



BLDC16-NEMA 17

BRUSHLESS DC MOTOR



Features and Benefits:

- Nema 17 Mounting
- High Operating Speed Range
- High Efficiency

Dimension "A" Max.	inches	1.70	2.4	2.40	2.40	3.20	3.20	4.00	4.00
	mm	43	43	62	62	82	82	102	102
Rated Voltage	Volts	24	48	24	48	24	48	24	48
Rated Torque	oz-in	10	10	17	17	26.2	27.5	35.4	41
	N-m	0.07	0.07	0.12	0.12	0.18	0.19	0.25	0.29
Rated Speed	RPM	4000	4100	4000	4350	4000	4500	4000	4100
Rated Power	Watts	29.6	30.3	50.32	54.7	77.55	91.5	104.78	124.39
Rated Current	Amps	2.2	1.05	3.6	1.96	5.7	3.55	7.7	4.42
Peak Torque	oz-in	20	20	34	34	52.4	55	70.8	82
	N-m	0.14	0.14	0.24	0.24	0.37	0.39	0.50	0.58
Peak Current	Amps	4.4	2.1	7.2	3.92	11.4	7.1	15.4	8.84
Torque Constant (Kt)	oz-in/Amp	5.00	10.03	4.86	9.59	4.32	8.57	4.86	10.23
	N-m/Amp	0.035	0.071	0.034	0.068	0.031	0.061	0.034	0.072
Back EMF Constant (Ke)	Vp/KRPM	3.7	7.43	3.6	7.1	3.2	6.35	3.6	7.58
Motor Constant (Km)	oz-in/VW	40.8	3.99	5.43	5.80	6.11	7.55	8.33	10.08
	N-m/VW	0.029	0.028	0.038	0.041	0.043	0.053	0.059	0.071
Resistance	Ohms	1.5	6.33	0.8	2.73	0.5	1.29	0.34	1.03
Inductance	mH	2	8.56	1.2	5.07	0.75	2.6	0.43	2.22
Rotor Inertia	oz-in^2	0.15	0.15	0.26	0.26	0.37	0.37	0.47	0.47

	g-cm2	27.4	27.4	47.6	47.6	67.7	67.7	86.0	86.0
Weight	lbs	0.54	0.54	0.94	0.94	1.31	1.31	1.74	1.74
	kg	0.25	0.25	0.43	0.43	0.60	0.60	0.80	0.80
Electrical Time Constant	ms	1.3	1.4	1.5	1.9	1.5	2.0	1.3	2.2
Mechanical Time Constant	ms	3.3	3.5	3.2	2.8	3.6	2.4	2.5	2.0

ADDITIONAL SPECIFICATIONS

WINDING TYPE	STAR CONNECTION
Hall effect angle:	120° electrical angle
Number of rotor poles:	8
Number of Phases:	3
Radial Play:	0.002 " @ 0.99 lbf
End Play:	0.003" @ 0.99 lbf
Max. radial force:	15 N @ 20 mm from flange
Max. axial force:	10 N
Insulation class:	Class B
Dielectric strength:	500VDC for 1 minute
Insulation resistance:	100M Ω Min. 500VDC
Ambient Temperature:	-20 to 50 deg C
Storage Temperature:	-20 to 100 deg C

Humidity Range: 85% (RH) non-condensing

Lead wire AWG: UL1007, AWG 22

Direction of rotation*: CW

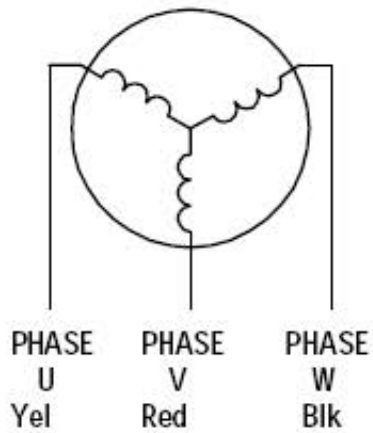
WIRING CONNECTION

Please follow commutation sequence below.

WIRING DIAGRAM

WIRE COLOR	DESCRIPTION
red/white	Hall Supply
blue	Hall A
green	Hall B
white	Hall C
black/white	Hall Ground
yellow	Phase A (U)
red	Phase B (V)
black	Phase C (W)

STAR CONNECTION DIAGRAM: (http://www.linengineering.com/wp-content/uploads/2015/10/Star_Connection_Diagram_BLDC17.gif)



APPLICABLE MODELS BL16B17 and BL17B17



(http://www.linengineering.com/wp-content/uploads/2015/10/BLDC_Commutation_CW.jpg)

COMMUTATION SEQUENCE

Hall A blue	Hall B green	Hall C white	Phase A yellow	Phase B red	Phase C black
0	0	1	X	H	L
0	1	1	H	X	L
0	1	0	H	L	X
1	1	0	X	L	H
1	0	0	L	X	H
1	0	1	L	H	X

APPLICABLE MODELS BL16B24, BL16B32, BL16B40, BL17B24, BL17B32, BL17B40



http://www.linengineering.com/wp-content/uploads/2015/10/BLDC_Commutation_CW.jpg

COMMUTATION SEQUENCE

Hall A blue	Hall B green	Hall C white	Phase A yellow	Phase B red	Phase C black
1	0	0	L	X	H
1	1	0	X	L	H
1	1	0	H	L	X
0	1	1	H	X	L
0	0	1	X	H	L
1	0	1	L	H	X

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