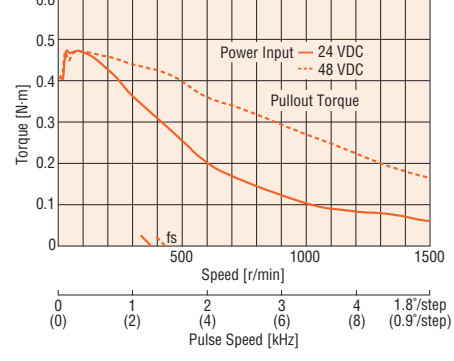
PK264-E2.0A/PK264-E2.0B Bipolar (Parallel)

Bipolar Constant Current Driver
Current: 2.8 A/Phase (Bipolar Parallel)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK264-E2.0A/PK264-E2.0B Bipolar (Series)

Bipolar Constant Current Driver
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input

DC Input

5-Phase

5-Phase

DC Input

2-Phase

2-Phase

5-Phase

Controllers

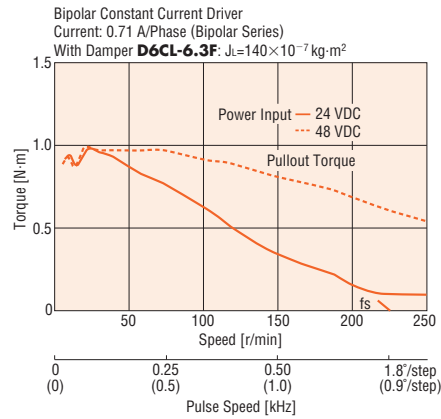
Accessories

Installation

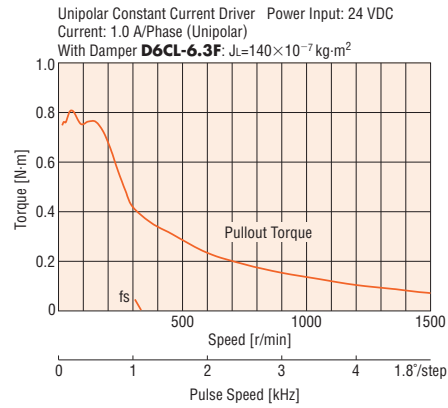
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

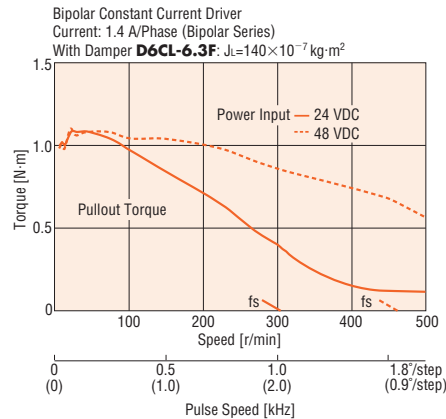
PK266-01A/PK266-01B Bipolar (Series)



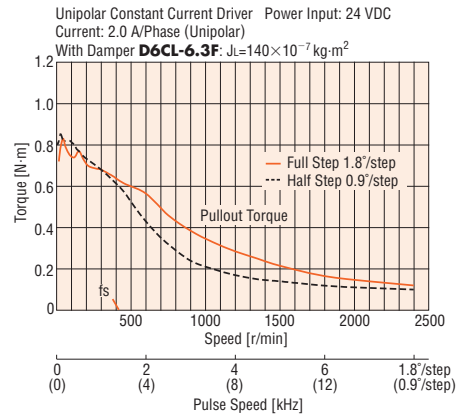
PK266-01A/PK266-01B Unipolar



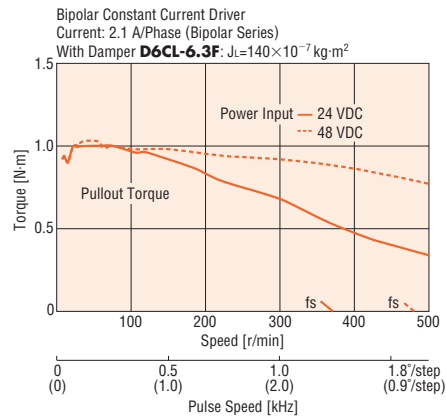
PK266-02A/PK266-02B Bipolar (Series)



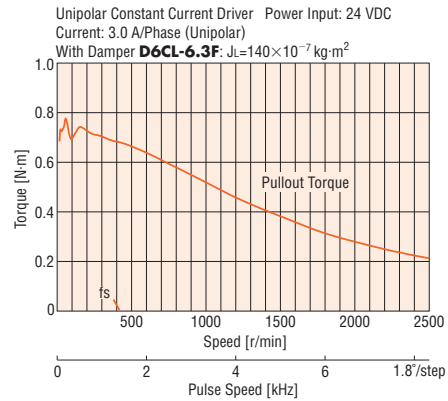
PK266-02A/PK266-02B Unipolar



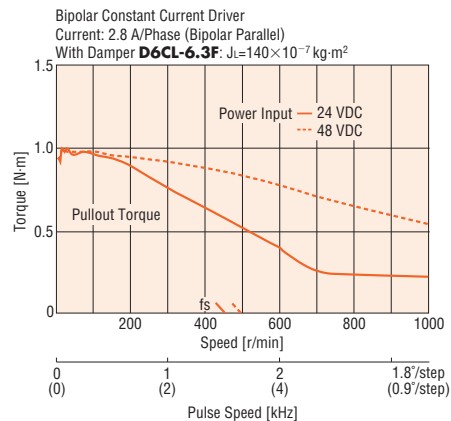
PK266-03A/PK266-03B Bipolar (Series)



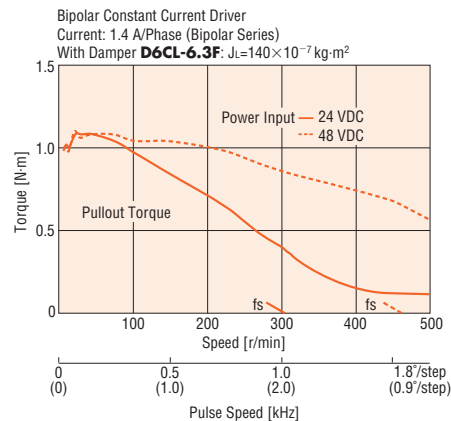
PK266-03A/PK266-03B Unipolar



PK266-E2.0A/PK266-E2.0B Bipolar (Parallel)



PK266-E2.0A/PK266-E2.0B Bipolar (Series)



Note:

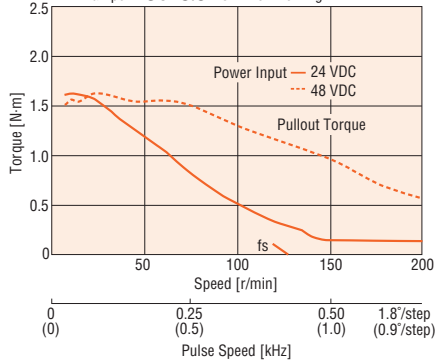
- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

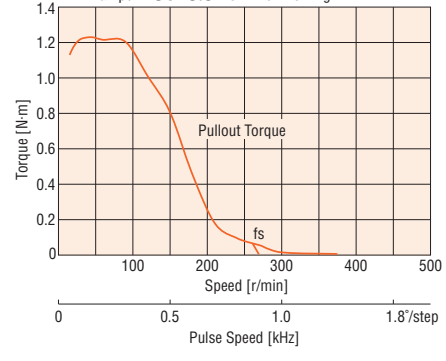
PK268-01A/PK268-01B Bipolar (Series)

Bipolar Constant Current Driver
Current: 0.71 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



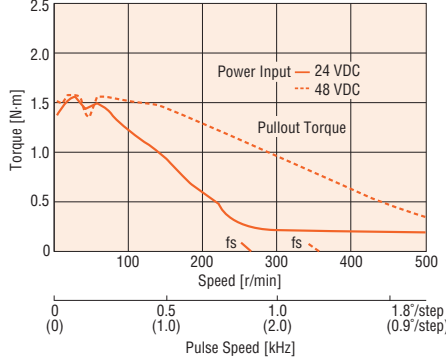
PK268-01A/PK268-01B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 1.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



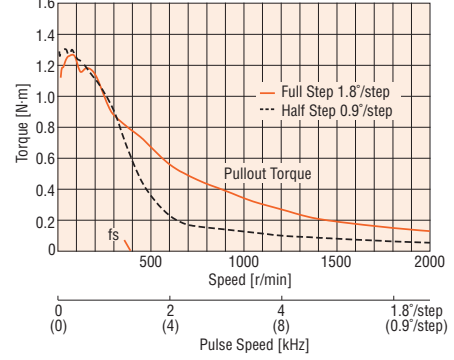
PK268-02A/PK268-02B Bipolar (Series)

Bipolar Constant Current Driver
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



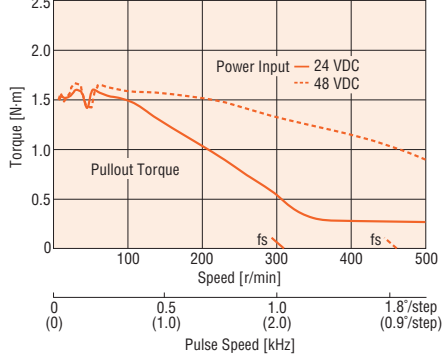
PK268-02A/PK268-02B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 2.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



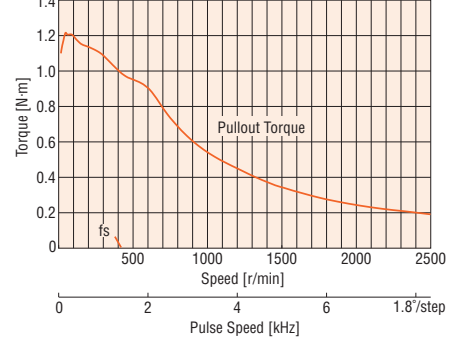
PK268-03A/PK268-03B Bipolar (Series)

Bipolar Constant Current Driver
Current: 2.1 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



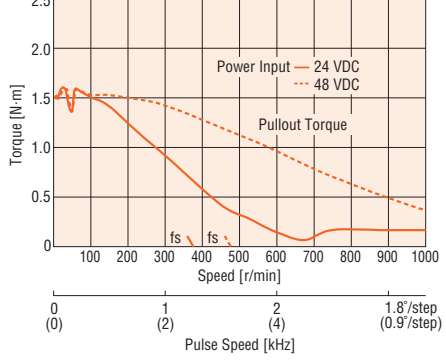
PK268-03A/PK268-03B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 3.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



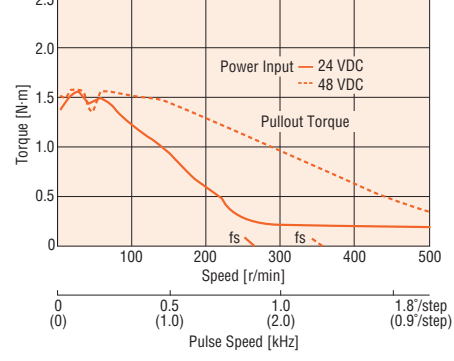
PK268-E2.0A/PK268-E2.0B Bipolar (Parallel)

Bipolar Constant Current Driver
Current: 2.8 A/Phase (Bipolar Parallel)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK268-E2.0A/PK268-E2.0B Bipolar (Series)

Bipolar Constant Current Driver
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input

DC Input

AC Input

DC Input

DC Input

DC Input

Stepping Motors

Stepping Motors

Controllers

Accessories

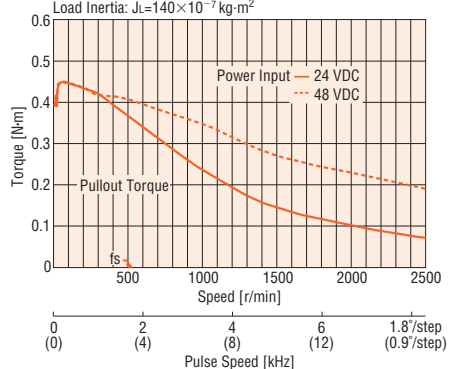
Installation

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

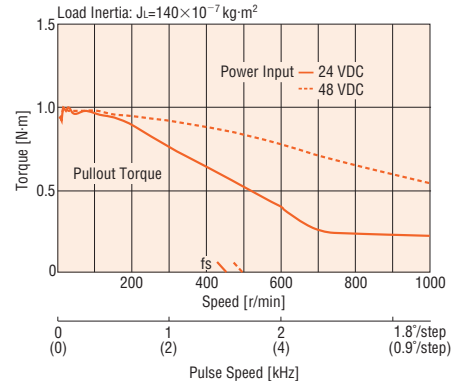
PK264DAT Bipolar

Bipolar Constant Current Driver
Current: 2.8 A/Phase
Load Inertia: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



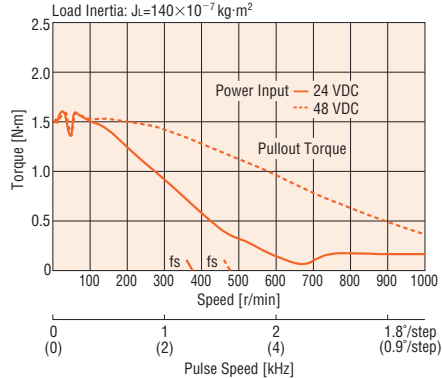
PK266DAT Bipolar

Bipolar Constant Current Driver
Current: 2.8 A/Phase
Load Inertia: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK268DAT Bipolar

Bipolar Constant Current Driver
Current: 2.8 A/Phase
Load Inertia: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input
Q5STEP
ASDC Input
Q5STEP
ASCAC Input
5-Phase
RK5-Phase
CRKDC Input
2-Phase
CMK2-Phase
CSK2-Phase
Stepping
Motors5-Phase
Stepping
Motors

Controllers

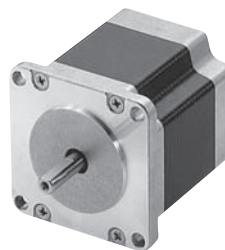
Accessories

Installation

56.4 mm

Step Angle 0.9°

High-Resolution Type



Specifications (RoHS)

Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK264M-01A PK264M-01B	Bipolar (Series)	0.48	0.71	8.1	11.4	26	120×10 ⁻⁷	6	[3]
	Unipolar	0.39	1	5.7	5.7	6.5			[2]
PK264M-02A PK264M-02B	Bipolar (Series)	0.48	1.4	3.9	2.8	6.8	120×10 ⁻⁷	6	[3]
	Unipolar	0.39	2	2.8	1.4	1.7			[2]
PK264M-03A PK264M-03B	Bipolar (Series)	0.48	2.1	2.6	1.26	3	120×10 ⁻⁷	6	[3]
	Unipolar	0.39	3	1.9	0.63	0.75			[2]
PK264M-E2.0A PK264M-E2.0B	Bipolar (Parallel)	0.48	2.8	1.96	0.7	1.7	120×10 ⁻⁷	8	[6]
	Bipolar (Series)	0.48	1.4	3.9	2.8	6.8			[5]
	Unipolar	0.39	2	2.8	1.4	1.7			[4]
PK266M-01A PK266M-01B	Bipolar (Series)	1.17	0.71	11	14.8	50.8	300×10 ⁻⁷	6	[3]
	Unipolar	0.9	1	7.4	7.4	12.7			[2]
PK266M-02A PK266M-02B	Bipolar (Series)	1.17	1.4	5	3.6	12.8	300×10 ⁻⁷	6	[3]
	Unipolar	0.9	2	3.6	1.8	3.2			[2]
PK266M-03A PK266M-03B	Bipolar (Series)	1.17	2.1	3.2	1.5	5.8	300×10 ⁻⁷	6	[3]
	Unipolar	0.9	3	2.3	0.75	1.45			[2]
PK266M-E2.0A PK266M-E2.0B	Bipolar (Parallel)	1.17	2.8	2.52	0.9	3.2	300×10 ⁻⁷	8	[6]
	Bipolar (Series)	1.17	1.4	5	3.6	12.8			[5]
	Unipolar	0.9	2	3.6	1.8	3.2			[4]
PK268M-01A PK268M-01B	Bipolar (Series)	1.75	0.71	12	17.2	77.6	480×10 ⁻⁷	6	[3]
	Unipolar	1.35	1	8.6	8.6	19.4			[2]
PK268M-02A PK268M-02B	Bipolar (Series)	1.75	1.4	6.3	4.5	19.2	480×10 ⁻⁷	6	[3]
	Unipolar	1.35	2	4.5	2.25	4.8			[2]
PK268M-03A PK268M-03B	Bipolar (Series)	1.75	2.1	4.2	2	8.4	480×10 ⁻⁷	6	[3]
	Unipolar	1.35	3	3	1	2.1			[2]
PK268M-E2.0A PK268M-E2.0B	Bipolar (Parallel)	1.75	2.8	3.16	1.13	4.8	480×10 ⁻⁷	8	[6]
	Bipolar (Series)	1.75	1.4	6.3	4.5	19.2			[5]
	Unipolar	1.35	2	4.5	2.25	4.8			[4]

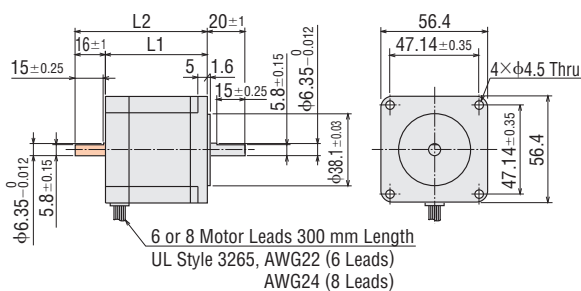
How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK264M-0□A PK264M-E2.0A	39	—	0.45
PK264M-0□B PK264M-E2.0B		55	
PK266M-0□A PK266M-E2.0A	54	—	0.7
PK266M-0□B PK266M-E2.0B		70	
PK268M-0□A PK268M-E2.0A	76	—	1.0
PK268M-0□B PK268M-E2.0B		92	

● Enter the winding specification in the box (□) within the model name.



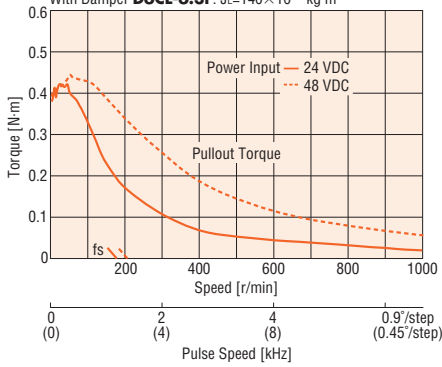
● These dimensions are for double shaft models. For single shaft models, ignore the orange (□) areas.

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

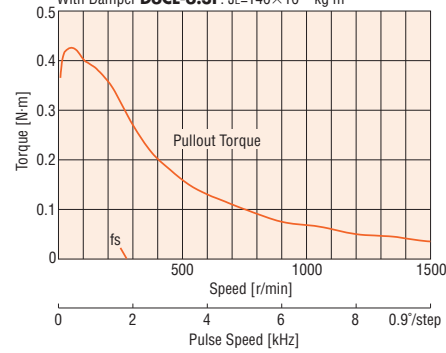
PK264M-01A/PK264M-01B Bipolar (Series)

Bipolar Constant Current Driver
Current: 0.71 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



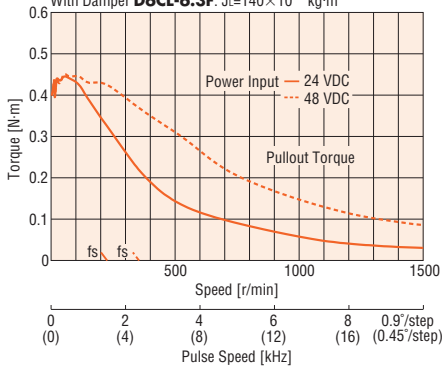
PK264M-01A/PK264M-01B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 1.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



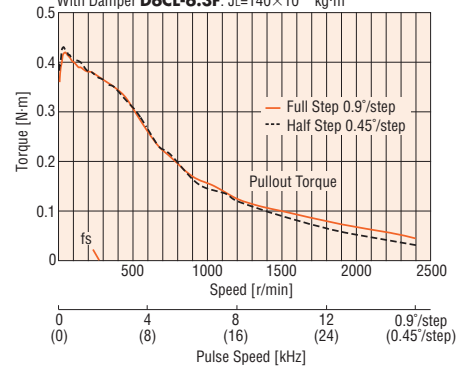
PK264M-02A/PK264M-02B Bipolar (Series)

Bipolar Constant Current Driver
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



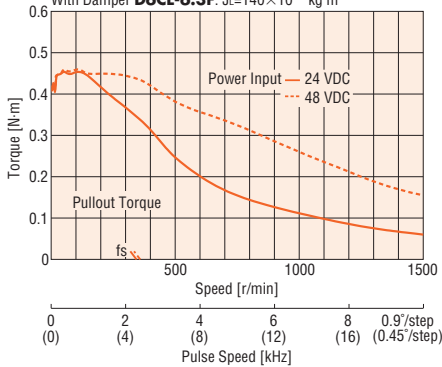
PK264M-02A/PK264M-02B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 2.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



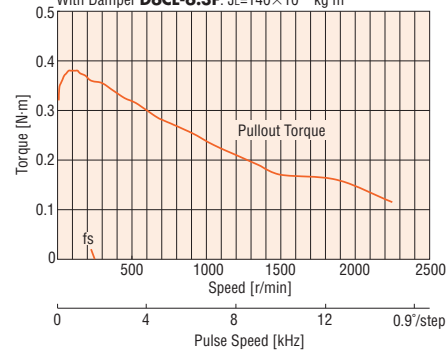
PK264M-03A/PK264M-03B Bipolar (Series)

Bipolar Constant Current Driver
Current: 2.1 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



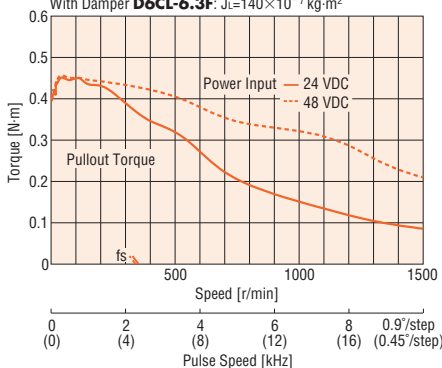
PK264M-03A/PK264M-03B Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 3.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



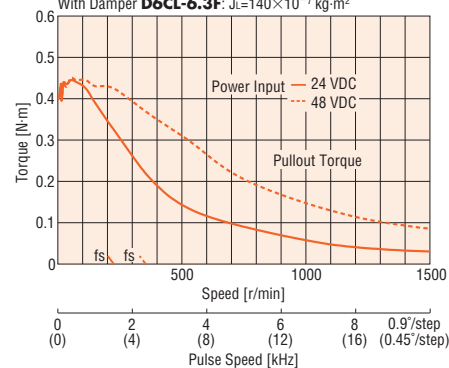
PK264M-E2.0A/PK264M-E2.0B Bipolar (Parallel)

Bipolar Constant Current Driver
Current: 2.8 A/Phase (Bipolar Parallel)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK264M-E2.0A/PK264M-E2.0B Bipolar (Series)

Bipolar Constant Current Driver
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



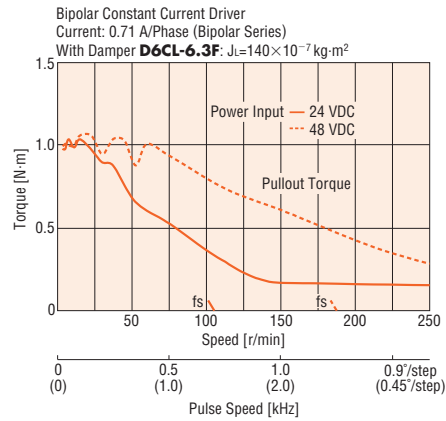
Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

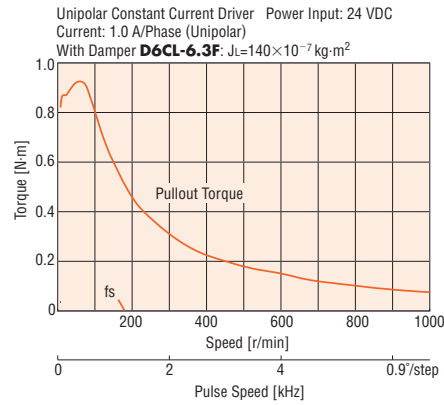
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

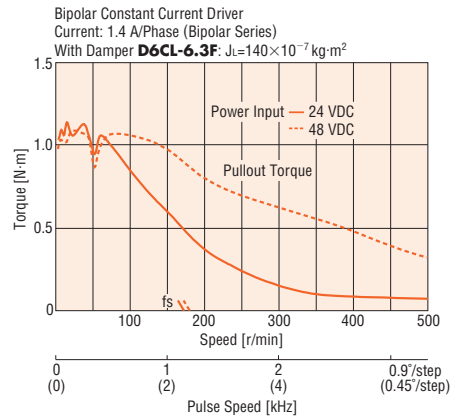
PK266M-01A/PK266M-01B Bipolar (Series)



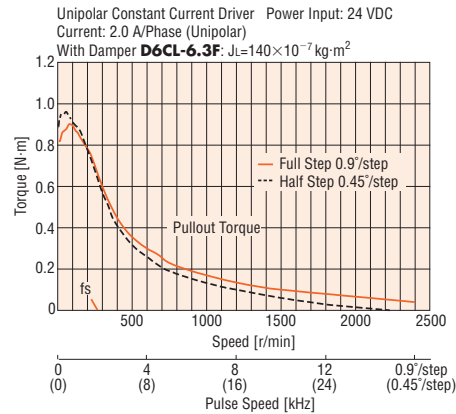
PK266M-01A/PK266M-01B Unipolar



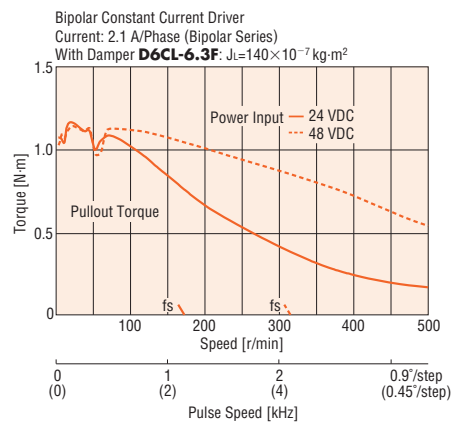
PK266M-02A/PK266M-02B Bipolar (Series)



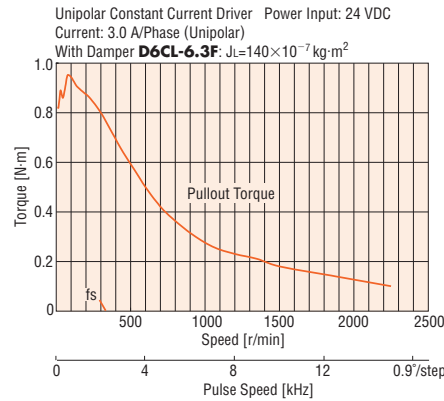
PK266M-02A/PK266M-02B Unipolar



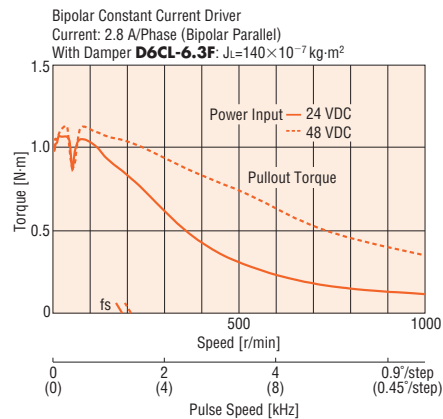
PK266M-03A/PK266M-03B Bipolar (Series)



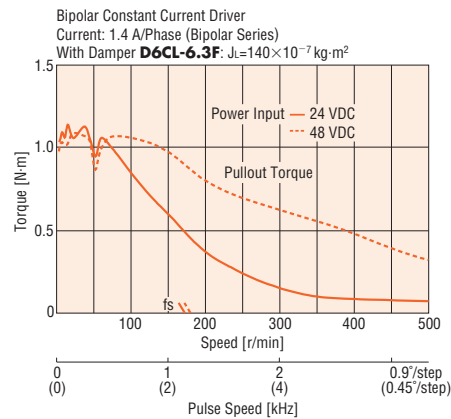
PK266M-03A/PK266M-03B Unipolar



PK266M-E2.0A/PK266M-E2.0B Bipolar (Parallel)



PK266M-E2.0A/PK266M-E2.0B Bipolar (Series)

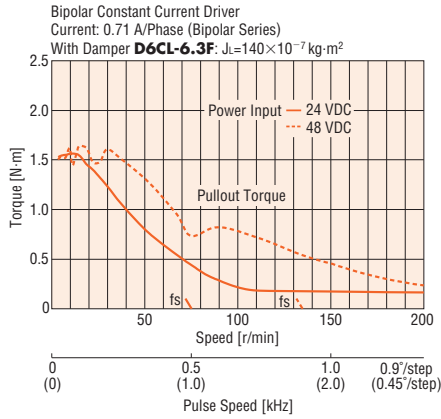
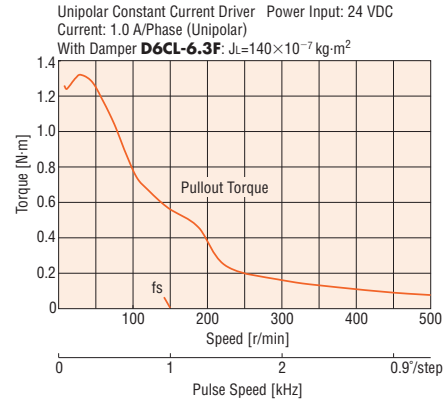
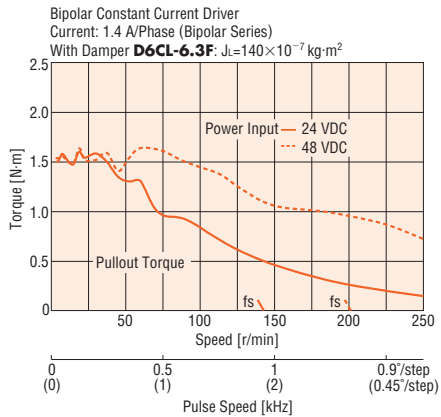
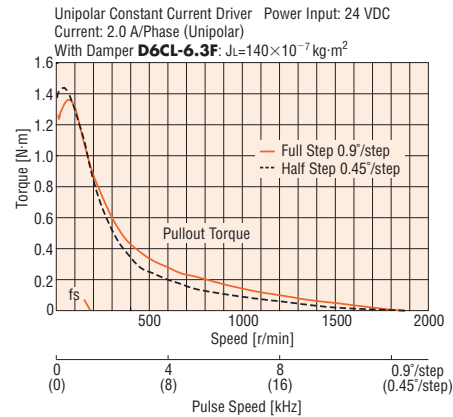
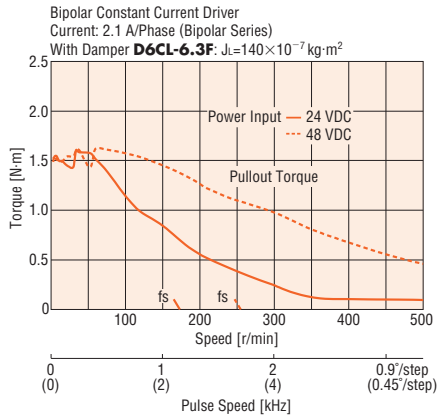
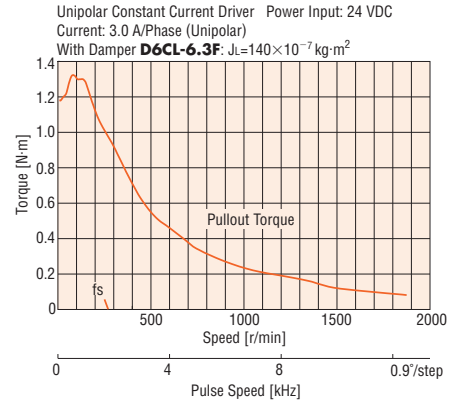
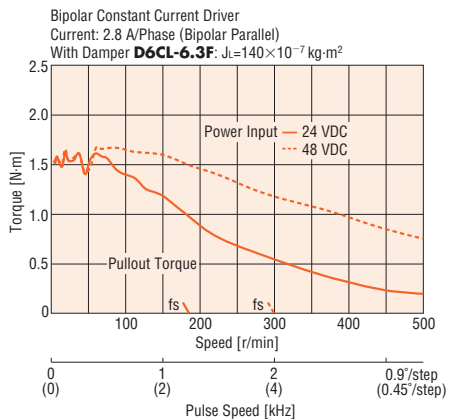
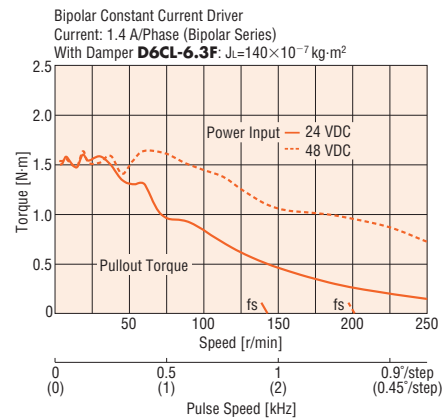


Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

PK268M-01A/PK268M-01B Bipolar (Series)**PK268M-01A/PK268M-01B Unipolar****PK268M-02A/PK268M-02B Bipolar (Series)****PK268M-02A/PK268M-02B Unipolar****PK268M-03A/PK268M-03B Bipolar (Series)****PK268M-03A/PK268M-03B Unipolar****PK268M-E2.0A/PK268M-E2.0B Bipolar (Parallel)****PK268M-E2.0A/PK268M-E2.0B Bipolar (Series)****Note:**

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input
Q5STEP
ASDC Input
Q5STEP
ASCAC Input
5-Phase
RK5-Phase
CRKDC Input
2-Phase
CMK2-Phase
CSK2-Phase
Stepping
Motors5-Phase
Stepping
Motors

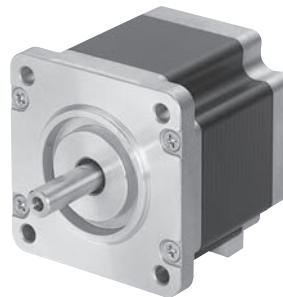
Controllers

Accessories

Installation

60 mm

Step Angle 1.8°
High-Torque Type



Specifications (RoHS)

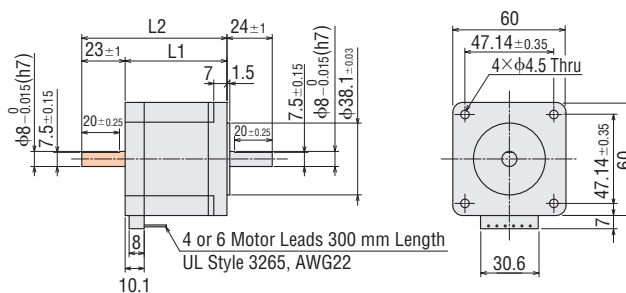
Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wiring and Connections (See Page C-192)
PK264JDA PK264JDB	Bipolar	1.06	2.8	2.1	0.73	1.8	280×10 ⁻⁷	4	[1]
PK264JA PK264JB	Bipolar (Series)	1.06	1.4	4.1	2.92	7.2	280×10 ⁻⁷	6	[3]
	Unipolar	0.75	2	2.9	1.46	1.8			[2]
PK266JDA PK266JDB	Bipolar	1.75	2.8	2.8	1	3.05	450×10 ⁻⁷	4	[1]
PK266JA PK266JB	Bipolar (Series)	1.75	1.4	5.6	4	12.2	450×10 ⁻⁷	6	[3]
	Unipolar	1.35	2	4	2	3.05			[2]
PK267JDA PK267JDB	Bipolar	2.2	2.8	3.4	1.2	3.54	570×10 ⁻⁷	4	[1]
PK267JA PK267JB	Bipolar (Series)	2.2	1.4	6.7	4.8	14.2	570×10 ⁻⁷	6	[3]
	Unipolar	1.7	2	4.8	2.4	3.54			[2]
PK269JDA PK269JDB	Bipolar	3.1	2.8	4.2	1.49	5.7	900×10 ⁻⁷	4	[1]
PK269JA PK269JB	Bipolar (Series)	3.1	1.4	8.3	5.96	22.8	900×10 ⁻⁷	6	[3]
	Unipolar	2.2	2	6	2.98	5.7			[2]

How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK264JDA	43.5	—	0.6
PK264JA		—	
PK264JDB		66.5	
PK264JB		—	
PK266JDA	54	—	0.83
PK266JA		—	
PK266JDB		77	
PK266JB		—	
PK267JDA	65	—	1.02
PK267JA		—	
PK267JDB		88	
PK267JB		—	
PK269JDA	85	—	1.43
PK269JA		—	
PK269JDB		108	
PK269JB		—	

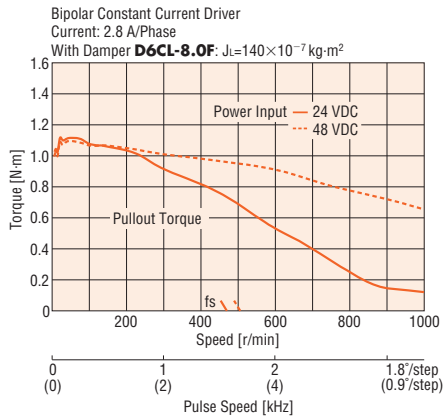


● These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.

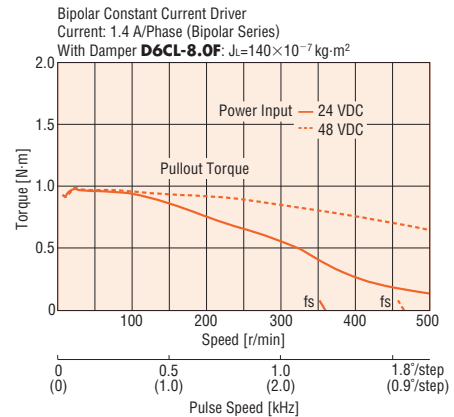
Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

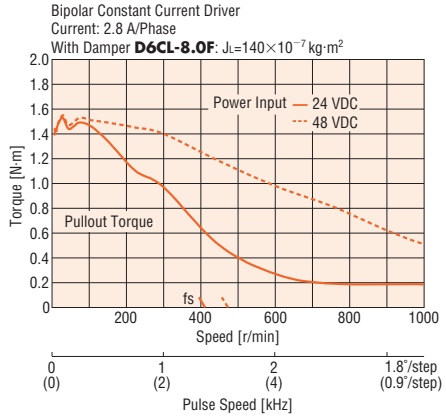
PK264JDA/PK264JDB Bipolar



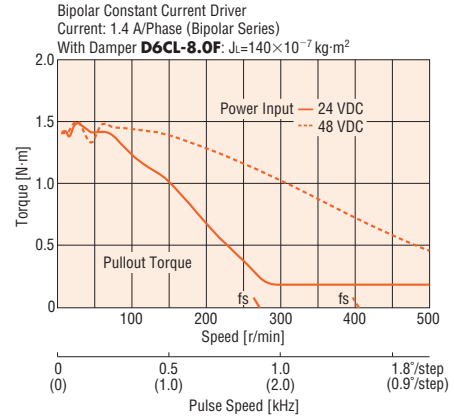
PK264JA/PK264JB Bipolar (Series)



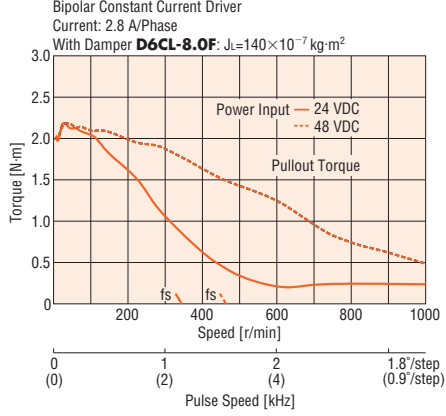
PK266JDA/PK266JDB Bipolar



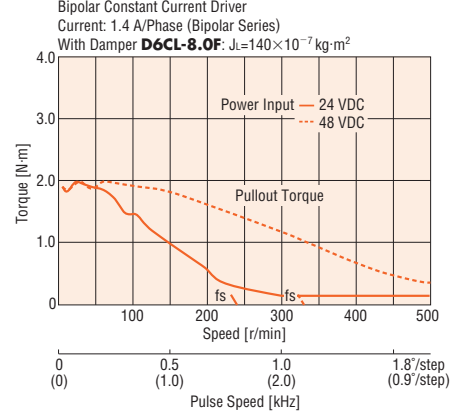
PK266JA/PK266JB Bipolar (Series)



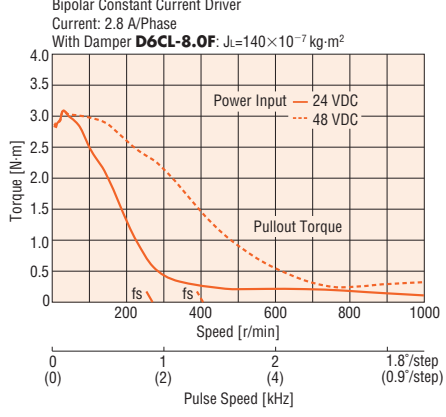
PK267JDA/PK267JDB Bipolar



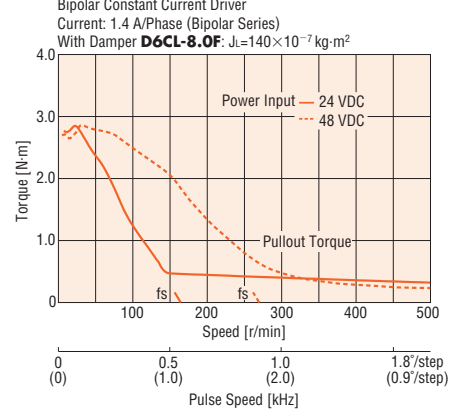
PK267JA/PK267JB Bipolar (Series)



PK269JDA/PK269JDB Bipolar



PK269JA/PK269JB Bipolar (Series)



Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input
Q57EP
AS

DC Input
Q57EP
ASC

AC Input
5-Phase
RK

5-Phase
CRK

DC Input
2-Phase
CMK

2-Phase
CSK

2-Phase
Stepping
Motors

5-Phase
Stepping
Motors

Controllers

Accessories

Installation

Speed – Torque Characteristics

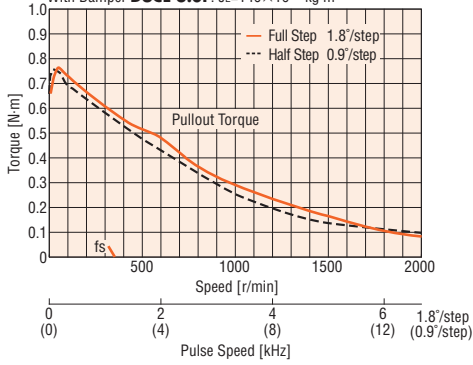
How to read speed – torque characteristics → Page C-10

PK264JA/PK264JB Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC

Current: 2.0 A/Phase (Unipolar)

With Damper **D6CL-8.0F**: $J_L=140 \times 10^{-7} \text{ kg} \cdot \text{m}^2$

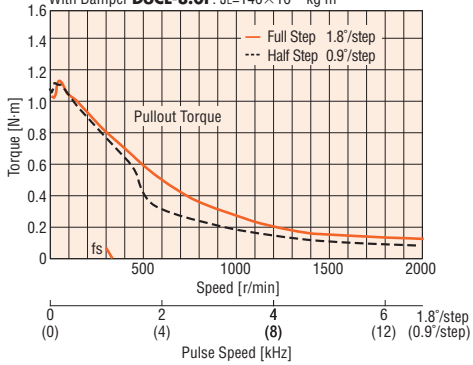


PK266JA/PK266JB Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC

Current: 2.0 A/Phase (Unipolar)

With Damper **D6CL-8.0F**: $J_L=140 \times 10^{-7} \text{ kg} \cdot \text{m}^2$

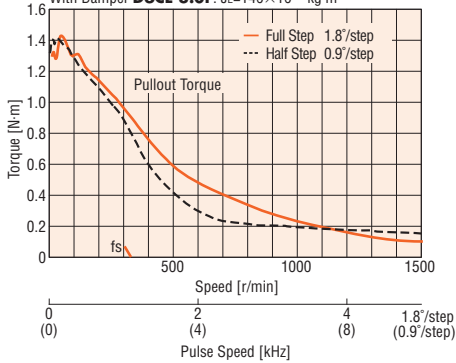


PK267JA/PK267JB Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC

Current: 2.0 A/Phase (Unipolar)

With Damper **D6CL-8.0F**: $J_L=140 \times 10^{-7} \text{ kg} \cdot \text{m}^2$

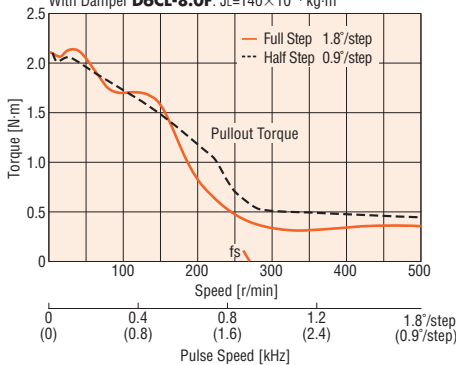


PK269JA/PK269JB Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC

Current: 2.0 A/Phase (Unipolar)

With Damper **D6CL-8.0F**: $J_L=140 \times 10^{-7} \text{ kg} \cdot \text{m}^2$



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

60 mm

SH Geared Type



Specifications RoHS

Motor Specifications

Model Single Shaft Double Shaft	Connection Type	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω /phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK264AE-SG <input type="checkbox"/> PK264BE-SG <input type="checkbox"/>	Bipolar (Parallel)	2.8	1.96	0.7	1.4	120×10 ⁻⁷	8	6
	Bipolar (Series)	1.4	3.9	2.8	5.6			5
	Unipolar	2	2.8	1.4	1.4			4

How to read specifications table → Page C-10

- Degree of Protection: IP30
- Enter the gear ratio in the box (□) within the model name.
- Backlash value is approximately 1 to 2°.

Note:

- Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 1:3.6, 1:7.2, 1:9 and 1:10. It is the opposite for 1:18 and 1:36 gear ratios.

Gearmotor Specifications

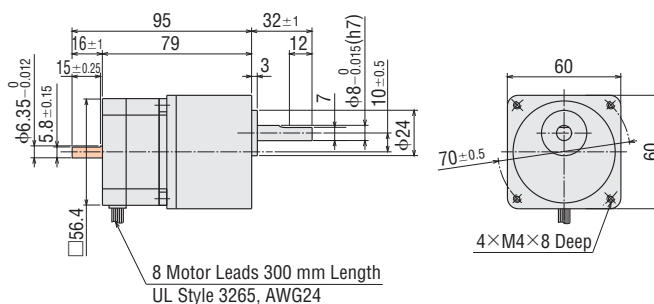
Model Single Shaft Double Shaft	Gear Ratio	Holding Torque* N·m	Step Angle	Permissible Speed r/min
PK264AE-SG3.6 PK264BE-SG3.6	1:3.6	1	0.5°	500
PK264AE-SG7.2 PK264BE-SG7.2	1:7.2	2	0.25°	250
PK264AE-SG9 PK264BE-SG9	1:9	2.5	0.2°	200
PK264AE-SG10 PK264BE-SG10	1:10	2.7	0.18°	180
PK264AE-SG18 PK264BE-SG18	1:18	3	0.1°	100
PK264AE-SG36 PK264BE-SG36	1:36	4	0.05°	50

*Holding torque is the same regardless of the connection type, due to the permissible torque limit of the gearhead.

Dimensions (Unit = mm)

Model	Gear Ratio	Mass (kg)
PK264AE-SG <input type="checkbox"/> PK264BE-SG <input type="checkbox"/>	3.6 7.2 9 10 18 36	0.75

- Enter the gear ratio in the box (□) within the model name.



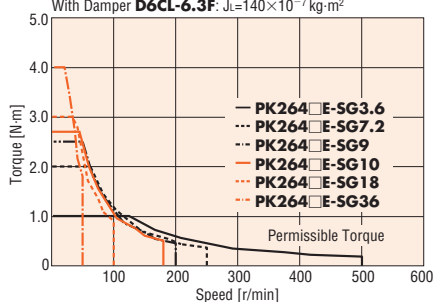
- These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.
- Screws (Included)
M4 Length 15 mm→4 Pieces

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

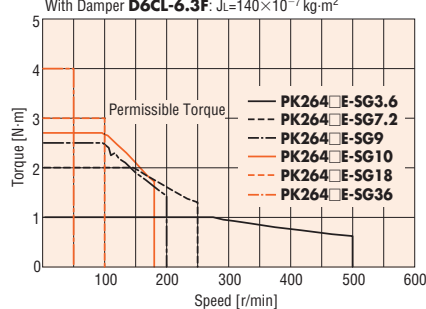
PK264AE-SG□/PK264BE-SG□ Bipolar (Series) 24 VDC

Bipolar Constant Current Driver Power Input: 24 VDC
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



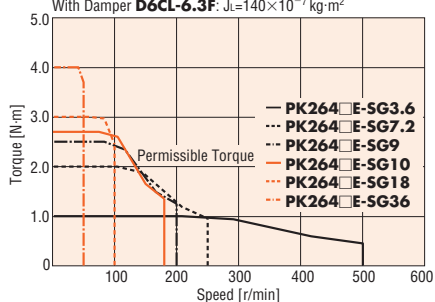
PK264AE-SG□/PK264BE-SG□ Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 2.0 A/Phase (Unipolar)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK264AE-SG□/PK264BE-SG□ Bipolar (Series) 48 VDC

Bipolar Constant Current Driver Power Input: 48 VDC
Current: 1.4 A/Phase (Bipolar Series)
With Damper **D6CL-6.3F**: $J_L=140 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Introduction

AC Input

DC Input

AC Input

DC Input

DC Input

DC Input

2-Phase Stepping Motors

5-Phase Stepping Motors

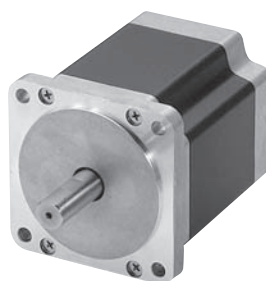
Controllers

Accessories

Installation

85 mm

Step Angle 1.8°
Standard Type



Specifications (RoHS)

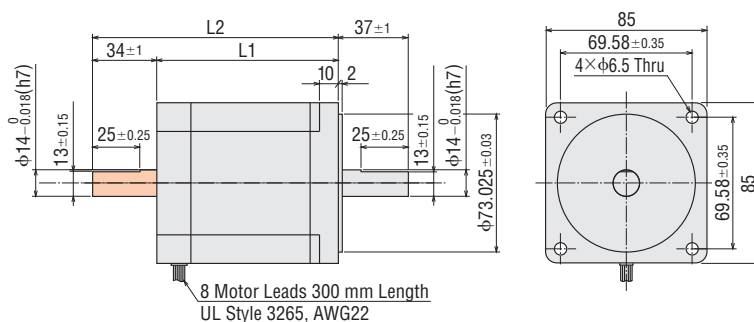
Model Single Shaft Double Shaft	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω /phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK296-E4.5A PK296-E4.5B	Bipolar (Parallel)	3.1	6.3	1.4	0.24	1.5	1400×10^{-7}	8	[6]
	Bipolar (Series)	3.1	3.18	2.8	0.96	6.0			[5]
	Unipolar	2.2	4.5	2	0.48	1.5			[4]
PK299-E4.5A PK299-E4.5B	Bipolar (Parallel)	6.2	6.3	1.9	0.33	2.5	2700×10^{-7}	8	[6]
	Bipolar (Series)	6.2	3.18	3.9	1.32	10.0			[5]
	Unipolar	4.4	4.5	2.8	0.66	2.5			[4]
PK2913-E4.0A PK2913-E4.0B	Bipolar (Parallel)	9.3	5.6	2.6	0.49	4.2	4000×10^{-7}	8	[6]
	Bipolar (Series)	9.3	2.8	5.3	1.94	16.8			[5]
	Unipolar	6.6	4	3.8	0.97	4.2			[4]

How to read specifications table → Page C-10

● Degree of Protection: IP30

Dimensions (Unit = mm)

Model	L1	L2	Mass (kg)
PK296-E4.5A	66	—	1.7
PK296-E4.5B	66	100	1.7
PK299-E4.5A	96	—	2.8
PK299-E4.5B	96	130	2.8
PK2913-E4.0A	126	—	3.8
PK2913-E4.0B	126	160	3.8



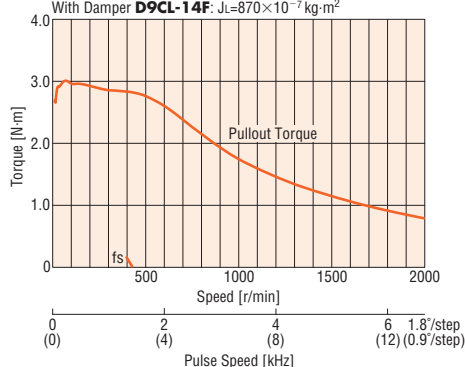
● These dimensions are for double shaft models. For single shaft models, ignore the orange (■) areas.

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

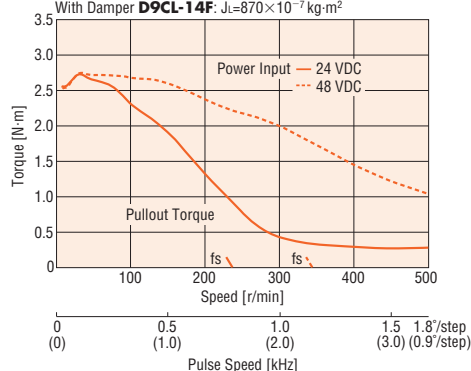
PK296-E4.5A/PK296-E4.5B Bipolar (Parallel)

Bipolar Constant Current Driver Power Input: 60 VDC
Current: 6.3 A/Phase (Bipolar Parallel)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



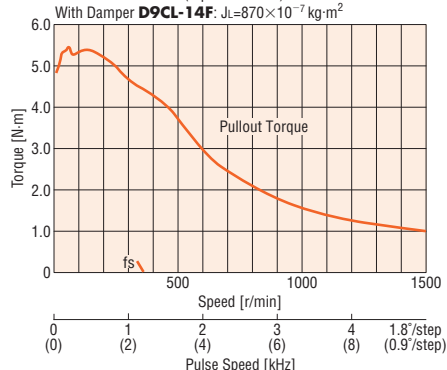
PK296-E4.5A/PK296-E4.5B Bipolar (Series)

Bipolar Constant Current Driver
Current: 3.18 A/Phase (Bipolar Series)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



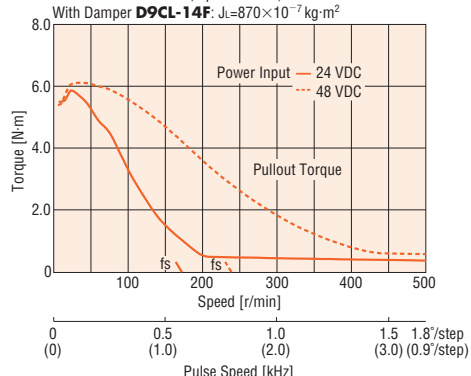
PK299-E4.5A/PK299-E4.5B Bipolar (Parallel)

Bipolar Constant Current Driver Power Input: 60 VDC
Current: 6.3 A/Phase (Bipolar Parallel)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



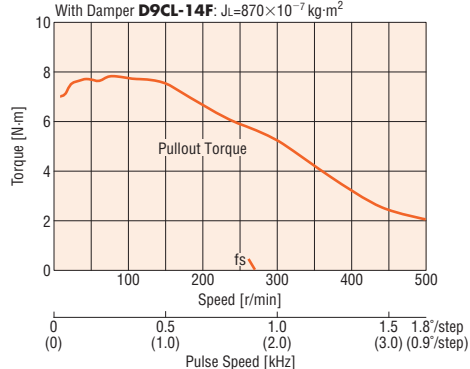
PK299-E4.5A/PK299-E4.5B Bipolar (Series)

Bipolar Constant Current Driver
Current: 3.18 A/Phase (Bipolar Series)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



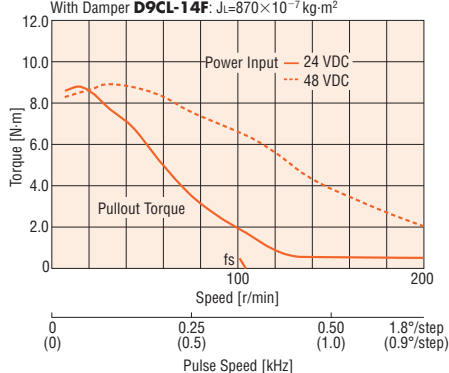
PK2913-E4.0A/PK2913-E4.0B Bipolar (Parallel)

Bipolar Constant Current Driver Power Input: 60 VDC
Current: 5.6 A/Phase (Bipolar Parallel)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK2913-E4.0A/PK2913-E4.0B Bipolar (Series)

Bipolar Constant Current Driver
Current: 2.8 A/Phase (Bipolar Series)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



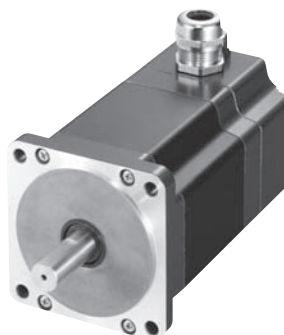
Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

85 mm

Step Angle 1.8°

Standard Type IP65 Rated Motor



Specifications (RoHS)



Model	Connection Type	Holding Torque N·m	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω/phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Number of Terminals (Pin)	Wirings and Connections (See Page C-192)
PK296EAT	Bipolar (Parallel)	3.1	6.3	1.4	0.24	1.5	1400×10 ⁻⁷	8	⑨
	Bipolar (Series)	3.1	3.18	2.8	0.96	6.0			⑧
	Unipolar	2.2	4.5	2	0.48	1.5			⑩
PK299EAT	Bipolar (Parallel)	6.2	6.3	1.9	0.33	2.5	2700×10 ⁻⁷	8	⑨
	Bipolar (Series)	6.2	3.18	3.9	1.32	10.0			⑧
	Unipolar	4.4	4.5	2.8	0.66	2.5			⑩
PK2913EAT	Bipolar (Parallel)	9.3	5.6	2.6	0.49	4.2	1400×10 ⁻⁷	8	⑨
	Bipolar (Series)	9.3	2.8	5.3	1.94	16.8			⑧
	Unipolar	6.6	4	3.8	0.97	4.2			⑩

How to read specifications table → Page C-10

List of safety standard approved products (model, standards, file no., certification body) → Page G-10

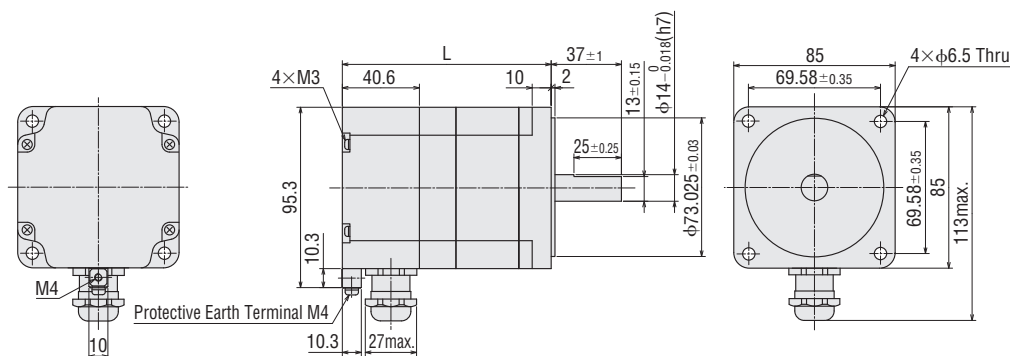
● Degree of protection: IP65*

* Excluding the gap between the shaft and the flange.

Dimensions (Unit = mm)

Model	L	Mass (kg)
PK296EAT	110	2.1
PK299EAT	140	3.2
PK2913EAT	170	4.3

● Use cable (VCT) with a diameter of φ7~13 mm. Accessory motor cable (with protective earth wire) (sold separately) is available. → Page C-254

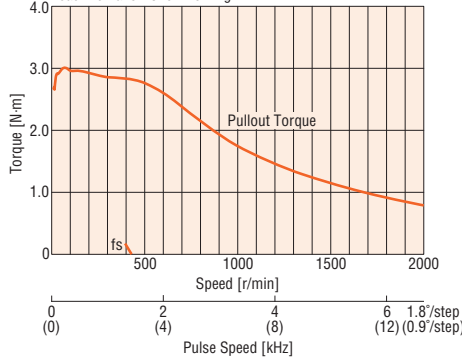


Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

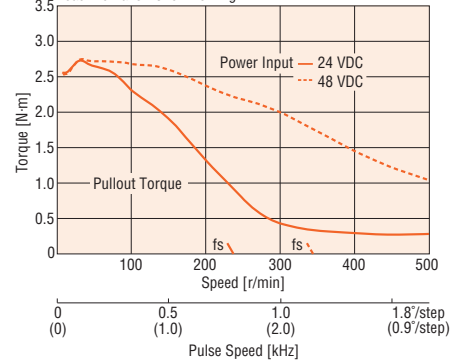
PK296EAT Bipolar (Parallel)

Bipolar Constant Current Driver Power Input: 60 VDC
 Current: 6.3 A/Phase (Bipolar Parallel)
 Load Inertia: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



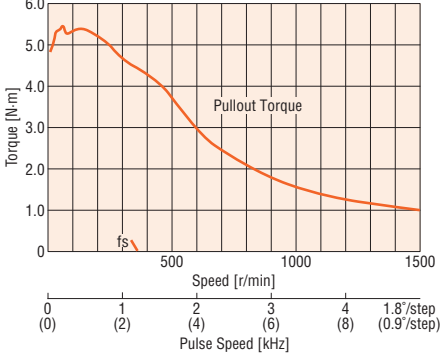
PK296EAT Bipolar (Series)

Bipolar Constant Current Driver
 Current: 3.18 A/Phase (Bipolar Series)
 Load Inertia: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



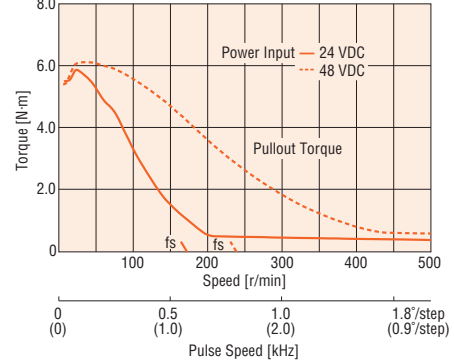
PK299EAT Bipolar (Parallel)

Bipolar Constant Current Driver Power Input: 60 VDC
 Current: 6.3 A/Phase (Bipolar Parallel)
 Load Inertia: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



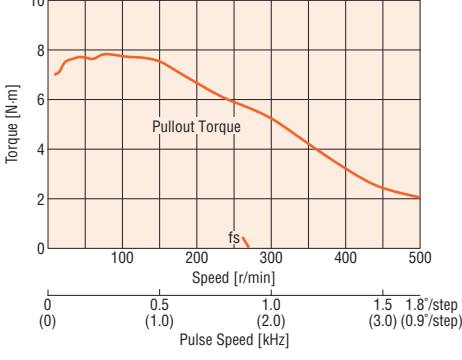
PK299EAT Bipolar (Series)

Bipolar Constant Current Driver
 Current: 3.18 A/Phase (Bipolar Series)
 Load Inertia: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



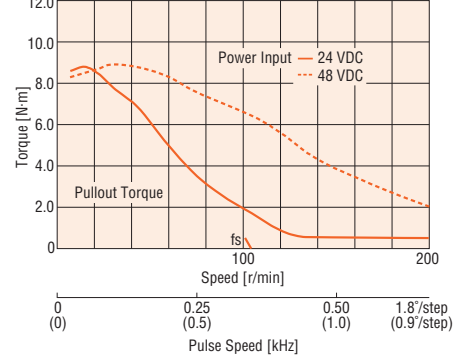
PK2913EAT Bipolar (Parallel)

Bipolar Constant Current Driver Power Input: 60 VDC
 Current: 5.6 A/Phase (Bipolar Parallel)
 Load Inertia: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK2913EAT Bipolar (Series)

Bipolar Constant Current Driver
 Current: 2.8 A/Phase (Bipolar Series)
 Load Inertia: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$

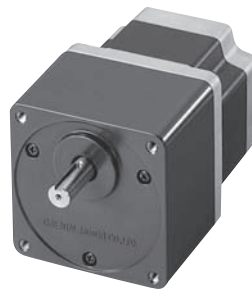


Note:

● Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

90 mm

SH Geared Type



Specifications RoHS

Motor Specifications

Model Single Shaft Double Shaft	Connection Type	Current per Phase A/phase	Voltage VDC	Resistance per Phase Ω /phase	Inductance mH/phase	Rotor Inertia J: kg·m ²	Lead Wires (Pin)	Wirings and Connections (See Page C-192)
PK296AE-SG □ PK296BE-SG □	Bipolar (Parallel)	4.2	1	0.24	1.5	1400×10 ⁻⁷	8	6
	Bipolar (Series)	2.1	2	0.96	6.0			5
	Unipolar	3	1.4	0.48	1.5			4

How to read specifications table → Page C-10

- Degree of Protection: IP30
- Enter the gear ratio in the box (□) within the model name.
- Backlash value is approximately 1 to 2°.

Note:

- Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 1:3.6, 1:7.2, 1:9, 1:10 and 1:18. It is the opposite for 1:36 gear ratio.

Gearmotor Specifications

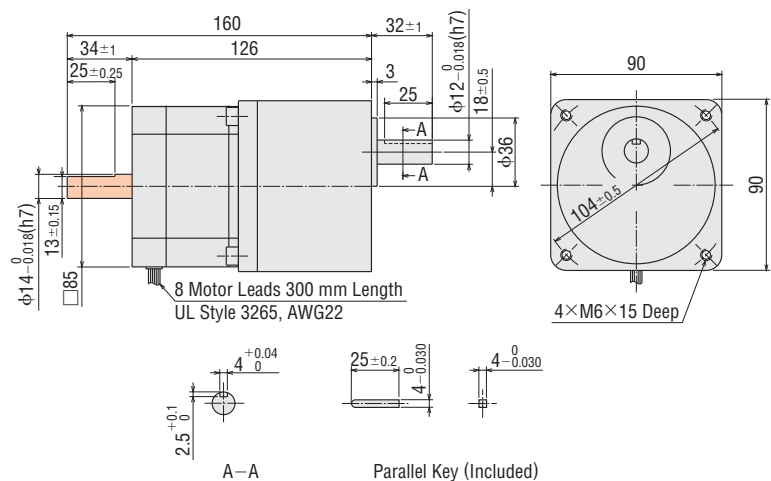
Model Single Shaft Double Shaft	Gear Ratio	Holding Torque* N·m	Step Angle	Permissible Speed r/min
PK296AE-SG3.6 PK296BE-SG3.6	1:3.6	2.5	0.5°	500
PK296AE-SG7.2 PK296BE-SG7.2	1:7.2	5	0.25°	250
PK296AE-SG9 PK296BE-SG9	1:9	6.3	0.2°	200
PK296AE-SG10 PK296BE-SG10	1:10	7	0.18°	180
PK296AE-SG18 PK296BE-SG18	1:18	9	0.1°	100
PK296AE-SG36 PK296BE-SG36	1:36	12	0.05°	50

*Holding torque is the same regardless of the connection type, due to the permissible torque limit of the gearhead.

Dimensions (Unit = mm)

Model	Gear Ratio	Mass (kg)
PK296AE-SG □ PK296BE-SG □	3.6, 7.2, 9, 10, 18, 36	2.8

- Enter the gear ratio in the box (□) within the model name.



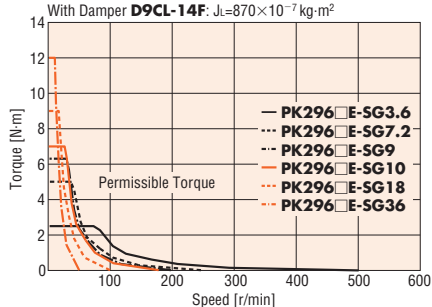
- These dimensions are for double shaft models. For single shaft models, ignore the orange (□) areas.
- Screws (Included)
M6 Length 18 mm—4 Pieces

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-10

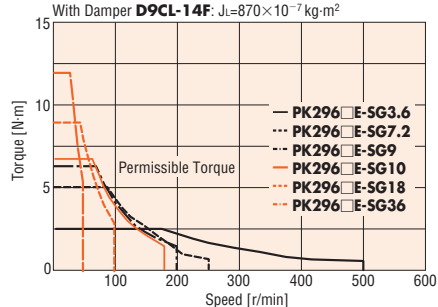
PK296AE-SG□/PK296BE-SG□ Bipolar (Series) 24 VDC

Bipolar Constant Current Driver Power Input: 24 VDC
Current: 2.1 A/Phase (Bipolar Series)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



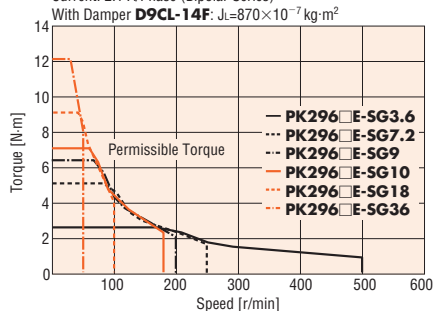
PK296AE-SG□/PK296BE-SG□ Unipolar

Unipolar Constant Current Driver Power Input: 24 VDC
Current: 3.0 A/Phase (Unipolar)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



PK296AE-SG□/PK296BE-SG□ Bipolar (Series) 48 VDC

Bipolar Constant Current Driver Power Input: 48 VDC
Current: 2.1 A/Phase (Bipolar Series)
With Damper **D9CL-14F**: $J_L=870 \times 10^{-7} \text{ kg}\cdot\text{m}^2$



Note:

- Pay attention to heat dissipation from motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

General Specifications

Specifications		Motor
Insulation Class		Class B (130°C) [Standard type IP65 rated motor: Recognized as class A (105°C) by UL/CSA Standards]
Insulation Resistance		100 MΩ or more when 500 VDC megger is applied between the windings and case under normal ambient temperature and humidity.
Dielectric Strength		Sufficient to withstand 1.0 kV at 50 Hz or 60 Hz applied between the windings and the case for 1 minute, under normal ambient temperature and humidity. (0.5 kV for motor frame size 28 mm, 35 mm and 42 mm, 1.5 kV for standard type IP65 rated motor)
Operating Environment (In Operation)	Ambient Temperature	-10~+50°C (non-freezing)
	Ambient Humidity	85% or less (no-condensing)
	Atmosphere	No corrosive gases, dust, water or oil (Standard type IP65 rated motor: no corrosive gases)
Temperature Rise		Temperature rise of windings measured by the resistance change method are 80°C or less. (at rated voltage, at standstill, two phases energized)
Stop Position Accuracy*1		±3 arc minutes (±0.05°) [±2 arc minutes (±0.034°) for PK26□J]
Shaft Runout		0.05 T.I.R. (mm)*4
Radial Play*2		0.025 mm maximum of 5 N
Axial Play*3		0.075 mm maximum of 10 N
Concentricity		0.075 T.I.R. (mm)*4
Perpendicularity		0.075 T.I.R. (mm)*4

*1 This value is for full step under no load. (The value changes with the size of the load.)

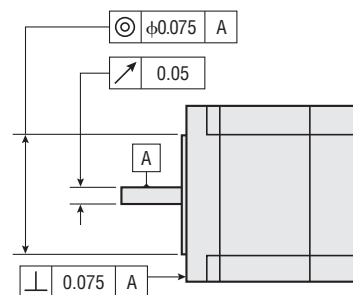
*2 Radial Play: Displacement in shaft position in the radial direction, when a 5 N load is applied in the vertical direction to the tip of the motor's shaft.

*3 Axial Play: Displacement in shaft position in the axial direction, when a 10 N load is applied to the motor's shaft in the axial direction.

*4 T.I.R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

Note:

- Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.



Unit = N

Permissible Overhung Load and Permissible Thrust Load

Type	Model	Gear Ratio	Permissible Overhung Load Distance from Shaft End (mm)					Permissible Thrust Load			
			0	5	10	15	20				
High-Torque Type	PK223P□ PK224P□ PK225P□	-	25	34	52	-	-	The permissible thrust load shall be no greater than the motor mass.			
	PK233P□ PK235P□		20	25	34	52	-				
	PK244P□ PK246P□		20	25	34	52	-				
	PK264JD□ PK264J□ PK266JD□ PK266J□ PK267JD□ PK267J□ PK269JD□ PK269J□		50	60	75	100	150				
	PK243-0□□ PK244-0□□ PK245-0□□		20	25	34	52	-				
	PK256-02□ PK258-02□		54	67	89	130	-				
	PK264-0□□ PK264-E2.0□ PK266-0□□ PK266-E2.0□ PK268-0□□ PK268-E2.0□ PK264DAT PK266DAT PK268DAT		54	67	89	130	-				
	PK296-E4.5□ PK299-E4.5□ PK2913-E4.0□ PK296EAT PK299EAT PK2913EAT		260	290	340	390	480				
	PK243M-0□□ PK244M-0□□ PK245M-0□□		20	25	34	52	-				
	PK264M-0□□ PK264M-E2.0□ PK266M-0□□ PK266M-E2.0□ PK268M-0□□ PK268M-E2.0□		54	67	89	130	-				
	SH Geared Type		PK223P□-SG□	7.2, 9, 10, 18, 36	15	17	20		23	-	10
			PK243□1-SG□	3.6, 7.2, 9, 10, 18, 36	10	15	20		30	-	15
			PK264□E-SG□ PK264□E-SG□	3.6, 7.2, 9, 10 18, 36	30 80	40 100	50 120		60 140	70 160	30
PK296□E-SG□		3.6, 7.2, 9, 10, 18, 36	220	250	300	350	400	100			

- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the winding specification **1**, **2** or **3** in the box (□) within the model name.

Introduction

AC Input
Q5STEP
ASDC Input
Q5STEP
ASCAC Input
5-Phase
RK5-Phase
CRKDC Input
2-Phase
CMK2-Phase
CSK2-Phase
Stepping
Motors5-Phase
Stepping
Motors

Controllers

Accessories

Installation