

WINDING CONSTANTS	UNITS	TOL	SYM	WDG Z
DC RESISTANCE	OHMS	±12.5%	R	1.0
VOLTAGE @ T _P	VOLTS	NOMINAL	V _P	18
CURRENT @ T _P	AMPERES	NOMINAL	I _P	18
TORQUE SENSITIVITY	OZ IN/AMP	±10%	K _T	8.92
BACK EMF CONSTANT	VOLTS/(RAD/SEC)	±10%	K _B	0.063
INDUCTANCE	MILLIHENRY	±30%	L	1.51

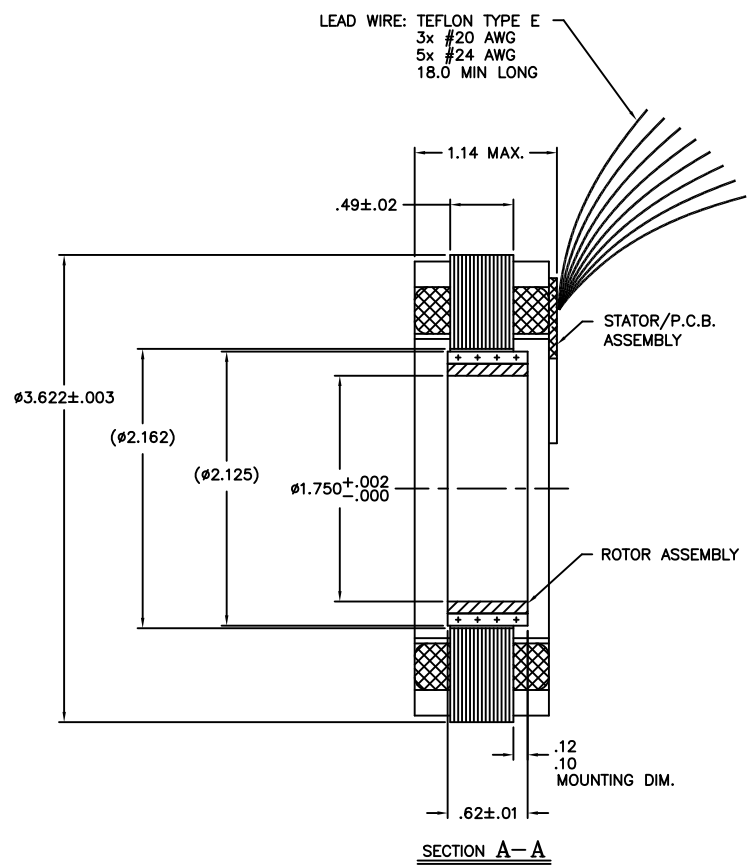
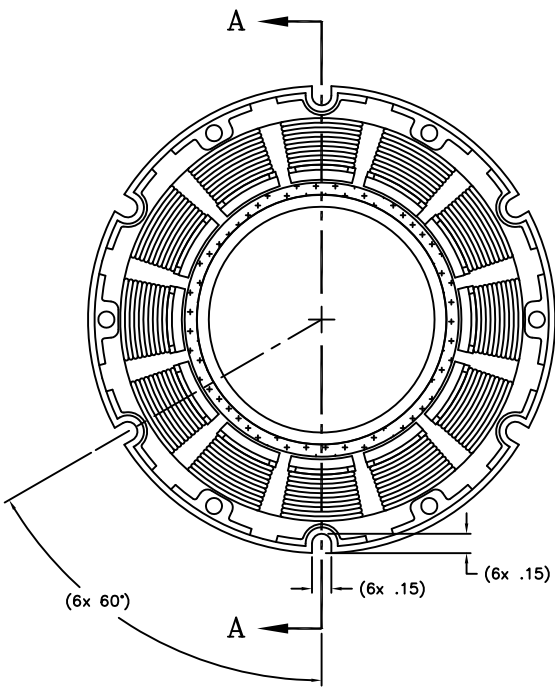
NOTES: UNLESS OTHERWISE SPECIFIED

- INTERPRET DIMENSIONING & TOLERANCING IAW ASME Y14.5M-1994.
- INTERPRET DRAWING IAW MIL-STD-100.
- INTERPRET ABBREVIATIONS IAW MIL-STD-12.

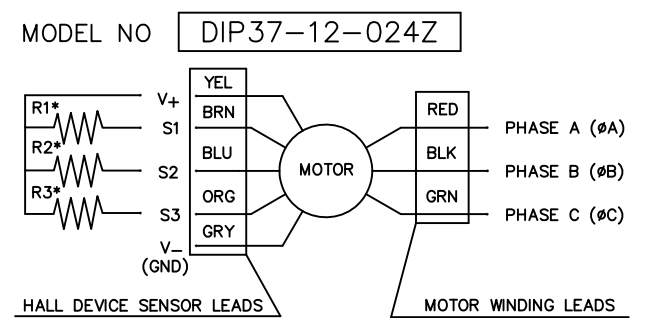
LTR	ECN NO.	DESCRIPTION	DRN	APP'D	DATE
C	060470	ADD RoHS LOGO	SLM	SH	06/20/06
D	120178	UPDATE O.D. DIMENSIONS, 3.652 NOW 3.622	SLM	BD	08/16/12

MOTOR PARAMETERS	UNITS	SYM	VALUE
PEAK TORQUE *	OZ IN	T _P	160.0
CONTINUOUS STALL TORQUE **	OZ IN	T _{CS}	50.0
MOTOR CONSTANT	OZ IN/√WATT	K _M	8.92
ELECTRICAL TIME CONSTANT	MILLISECOND	τ _E	1.51
MECHANICAL TIME CONSTANT	MILLISECOND	τ _M	19.8
POWER I ² R @ T _P	WATTS	P _P	324
DAMPING FACTOR (ZERO IMPEDANCE)	OZ IN/(RAD/SEC)	F _O	0.66
FRICTION TORQUE	OZ IN	T _F	3.0
ROTOR INERTIA	OZ IN SEC ²	J _M	0.013
MAX ALLOWABLE SPEED	RPM	S _M	8,000
SPEED @ 40 OZ IN & 28 VDC	RPM	S _L	1,800
THEO ACC @ T _P	RAD/SEC ²	α _T	1.23x10 ⁴
THERMAL RESISTANCE ***	°C/WATT	θ _{TH}	2.6
MAX ALLOWABLE WINDING TEMP	°C	TEMP	125
PHASES/WINDING TYPE			3/Y
POLES			8
WEIGHT	OZ	W _T	40.0

* 10 SEC @ 25°C AMBIENT TEMP
 ** 25°C AMBIENT, 125° WINDING TEMP
 *** WITH 10 X 10 X .375 THICK AL HEAT SINK



CONNECTION DIAGRAM FOR BLDC MOTOR



HALL DEVICE SENSOR LEADS
 SUPPLY VOLTAGE 4.5 TO 24 VOLTS
 MAX SINK CURRENT 50 MA
 * PULL UP RESISTORS REQUIRED FOR OPEN COLLECTOR SENSOR OUTPUT
 RECOMMENDED R = 100 X V+ (Ω)
 SENSOR SEQUENCE IS 120° (ELECTRICAL)

MOTOR ROTATION **CW** (AS VIEWED FROM MOUNTING END)
 MOTOR ROTATION **CCW** (AS VIEWED FROM MOUNTING END)

(ELECTRICAL DEGREES)	S1	S2	S3	ΦA	ΦB	ΦC
0°	I	O	O	LO	HI	X
60°	I	O	O	LO	HI	X
120°	O	I	O	HI	LO	X
180°	O	O	I	HI	LO	X
240°	O	I	I	LO	HI	X
300°	O	O	I	LO	HI	X
360°	I	I	O	LO	X	HI

DEFINITIONS:
 HI = TURN ON SOURCE SIDE
 LO = TURN ON SINK SIDE
 X = BOTH OFF
 I = HI VOLTAGE
 O = LO VOLTAGE

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN INCHES
 -BREAK SHARP EDGES .015 MAX.
 -SURFACE ROUGHNESS -125
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R.010

TOLERANCES:
 DECIMALS ANGULAR
 .X ± .03 ±0° 30'
 .XX ± .01
 .XXX ± .005
 DO NOT SCALE DRAWING

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BEI KIMCO MAGNETICS DIVISION
 SAN MARCOS, CA 92069

DRAWN R. ELLIOTT	DATE 11/19/01	TITLE BRUSHLESS DC MOTOR (PART SET)
MECH CHECK S. MCGHEE	11/19/01	
APPD S. HSIA	11/19/01	
FILE NO. M/DIP37-12-024Z	SIZE C	FSCM NO. 55789
	DWG NO. DIP37-12-024Z	REV D
	SCALE 1/1	SHEET 1 OF 1



DIP37-12-024Z