

NEMA 34

1.8°

Round

Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Ambient Temperature	-10 °C ~ +50 °C
Insulation Resistance	100 MΩ Min., 500VDC
Dielectric Strength	1500VAC for one minute
Shaft Radial Play	0.02 Max. (450 g-load)
Shaft Axial Play	0.08 Max. (450 g-load)



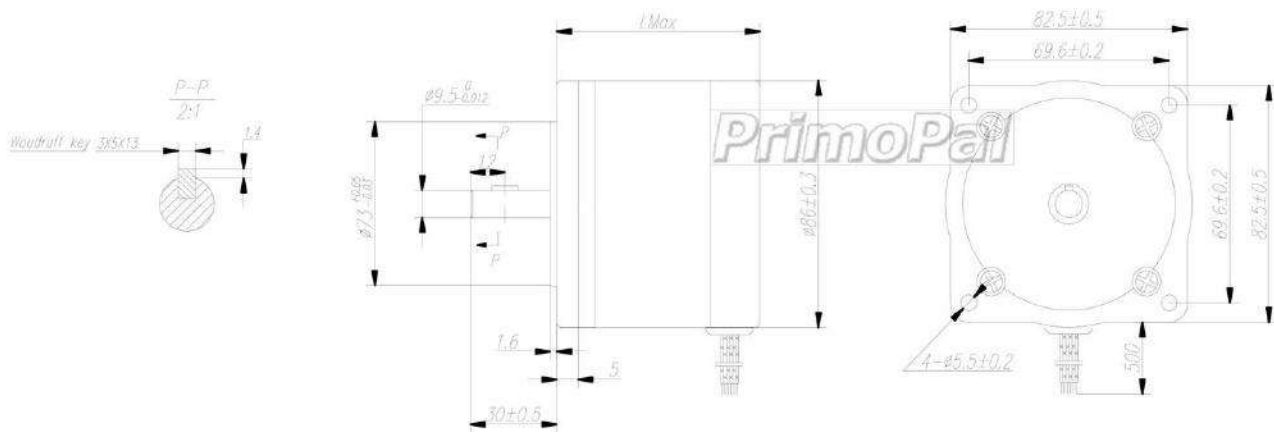
Specifications

Model	Current	Resistance	Inductance	Holding Torque	Bi/Unipolar	Detent Torque	Rotor Inertia	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	# of Leads	N.cm	Kg.cm ²	kg	mm
PHB86K63-801	3.0	0.95	7.2	250	Bi-P (8)	4.5	0.64	1.6	63
	1.5	3.8	28.8	250	Bi-S (8)				
	2.1	1.9	7.2	180	Uni (8)				
PHB86K63-802	3.8	0.6	4.5	250	Bi-P (8)	4.5	0.64	1.6	63
	1.9	2.4	18.0	250	Bi-S (8)				
	2.7	1.2	4.5	180	Uni (8)				
PHB86K63-803	5.6	0.34	2.0	250	Bi-P (8)	4.5	0.64	1.6	63
	2.8	1.36	8.0	250	Bi-S (8)				
	4.0	0.68	2.0	180	Uni (8)				
PHB86K63-804	7.0	0.23	1.5	250	Bi-P (8)	4.5	0.64	1.6	63
	3.5	0.9	6.0	250	Bi-S (8)				
	5.0	0.45	1.5	180	Uni (8)				
PHB86K92-801	3.0	1.4	15	450	Bi-P (8)	6.5	1.30	2.6	92
	1.5	5.4	60	450	Bi-S (8)				
	2.1	2.7	15	320	Uni (8)				
PHB86K92-802	3.8	0.85	9.0	450	Bi-P (8)	6.5	1.30	2.6	92
	1.9	3.4	36.0	450	Bi-S (8)				
	2.7	1.7	9.0	320	Uni (8)				
PHB86K92-803	5.6	0.45	3.8	450	Bi-P (8)	6.5	1.30	2.6	92
	2.8	1.8	15.2	450	Bi-S (8)				
	4.0	0.9	3.8	320	Uni (8)				
PHB86K92-804	7.0	0.3	2.8	450	Bi-P (8)	6.5	1.30	2.6	92
	3.5	1.2	11.2	450	Bi-S (8)				
	5.0	0.6	2.8	320	Uni (8)				

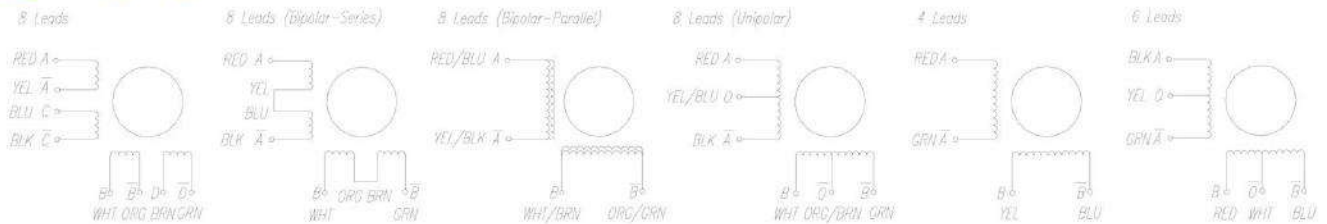
Specifications (Continued)

Model	Current	Resistance	Inductance	Holding Torque	Bi/Unipolar	Detent Torque	Rotor Inertia	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	# of Leads	N.cm	kg.cm ²	kg	mm
PHB86K122-802	3.8	1.25	12.5	630	Bi-P (8)	10.5	1.90	3.8	122
	1.9	5.0	50	630	Bi-S (8)				
	2.7	2.5	12.5	450	Uni (8)				
PHB86K122-803	5.6	0.55	5.6	630	Bi-P (8)	10.5	1.90	3.8	122
	2.8	2.2	22.4	630	Bi-S (8)				
	4.0	1.1	5.6	450	Uni (8)				
PHB86K122-804	7.0	0.4	3.6	630	Bi-P (8)	10.5	1.90	3.8	122
	3.5	1.6	14.4	630	Bi-S (8)				
	5.0	0.8	3.6	450	Uni (8)				

Mechanical Dimension



Wiring Diagram



NEMA 34

1.8°



Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Ambient Temperature	-10 °C ~ +50 °C
Insulation Resistance	100 MΩ Min., 500VDC
Dielectric Strength	820VAC, 1s, 3mA
Shaft Radial Play	0.02 Max. (450 g-load)
Shaft Axial Play	0.08 Max. (450 g-load)

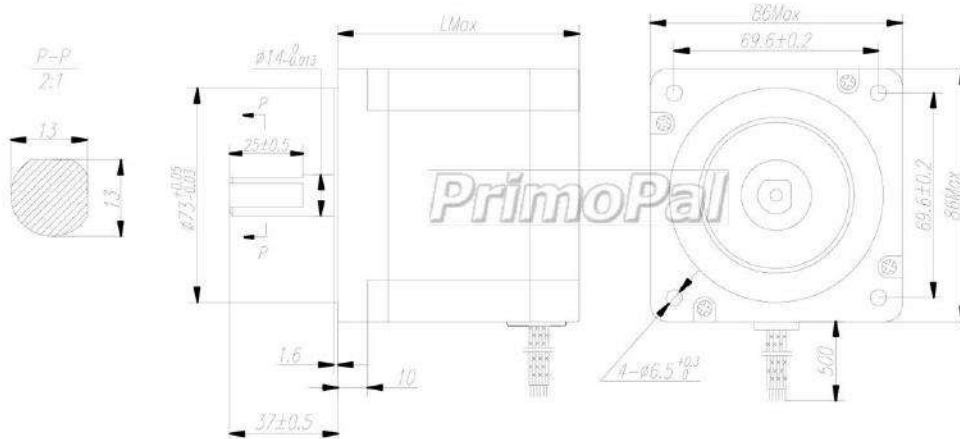
Specifications

Model	Current	Resistance	Inductance	Holding Torque	Bi/Unipolar	Detent Torque	Rotor Inertia	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	# of Leads	N.cm	kg.cm ²	kg	mm
PHB86S66-801	3.8	0.6	3.5	310	Bi-P (8)	5.5	0.85	2.0	66
	1.9	2.4	14.0	310	Bi-S (8)				
	2.7	1.2	3.5	220	Uni (8)				
PHB86S66-802	5.6	0.3	1.6	310	Bi-P (8)	5.5	0.85	2.0	66
	2.8	1.2	6.4	310	Bi-S (8)				
	4.0	0.6	1.6	220	Uni (8)				
PHB86S66-803	7.0	0.2	1.0	310	Bi-P (8)	5.5	0.85	2.0	66
	3.5	0.8	4.0	310	Bi-S (8)				
	5.0	0.4	1.0	220	Uni (8)				
PHB86S78-801	3.8	0.8	5.6	420	Bi-P (8)	6.5	1.05	2.5	78
	1.9	3.2	22.4	420	Bi-S (8)				
	2.7	1.6	5.6	300	Uni (8)				
PHB86S78-802	5.6	0.35	3.0	420	Bi-P (8)	6.5	1.05	2.5	78
	2.8	1.4	12.0	420	Bi-S (8)				
	4.0	0.7	3.0	300	Uni (8)				
PHB86S78-803	7.0	0.25	1.8	420	Bi-P (8)	6.5	1.05	2.5	78
	3.5	1.0	7.2	420	Bi-S (8)				
	5.0	0.5	1.8	300	Uni (8)				
PHB86S98-801	3.8	0.95	8.6	650	Bi-P (8)	9.5	1.55	3.0	98
	1.9	3.8	34.4	650	Bi-S (8)				
	2.7	1.9	8.6	490	Uni (8)				
PHB86S98-802	5.6	0.5	4.1	650	Bi-P (8)	9.5	1.55	3.0	98
	2.8	2.0	12.4	650	Bi-S (8)				
	4.0	1.0	4.1	490	Uni (8)				
PHB86S98-803	7.0	0.32	2.4	650	Bi-P (8)	9.5	1.55	3.0	98
	3.5	1.3	9.6	650	Bi-S (8)				
	5.0	0.65	2.4	490	Uni (8)				

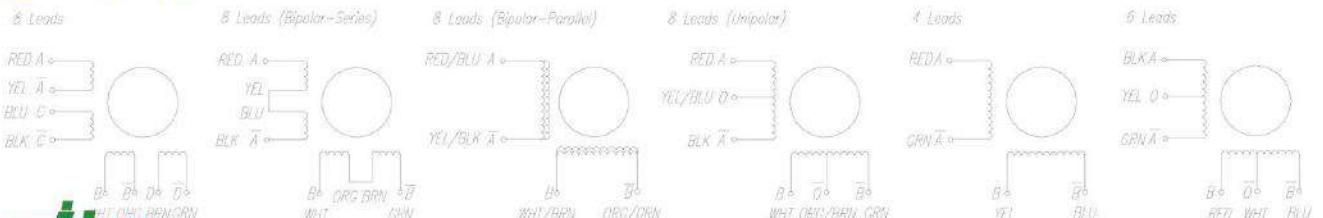
Specifications (Continued)

Model	Current	Resistance	Inductance	Holding Torque	Bi/Unipolar	Detent Torque	Rotor Inertia	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	# of Leads	N.cm	kg.cm ²	kg	mm
PHB86S114-801	3.8	1.0	11.5	820	Bi-P (8)	12.5	1.80	4.0	114
	1.9	4.0	46	820	Bi-S (8)				
	2.7	2.0	11.5	580	Uni (8)				
PHB86S114-802	5.6	0.55	5.5	820	Bi-P (8)	12.5	1.80	4.0	114
	2.8	2.2	22.0	820	Bi-S (8)				
	4.0	1.1	5.5	580	Uni (8)				
PHB86S114-803	7.0	0.4	3.2	820	Bi-P (8)	12.5	1.80	4.0	114
	3.5	1.5	12.8	820	Bi-S (8)				
	5.0	0.75	3.2	580	Uni (8)				
PHB86S126-801	3.8	1.25	12.5	900	Bi-P (8)	18.5	2.20	4.5	126
	1.9	5.0	50	900	Bi-S (8)				
	2.7	2.5	12.5	640	Uni (8)				
PHB86S126-802	5.6	0.65	5.8	900	Bi-P (8)	18.5	2.20	4.5	126
	2.8	2.6	23.2	900	Bi-S (8)				
	4.0	1.3	5.8	640	Uni (8)				
PHB86S126-803	7.0	0.43	3.4	900	Bi-P (8)	18.5	2.20	4.5	126
	3.5	1.7	13.6	900	Bi-S (8)				
	5.0	0.85	3.4	640	Uni (8)				
PHB86S150-801	3.8	1.5	17.5	1200	Bi-P (8)	24.5	2.50	5.0	150
	1.9	5.8	70	1200	Bi-S (8)				
	2.7	2.9	17.5	850	Uni (8)				
PHB86S150-802	5.6	0.7	9.2	1200	Bi-P (8)	24.5	2.50	5.0	150
	2.8	2.8	36.8	1200	Bi-S (8)				
	4.0	1.4	9.2	850	Uni (8)				
PHB86S150-803	7.0	0.45	5.2	1200	Bi-P (8)	24.5	2.50	5.0	150
	3.5	1.8	20.8	1200	Bi-S (8)				
	5.0	0.9	5.2	850	Uni (8)				

Mechanical Dimension



Wiring Diagram



NEMA 34

0.9°

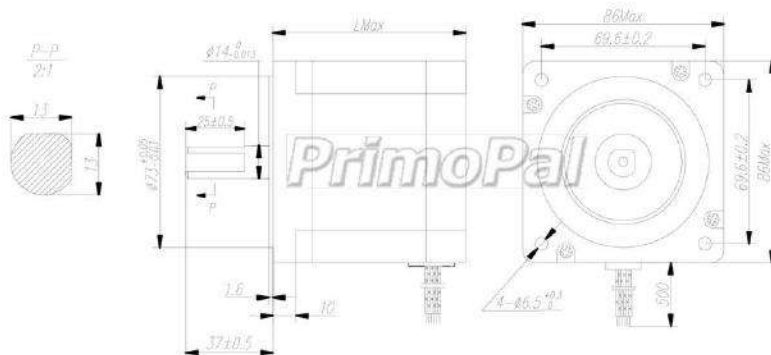
Step Angle	0.9°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80 °C Max.(rated current, 2 phase on)
Ambient Temperature	-10 °C ~ +50 °C
Insulation Resistance	100 MΩ Min., 500VDC
Dielectric Strength	820VAC, 1s, 3mA
Shaft Radial Play	0.02 Max. (450 g-load)
Shaft Axial Play	0.08 Max. (450 g-load)



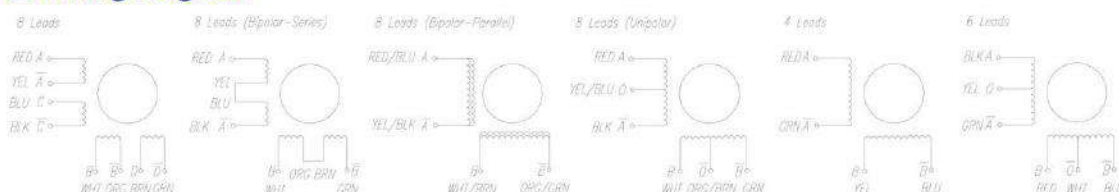
Specifications

Model	Current	Resistance	Inductance	Holding Torque	Detent Torque	Rotor Inertia	Bi/Unipolar	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	N.cm	kg.cm ²	# of Leads	kg	mm
PHB86M66-801	2.7	1.2	3.5	200	5.0	0.85	Uni (8)	2.0	66
PHB86M66-802	4.0	0.6	1.6	200	5.0	0.85	Uni (8)	2.0	66
PHB86M66-803	5.0	0.4	1.0	200	5.0	0.85	Uni (8)	2.0	66
PHB86M78-801	2.7	1.6	5.6	270	5.8	1.05	Uni (8)	2.5	78
PHB86M78-802	4.0	0.7	3.0	270	5.8	1.05	Uni (8)	2.5	78
PHB86M78-803	5.0	0.5	1.8	270	5.8	1.05	Uni (8)	2.5	78
PHB86M98-801	2.7	1.9	8.6	450	8.5	1.55	Uni (8)	3.0	98
PHB86M98-802	4.0	1.0	4.1	450	8.5	1.55	Uni (8)	3.0	98
PHB86M98-803	5.0	0.65	2.4	450	8.5	1.55	Uni (8)	3.0	98
PHB86M114-801	2.7	2.0	11.5	520	11.0	1.80	Uni (8)	4.0	114
PHB86M114-802	4.0	1.1	5.5	520	11.0	1.80	Uni (8)	4.0	114
PHB86M114-803	5.0	0.75	3.2	520	11.0	1.80	Uni (8)	4.0	114
PHB86M126-801	2.7	2.5	12.5	580	16.5	2.20	Uni (8)	4.5	126
PHB86M126-802	4.0	1.3	5.8	580	16.5	2.20	Uni (8)	4.5	126
PHB86M126-803	5.0	0.85	3.4	580	16.5	2.20	Uni (8)	4.5	126
PHB86M150-801	2.7	2.9	17.5	780	20.5	2.50	Uni (8)	5.0	150
PHB86M150-802	4.0	1.4	9.2	780	20.5	2.50	Uni (8)	5.0	150
PHB86M150-803	5.0	0.9	5.2	780	20.5	2.50	Uni (8)	5.0	150

Mechanical Dimension



Wiring Diagram



NEMA 34

1.2°

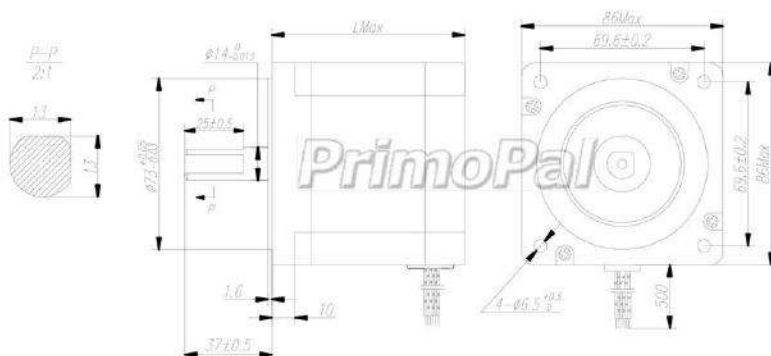
Step Angle	1.2°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80 °C Max.(rated current)
Ambient Temperature	-10 °C ~ +50 °C
Insulation Resistance	100 MΩ Min., 500VDC
Dielectric Strength	820VAC, 1s, 3mA
Shaft Radial Play	0.02 Max. (450 g-load)
Shaft Axial Play	0.08 Max. (450 g-load)



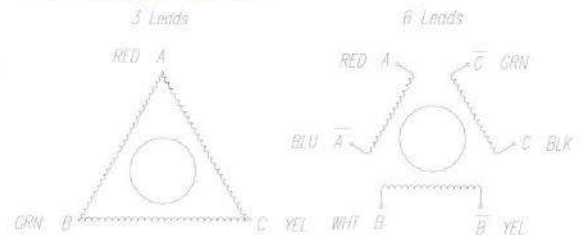
Specifications

Model	Current	Resistance	Inductance	Holding Torque	Detent Torque	Rotor Inertia	# of Leads	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	N.cm	kg.cm ²	Pin	kg	mm
PHB86T66-335	3.5	1.2	2.5	210	3.5	0.85	3	2.0	66
PHB86T66-345	4.5	0.7	1.5	210	3.5	0.85	3	2.0	66
PHB86T66-368	6.8	0.3	0.65	210	3.5	0.85	3	2.0	66
PHB86T78-335	3.5	1.6	5.0	270	5.8	1.05	3	2.5	78
PHB86T78-345	4.5	1.0	3.0	270	5.8	1.05	3	2.5	78
PHB86T78-368	6.8	0.42	1.3	270	5.8	1.05	3	2.5	78
PHB86T98-335	3.5	2.5	6.5	450	8.5	1.55	3	3.0	98
PHB86T98-345	4.5	1.4	3.9	450	8.5	1.55	3	3.0	98
PHB86T98-368	6.8	0.6	1.7	450	8.5	1.55	3	3.0	98
PHB86T114-335	3.5	3.1	8.2	520	11.0	1.80	3	4.0	114
PHB86T114-345	4.5	1.8	4.8	520	11.0	1.80	3	4.0	114
PHB86T114-368	6.8	0.75	2.1	520	11.0	1.80	3	4.0	114
PHB86T126-335	3.5	3.5	9.8	580	16.5	2.20	3	4.5	126
PHB86T126-345	4.5	2.1	6.2	580	16.5	2.20	3	4.5	126
PHB86T126-368	6.8	0.9	2.6	580	16.5	2.20	3	4.5	126
PHB86T150-335	3.5	4.5	13.2	780	20.5	2.5	3	5.0	150
PHB86T150-345	4.5	2.6	8.2	780	20.5	2.5	3	5.0	150
PHB86T150-368	6.8	1.1	3.5	780	20.5	2.5	3	5.0	150

Mechanical Dimension



Wiring Diagram



PHB86F Series

5 Phase Hybrid Stepper Motors

NEMA 34

0.72°

Round

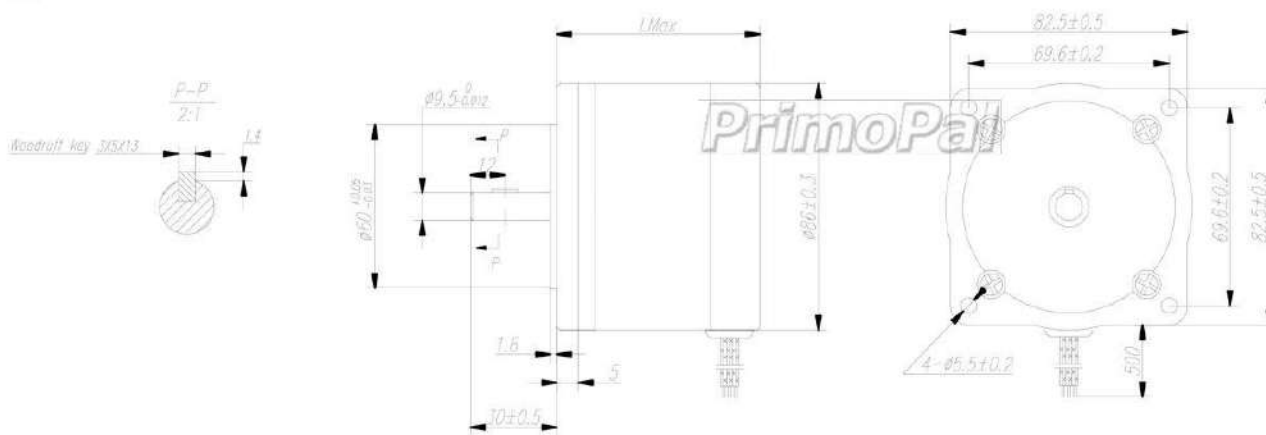
Step Angle	0.72°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80 °C Max. (rated current)
Ambient Temperature	-10 °C ~ +50 °C
Insulation Resistance	100 MΩ Min., 500VDC
Dielectric Strength	820VAC, 1s, 3mA
Shaft Radial Play	0.02 Max. (450 g-load)
Shaft Axial Play	0.08 Max. (450 g-load)



Specifications

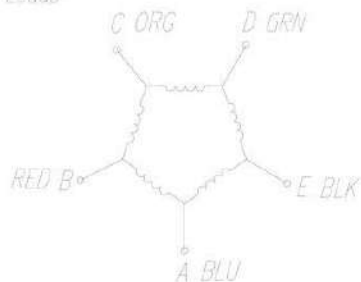
Model	Current	Resistance	Inductance	Holding Torque	Detent Torque	Rotor Inertia	# of Leads	Weight	Length
	A/∅	Ω/∅	mH/∅	N.cm	N.cm	kg.cm ²	Pin	kg	mm
PHB86F63-508	0.8	5.5	24	180	4.5	0.64	5	1.6	63
PHB86F63-515	1.5	1.5	5.6	180	4.5	0.64	5	1.6	63
PHB86F92-515	1.5	2.0	11	320	6.5	1.30	5	2.6	92
PHB86F122-515	1.5	2.5	12	450	10.5	1.90	5	3.8	122

Mechanical Dimension



Wiring Diagram

5 Leads



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