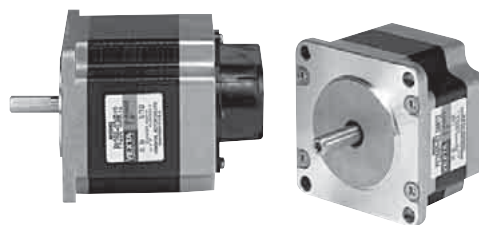


56.4 mm (2.22 in.)

PK Series Standard Type with Encoder



Specifications

Model Single Shaft	Basic Step Angle	Connection Type	Holding Torque		Rated Current A/phase	Voltage VDC	Resistance Ω /phase	Inductance mH/phase	Rotor Inertia J		Lead Wires
			N-m	oz-in					kg-m ²	oz-in ²	
PK264-01AR11 PK264-01AR12	1.8°	Bipolar (Series)	0.48	68	0.71	8.1	11.4	21.6	120×10^{-7}	0.66	6
		Unipolar	0.39	55	1	5.7	5.7	5.4			
PK264-02AR11 PK264-02AR12	1.8°	Bipolar (Series)	0.48	68	1.4	3.9	2.8	5.6	120×10^{-7}	0.66	6
		Unipolar	0.39	55	2	2.8	1.4	1.4			
PK264-03AR11 PK264-03AR12	1.8°	Bipolar (Series)	0.48	68	2.1	2.6	1.26	2.4	120×10^{-7}	0.66	6
		Unipolar	0.39	55	3	1.9	0.63	0.6			
PK264-E2.0AR11 PK264-E2.0AR12	1.8°	Bipolar (Parallel)	0.48	68	2.8	1.96	0.7	1.4	120×10^{-7}	0.66	8
		Bipolar (Series)	0.48	68	1.4	3.9	2.8	5.6			
		Unipolar	0.39	55	2	2.8	1.4	1.4			
PK266-01AR11 PK266-01AR12	1.8°	Bipolar (Series)	1.17	166	0.71	11	14.8	40	300×10^{-7}	1.64	6
		Unipolar	0.9	127	1	7.4	7.4	10			
PK266-02AR11 PK266-02AR12	1.8°	Bipolar (Series)	1.17	166	1.4	5	3.6	10	300×10^{-7}	1.64	6
		Unipolar	0.9	127	2	3.6	1.8	2.5			
PK266-03AR11 PK266-03AR12	1.8°	Bipolar (Series)	1.17	166	2.1	3.2	1.5	4.4	300×10^{-7}	1.64	6
		Unipolar	0.9	127	3	2.3	0.75	1.1			
PK266-E2.0AR11 PK266-E2.0AR12	1.8°	Bipolar (Parallel)	1.17	166	2.8	2.52	0.9	2.5	300×10^{-7}	1.64	8
		Bipolar (Series)	1.17	166	1.4	5	3.6	10			
		Unipolar	0.9	127	2	3.6	1.8	2.5			

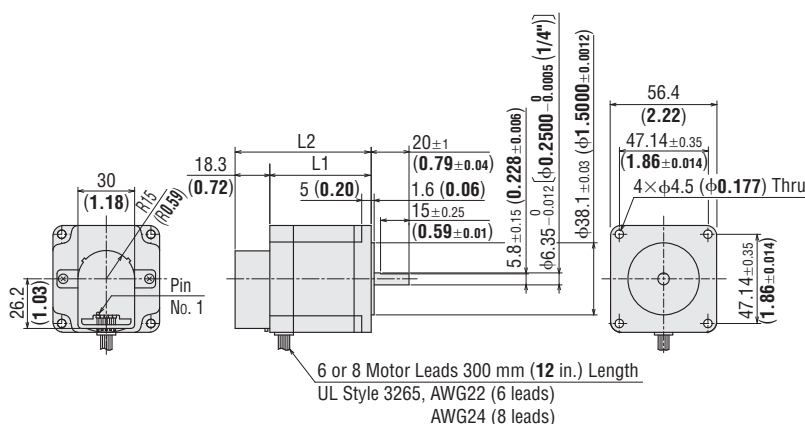
How to read specifications table → Page C-11

Wirings and connections → Page C-211

Dimensions Unit = mm (in.)

Model	L1	L2	Mass kg (lb.)	DXF
PK264-0□AR11 PK264-0□AR12	39 (1.54)	57.3 (2.26)	0.47 (1.03)	B808U
PK264-E2.0AR11 PK264-E2.0AR12				
PK266-0□AR11 PK266-0□AR12	54 (2.13)	72.3 (2.85)	0.72 (1.58)	B809U
PK266-E2.0AR11 PK266-E2.0AR12				

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



Encoder Specifications → Page C-267

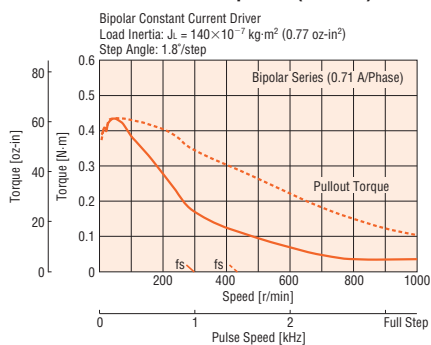
□ 28 mm
(1.10 in.)□ 35 mm
(1.38 in.)□ 42 mm
(1.65 in.)□ 50 mm
(1.97 in.)□ 56.4 mm
(2.22 in.)□ 60 mm
(2.36 in.)□ 85 mm
(3.35 in.)□ 90 mm
(3.54 in.)

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-12

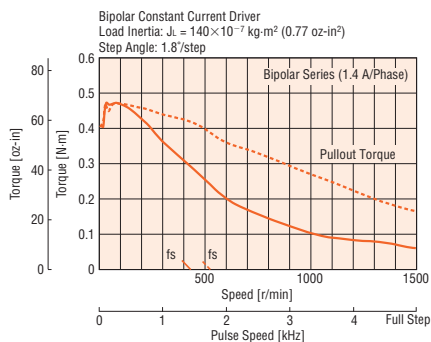
PK264-01AR11

PK264-01AR12 Bipolar (Series)



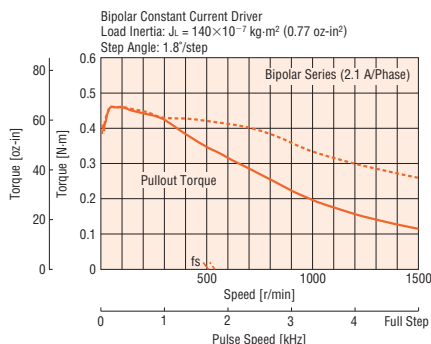
PK264-02AR11

PK264-02AR12 Bipolar (Series)



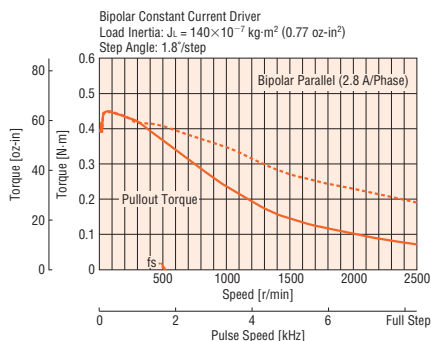
PK264-03AR11

PK264-03AR12 Bipolar (Series)



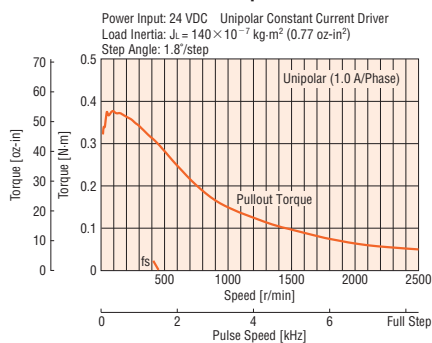
PK264-E2.0AR11

PK264-E2.0AR12 Bipolar (Parallel)



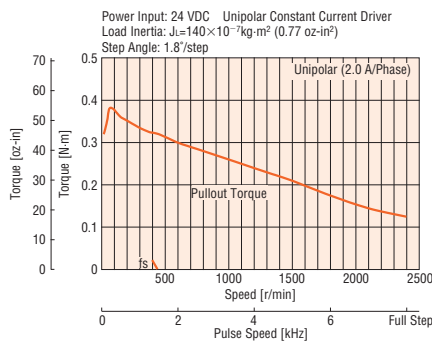
PK264-01AR11

PK264-01AR12 Unipolar



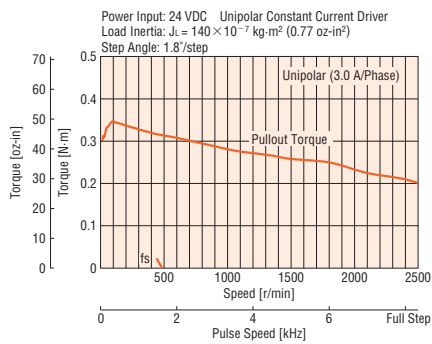
PK264-02AR11

PK264-02AR12 Unipolar



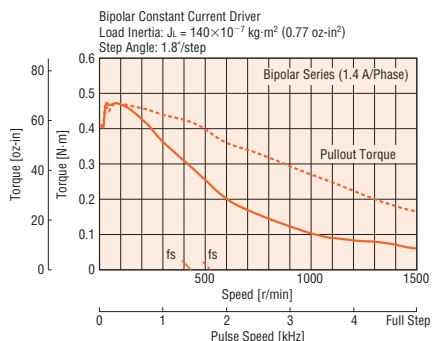
PK264-03AR11

PK264-03AR12 Unipolar



PK264-E2.0AR11

PK264-E2.0AR12 Bipolar (Series)

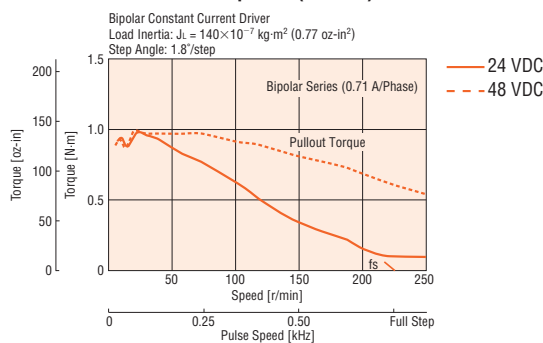


Note:

- 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 (212°F).

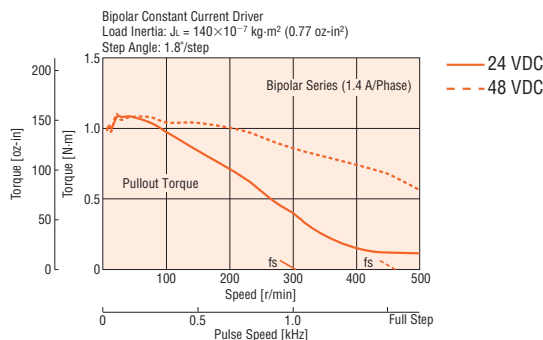
PK266-01AR11

PK266-01AR12 Bipolar (Series)



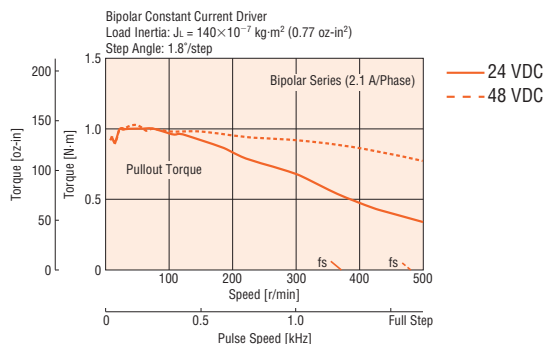
PK266-02AR11

PK266-02AR12 Bipolar (Series)



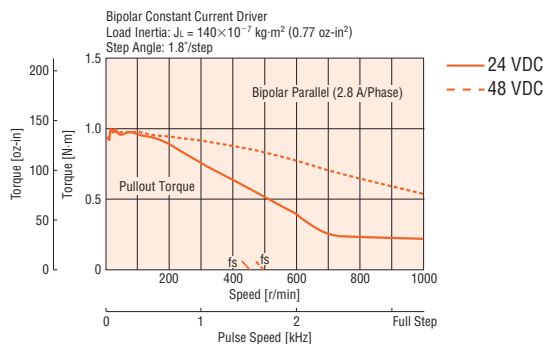
PK266-03AR11

PK266-03AR12 Bipolar (Series)



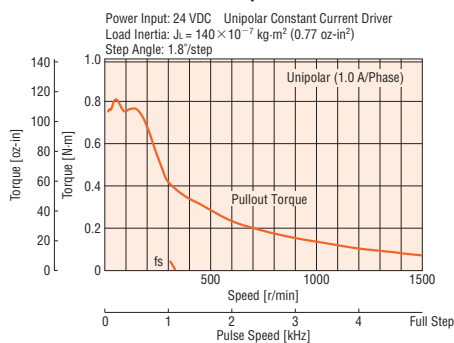
PK266-E2.0AR11

PK266-E2.0AR12 Bipolar (Parallel)



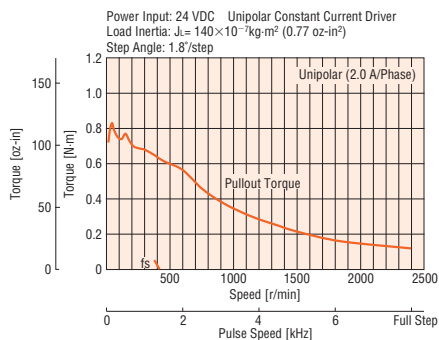
PK266-01AR11

PK266-01AR12 Unipolar



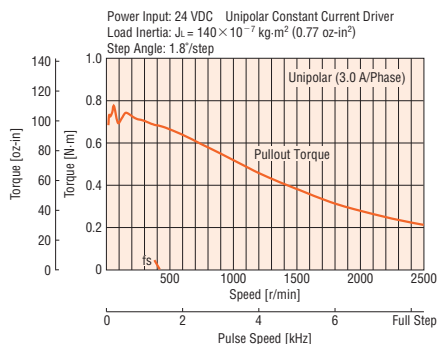
PK266-02AR11

PK266-02AR12 Unipolar



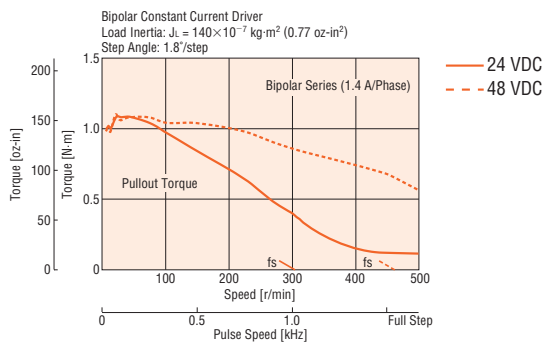
PK266-03AR11

PK266-03AR12 Unipolar



PK266-E2.0AR11

PK266-E2.0AR12 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 (212°F).

The image displays two perspectives of a Bosch Rexroth motor. On the left is a side view showing the motor's profile, including a cooling fan on the rear and a label with technical specifications. On the right is a front view showing the circular motor frame with mounting feet and a central shaft.

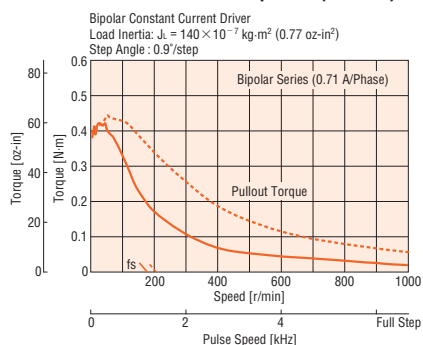
Features C-208 / System Configuration C-207

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-12

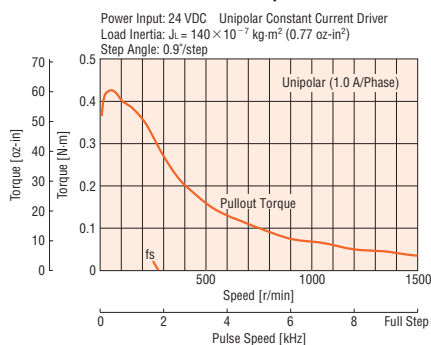
PK264M-01AR11

PK264M-01AR12 Bipolar (Series)



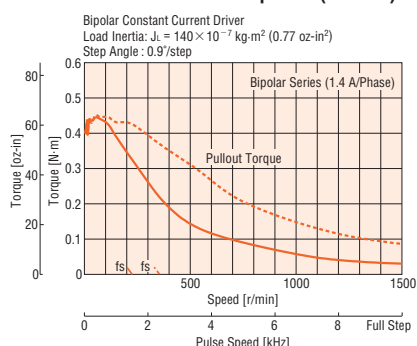
PK264M-01AR11

PK264M-01AR12 Unipolar



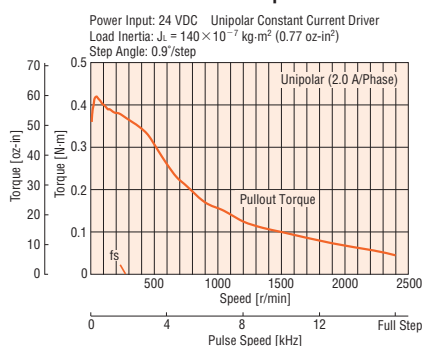
PK264M-02AR11

PK264M-02AR12 Bipolar (Series)



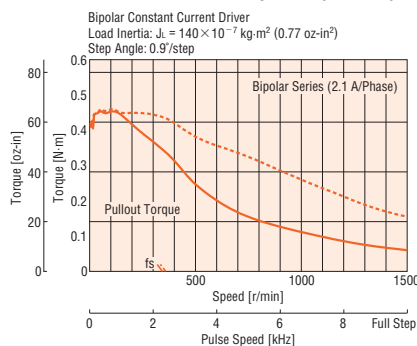
PK264M-02AR11

PK264M-02AR12 Unipolar



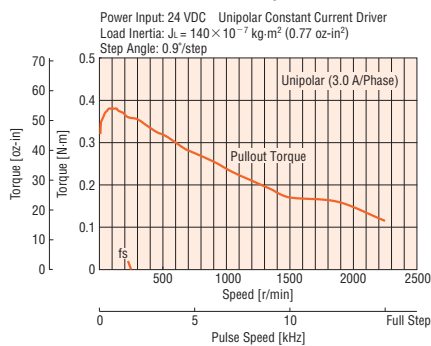
PK264M-03AR11

PK264M-03AR12 Bipolar (Series)



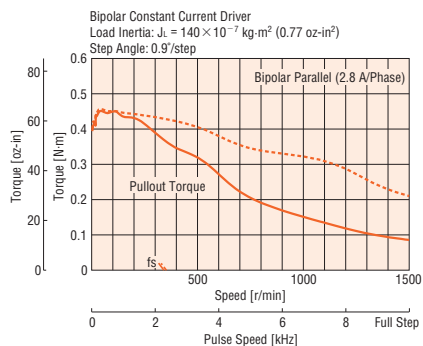
PK264M-03AR11

PK264M-03AR12 Unipolar



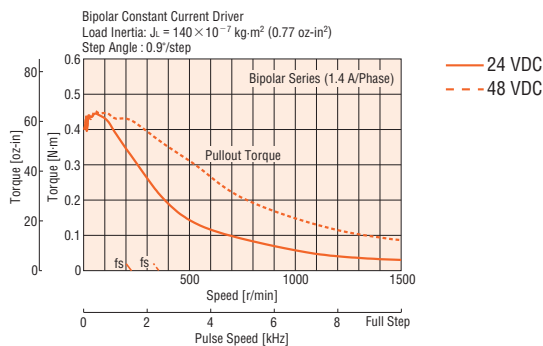
PK264M-E2.0AR11

PK264M-E2.0AR12 Bipolar (Parallel)



PK264M-E2.0AR11

PK264M-E2.0AR12 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 (212°F).

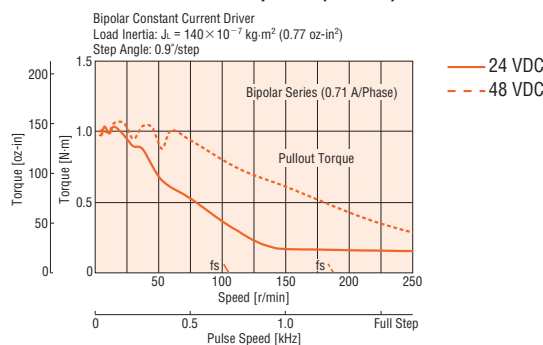
□ 28 mm
(1.10 in.)□ 35 mm
(1.38 in.)□ 42 mm
(1.65 in.)□ 50 mm
(1.97 in.)□ 56.4 mm
(2.22 in.)□ 60 mm
(2.36 in.)□ 85 mm
(3.35 in.)□ 90 mm
(3.54 in.)

Speed – Torque Characteristics

How to read speed – torque characteristics → Page C-12

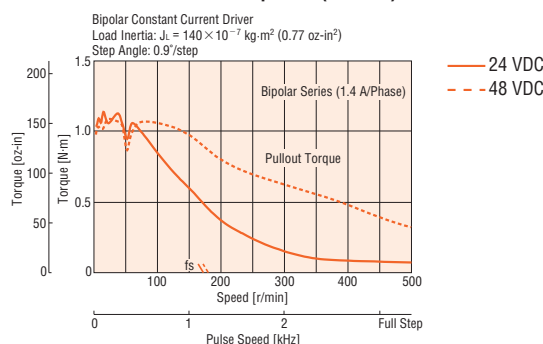
PK266M-01AR11

PK266M-01AR12 Bipolar (Series)



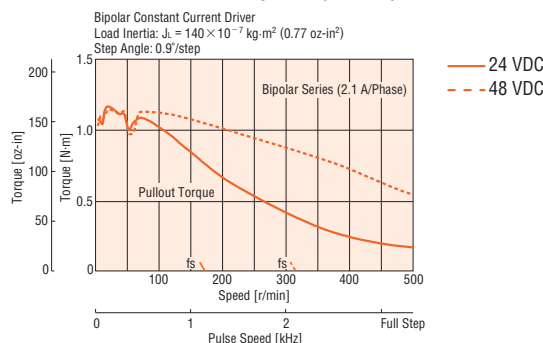
PK266M-02AR11

PK266M-02AR12 Bipolar (Series)



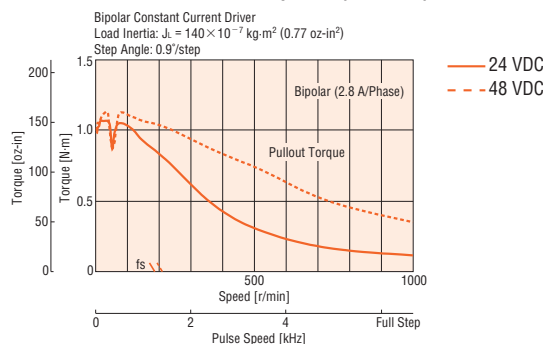
PK266M-03AR11

PK266M-03AR12 Bipolar (Series)



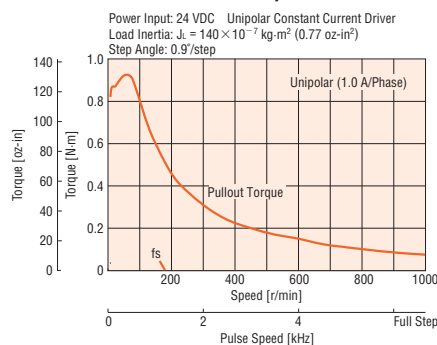
PK266M-E2.0AR11

PK266M-E2.0AR12 Bipolar (Parallel)



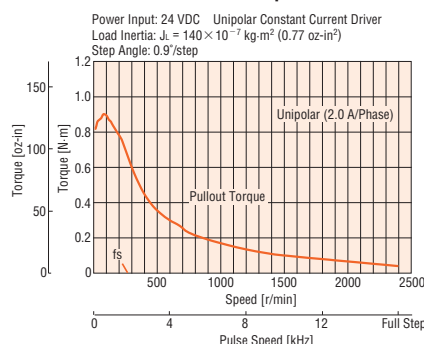
PK266M-01AR11

PK266M-01AR12 Unipolar



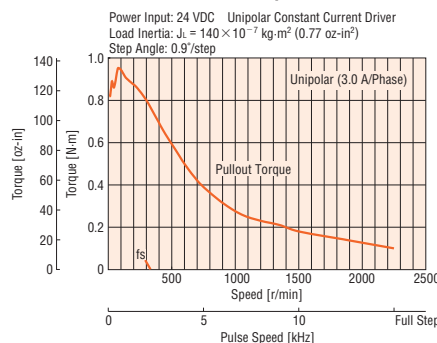
PK266M-02AR11

PK266M-02AR12 Unipolar



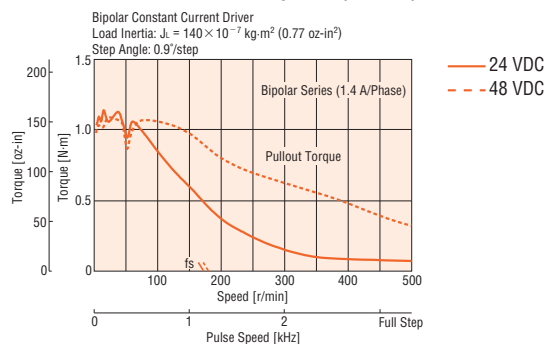
PK266M-03AR11

PK266M-03AR12 Unipolar



PK266M-E2.0AR11

PK266M-E2.0AR12 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 (212°F).

Encoder Specifications

Note:

- Use the motor within the encoder specifications.
HEDS-5600 series encoders by Agilent Technologies, Inc. are used.

Recommended Operating Ranges

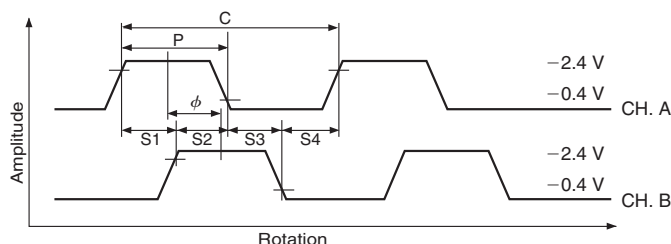
Item	Symbol	Min	TYP.	MAX.	Note
Supplied Voltage	V _{CC}	4.5 V	5.0 V	5.5 V	Ripple < 100 mVp-p
Load Capacity	C _I	—	—	100 pF	2.7 kΩ, pull-up
Response Frequency	f	—	—	100 kHz	Rotating speed (r/min) × (N/60)

N = Encoder Resolution

Note:

- The encoder specifications are designed to guarantee operation based on a response frequency of 100 kHz. However, the encoder can be operated at a minimum response frequency of 100 kHz.

Output Waveform



Encoder Characteristics

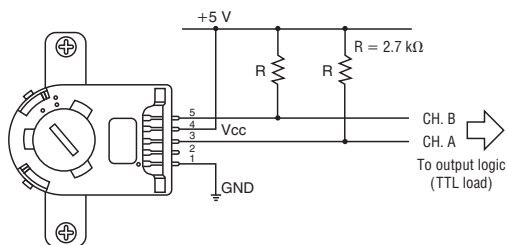
Unless otherwise specified, the following characteristics assume that the encoder is installed within the allowable ranges of error and operated under the recommended operating conditions. Each characteristic value indicates the worst value within one rotation of the code wheel.

Item	Symbol	TYP.*	Max.
Pulse-width error	ΔP	7°e	45°e
Logic-width error	ΔS	5°e	45°e
Phase error	Δφ	2°e	20°e
Position error	Δθ	10 arc min.	40 arc min.
Cycle error	ΔC	3°e	5.5°e

*TYP values are based on V_{CC} = 5.0 V and T_A = 25°C (77°F).

Encoder Electrical Interface

We recommend that the CH.A and CH.B outputs be pulled up with a resistor of 2.7 kΩ (±10%) in order to shorten the rise time of the output pulse. Install the pull-up resistor near the encoder [within 1 m (6.6 ft.)].



Pull-Up of Encoder Output

Applicable Connectors

Manufacturer	Model Numbers
AMP®	103975-4
	640442-5
DUPONT®	65039-032 (housing)
	4825X-000 (contact)
Agilent Technologies®	HEDS-8902 (for 2 channels: 4 lead wires)
MOLEX®	2695 series (housing)
	2759 series (contact)

General Specifications

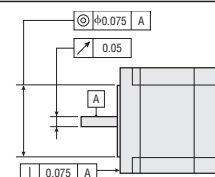
Item		Motor
Insulation Class		Class B [130°C (266°F)] [Standard type terminal box: Recognized as Class A 105°C (221°F) by UL/CSA Standards]
Insulation Resistance		100MΩ or more when 500 VDC megger is applied between the windings and the case under normal ambient temperature and humidity.
Dielectric Strength		Sufficient to withstand 1.0 kVAC at 60 Hz applied between the windings and the case for 1 minute, under normal ambient temperature and humidity.
Operating Environment	Ambient Temperature	-10~+50°C (+14~+122°F) (non-freezing)
	Ambient Humidity	85% or less (non-condensing)
	Atmosphere	No corrosive gasses, dust, water or oil (Standard type terminal box: no corrosive gasses)
Temperature Rise		Temperature rise of windings is 80°C (144°F) or less measured by the resistance change method. (at rated voltage, at standstill, two phases excited)
Stop Position Accuracy*1		PK Series: ±3 arc minutes (±0.05°) PV Series: ±2 arc minutes (±0.034°)
Shaft Runout		0.05 mm (0.002 in.) T.I.R.*4
Radial Play*2		0.025 mm (0.001 in.) maximum of 5 N (1.12 lb.)
Axial Play*3		0.075 mm (0.003 in.) maximum of 10 N (2.2 lb.)
Concentricity		0.075 mm (0.003 in.) T.I.R.*4
Perpendicularity		0.075 mm (0.003 in.) T.I.R.*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 (1.12 lb.) 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 (2.2 lb.) 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.



Permissible Overhung Load and Permissible Thrust Load

Unit = N (lb.)

Type	Model	Permissible Overhung Load					Permissible Thrust Load
		Distance from Shaft End					
		0 mm (0 in.)	5 mm (0.2 in.)	10 mm (0.39 in.)	15 mm (0.59 in.)	20 mm (0.79 in.)	
PK Series High-Torque Type	PK223P						The permissible thrust load shall be no greater than the motor mass.
	PK224P	25 (5.6)	34 (7.6)	52 (11.7)	—	—	
	PK225P						
	PK233P, PK235P	20 (4.5)	25 (5.6)	34 (7.6)	52 (11.7)	—	
	PK244P, PK246P	20 (4.5)	25 (5.6)	34 (7.6)	52 (11.7)	—	
PK Series Standard Type (with/without Encoder)	PK243						
	PK244	20 (4.5)	25 (5.6)	34 (7.6)	52 (11.7)	—	
	PK245						
	PK256	54 (12.1)	67 (15)	89 (20)	130 (29)	—	
	PK258						
	PK264	54 (12.1)	67 (15)	89 (20)	130 (29)	—	
	PK266						
	PK268						
	PK296	260 (58)	290 (65)	340 (76)	390 (87)	480 (108)	
Terminal Box Type	PK299						
	PK2913						
PV Series	PV264, PV266 PV267, PV269	50 (11.2)	60 (13.5)	75 (16.8)	100 (22)	150 (33)	
PK Series High-Resolution Type (with/without Encoder)	PK243M	20 (4.5)	25 (5.6)	34 (7.6)	52 (11.7)	—	
	PK244M						
	PK245M						
	PK264M	54 (12.1)	67 (15)	89 (20)	130 (29)	—	
	PK266M						
PK Series SH Geared Type	PK268M						
	PK223-SG□	15 (3.3)	17 (3.8)	20 (4.5)	23 (5.1)	—	10 (2.2)
	PK243-SG□	10 (2.2)	15 (3.3)	20 (4.5)	30 (6.7)	—	15 (3.3)
	PK264-SG3.6						30 (6.7)
	PK264-SG7.2						
	PK264-SG9	30 (6.7)	40 (9)	50 (11.2)	60 (13.5)	70 (15.7)	
	PK264-SG10						
	PK264-SG18						
	PK264-SG36	80 (18)	100 (22)	120 (27)	140 (31)	160 (36)	
	PK296-SG□	220 (49)	250 (56)	300 (67)	350 (78)	400 (90)	100 (22)

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