

# KH42-B900 Series (1.8 degree/step)

## Model Code

# KH 42 34 – B901 0 1

①      ②      ③                      ④      ⑤      ⑥

①	Series	KH (Hybrid Type 2 Phase Stepping Motor)				
②	Motor Size	□42				
③	Motor Length	34 mm	38 mm	42 mm	48 mm	54 mm
④	Winding Method	Unipolar: B901, B902			Bipolar: B951	
⑤	Shaft Specification	0: Single Shaft			1: Double Shaft	
⑥	Shaft Length	1: 20 mm		2: 24 mm		3: 16 mm



Rare earth magnet models	
KH4234-B90101	⇒
KH4238-B90101	⇒
KH4238-B90201	⇒
KH4242-B90101	⇒
KH4242-B90201	⇒
KH4248-B90101	⇒
KH4254-B90101	⇒
KH4234-B95101	⇒
KH4238-B95101	⇒
KH4242-B95101	⇒
KH4248-B95101	⇒
KH4254-B95101	⇒

Non-rare earth magnet models	
<del>KH4234-B9060+</del>	⇒
<del>KH4238-B9060+</del>	⇒
<del>KH4238-B9070+</del>	⇒
<del>KH4242-B9060+</del>	⇒
<del>KH4242-B9070+</del>	⇒
<del>KH4248-B9060+</del>	⇒
<del>KH4254-B9060+</del>	⇒
<del>KH4234-B9560+</del>	⇒
<del>KH4238-B9560+</del>	⇒
<del>KH4242-B9560+</del>	⇒
<del>KH4248-B9560+</del>	⇒
<del>KH4254-B9560+</del>	⇒

## Standard Specifications

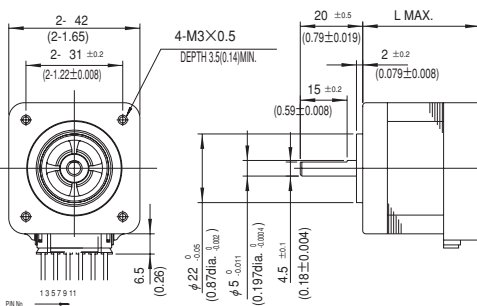
### Unipolar

Model	Voltage	Current	Resistance	Inductance	Holding Torque		Detent Torque		Rotor Inertia	
	V/φ	A/φ	Ω/φ	mH/φ	mN·m	OZ·in	mN·m	OZ·in	g·cm <sup>2</sup>	OZ·in <sup>2</sup>
KH4234-B90101	2.97	1.1	2.7	2.1	190	27	12	1.7	38	0.2
KH4238-B90101	3.08	1.4	2.2	1.9	260	37	16	2.3	48	0.3
KH4238-B90201	3.60	1.2	3.0	2.8	260	37	16	2.3	48	0.3
KH4242-B90101	3.25	1.3	2.5	2.6	300	42	18	2.5	59	0.3
KH4242-B90201	3.74	1.1	3.4	4.0	300	42	18	2.5	59	0.3
KH4248-B90101	3.60	1.2	3.0	2.6	350	50	24	3.4	78	0.4
KH4254-B90101	4.20	1.2	3.5	4.1	460	65	30	4.2	98	0.5

### Bipolar

Model	Voltage	Current	Resistance	Inductance	Holding Torque		Detent Torque		Rotor Inertia	
	V/φ	A/φ	Ω/φ	mH/φ	mN·m	OZ·in	mN·m	OZ·in	g·cm <sup>2</sup>	OZ·in <sup>2</sup>
KH4234-B95101	3.41	1.1	3.1	4.4	250	35	12	1.7	38	0.2
KH4238-B95101	3.24	1.2	2.7	4.9	340	48	16	2.3	48	0.3
KH4242-B95101	3.41	1.1	3.1	6.9	380	54	18	2.5	59	0.3
KH4248-B95101	3.00	1.5	2.0	3.6	480	68	24	3.4	78	0.4
KH4254-B95101	3.22	1.4	2.3	5.0	570	81	30	4.2	98	0.5

## Dimensions Unit: mm (inch)



Model	L (mm)	L (inch)
KH4234	34	1.34
KH4238	38	1.50
KH4242	42	1.65
KH4248	48	1.89
KH4254	54	2.13

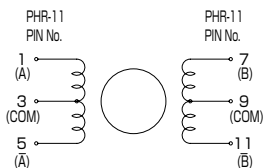
Note  
 Conformable Housing: PHR-11 (JST)  
 Conformable Contact: SPH-002T-P0.5S (JST)  
 The standard B900 motor is supplied without a leadwire assembly.  
 This must be ordered as a separate part.

## Specification

Temperature Rise	70K max. (By resistance method)
Insulation Resistance	100 M Ω min. At 500 V DC (at normal temp. & humidity, between lead and case)
Dielectric Strength	500 V AC 50 Hz for 1 minute (at normal temp. & humidity, between lead and case)
Ambient Temp. Range	-10°C ~ +50°C
Storage Temp. Range	-20°C ~ +70°C
Humidity Range in Operation and Storage	5% ~ 95% RH (noncondensing)

## Connection Diagrams

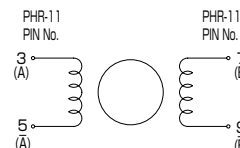
### Unipolar



CW viewed from rotor shaft when using the following sequence diagram.

PHR-11 Pin No.	PHASE	1	2	3	4
1	A	-			
7	B		-		
5	A			-	
11	B				-
3	A com	+	+	+	+
9	B com	+	+	+	+

### Bipolar



CW viewed from rotor shaft when using the following sequence diagram.

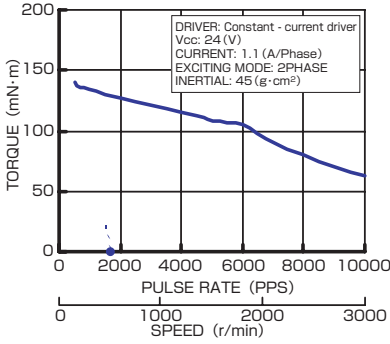
PHR-11 Pin No.	PHASE	1	2	3	4
3	A	-	+	+	-
7	B	-	-	+	+
5	A	+	-	-	+
9	B	+	+	-	-

**\* For red-lines product, Discontinued.**

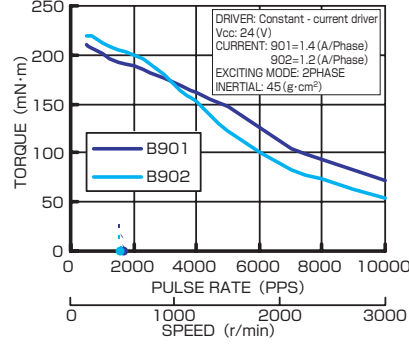
# Speed-Torque Characteristics

## Unipolar

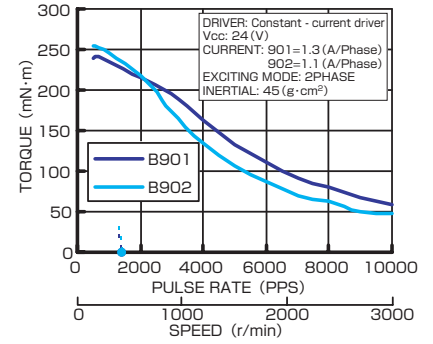
**KH4234-B901** □□



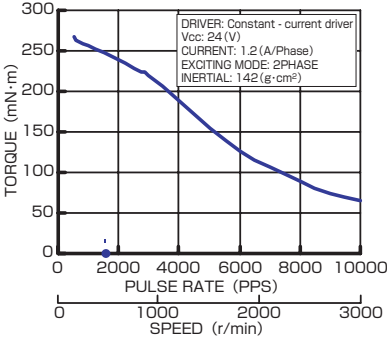
**KH4238-B901** □□/ **B902** □□



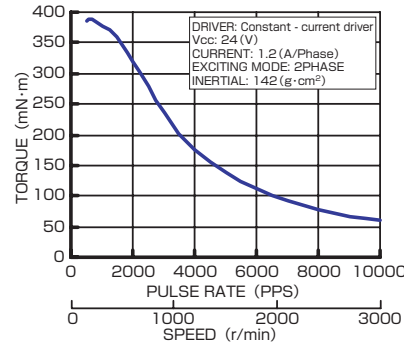
**KH4242-B901** □□/ **B902** □□



**KH4248-B901** □□

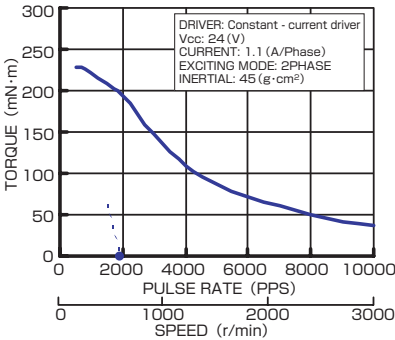


**KH4254-B901** □□

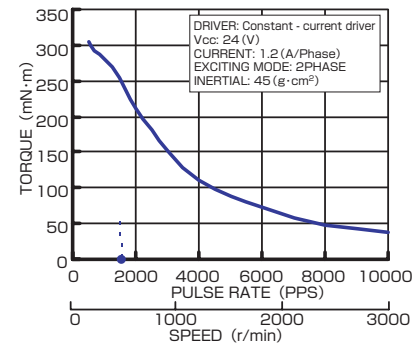


## Bipolar

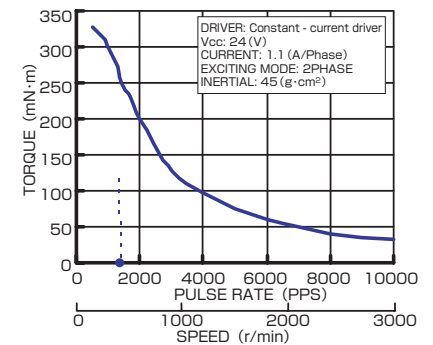
**KH4234-B951** □□



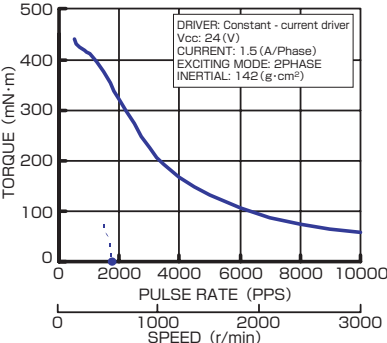
**KH4238-B951** □□



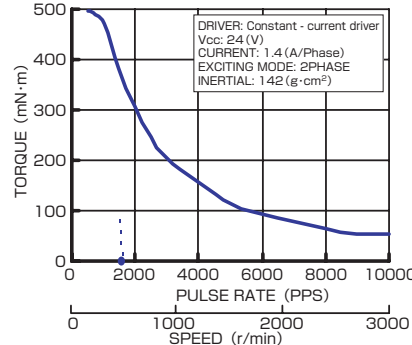
**KH4242-B951** □□



**KH4248-B951** □□



**KH4254-B951** □□



# Semi Standard Models

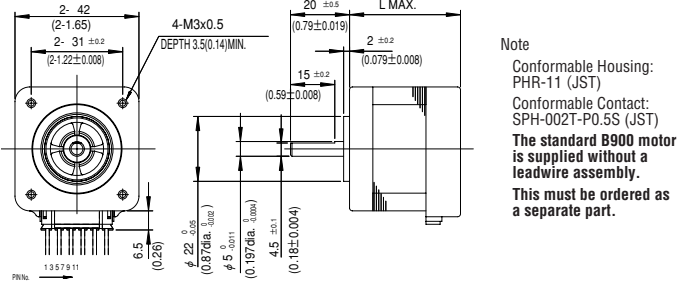
## Unipolar

Model	Motor Length L1		Shaft Length L2		Shaft Specification		
	mm	inch	mm	inch			
KH4234-B90102	34	1.34	24	0.95	Single shaft		
KH4234-B90103			16	0.63	Single shaft		
KH4234-B90111			20	0.79	Double shaft		
KH4234-B90112			24	0.95	Double shaft		
KH4234-B90113			16	0.63	Double shaft		
KH4238-B90102			38	1.50	24	0.95	Single shaft
KH4238-B90103	16	0.63			Single shaft		
KH4238-B90111	20	0.79			Double shaft		
KH4238-B90112	24	0.95			Double shaft		
KH4238-B90113	16	0.63			Double shaft		
KH4238-B90202	24	0.95			Single shaft		
KH4238-B90203	16	0.63			Single shaft		
KH4238-B90211	20	0.79			Double shaft		
KH4238-B90212	24	0.95			Double shaft		
KH4238-B90213	16	0.63			Double shaft		
KH4242-B90102	42	1.65			24	0.95	Single shaft
KH4242-B90103					16	0.63	Single shaft
KH4242-B90111			20	0.79	Double shaft		
KH4242-B90112			24	0.95	Double shaft		
KH4242-B90113			16	0.63	Double shaft		
KH4242-B90202			24	0.95	Single shaft		
KH4242-B90203			16	0.63	Single shaft		
KH4242-B90211			20	0.79	Double shaft		
KH4242-B90212			24	0.95	Double shaft		
KH4242-B90213			16	0.63	Double shaft		
KH4248-B90102			48	1.89	24	0.95	Single shaft
KH4248-B90103					16	0.63	Single shaft
KH4248-B90111					20	0.79	Double shaft
KH4248-B90112					24	0.95	Double shaft
KH4248-B90113					16	0.63	Double shaft
KH4254-B90102					54	2.13	24
KH4254-B90103			16	0.63			Single shaft
KH4254-B90111			20	0.79			Double shaft
KH4254-B90112	24	0.95	Double shaft				
KH4254-B90113	16	0.63	Double shaft				

## Bipolar

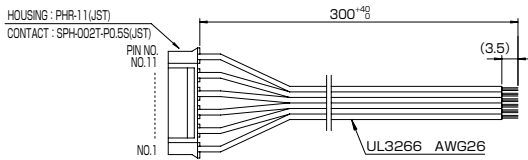
Model	Motor Length L1		Shaft Length L2		Shaft Specification
	mm	inch	mm	inch	
KH4234-B95102	34	1.34	24	0.95	Single shaft
KH4234-B95103			16	0.63	Single shaft
KH4234-B95111			20	0.79	Double shaft
KH4234-B95112			24	0.95	Double shaft
KH4234-B95113			16	0.63	Double shaft
KH4238-B95102			38	1.50	24
KH4238-B95103	16	0.63			Single shaft
KH4238-B95111	20	0.79			Double shaft
KH4238-B95112	24	0.95			Double shaft
KH4238-B95113	16	0.63			Double shaft
KH4242-B95102	42	1.65			24
KH4242-B95103			16	0.63	Single shaft
KH4242-B95111			20	0.79	Double shaft
KH4242-B95112			24	0.95	Double shaft
KH4242-B95113			16	0.63	Double shaft
KH4248-B95102			48	1.89	24
KH4248-B95103	16	0.63			Single shaft
KH4248-B95111	20	0.79			Double shaft
KH4248-B95112	24	0.95			Double shaft
KH4248-B95113	16	0.63			Double shaft
KH4254-B95102	54	2.13			24
KH4254-B95103			16	0.63	Single shaft
KH4254-B95111			20	0.79	Double shaft
KH4254-B95112			24	0.95	Double shaft
KH4254-B95113			16	0.63	Double shaft

[Semi Standard Model Dimensions Unit: mm (inch)]



## Option

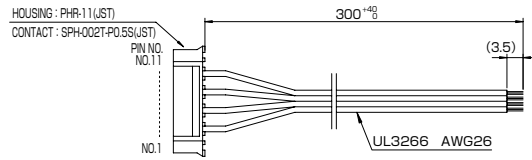
### Leadwire Assembly KH42LUS300 (Unipolar)



PHR-11 (Pin No.)	1	3	5	7	9	11
Excitation (PHASE)	A	A com	A	B	B com	B
Cable Color	Black	Red	Brown	Yellow	Blue	Orange

Note  
 The standard B900 motor is supplied without a leadwire assembly.  
 This must be ordered as a separate part.

### KH42LBS300 (Bipolar)

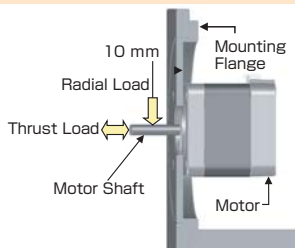


PHR-11 (Pin No.)	3	5	7	9
Excitation (PHASE)	A	A	B	B
Cable Color	Red	Blue	Yellow	White

## Max. Allowable Load/Runout For Motor Shaft

### Load For Motor Shaft

Type	Thrust Load	Radial Load
		Load
KA50	14.7 N (1.5 kgf) (3.3 lb)	19.6 N (2.0 kgf) (4.4 lb)



### Shaft Runout

Shaft Runout	0.05 T.I.R. (mm) ※
Concentricity Between Shaft and Mounting Circle	0.075 T.I.R. (mm) ※
Perpendicularity Between Shaft and Mounting Face	0.075 T.I.R. (mm) ※

※ T.I.R. (Total Indicator Reading)

