

4

3

2

1

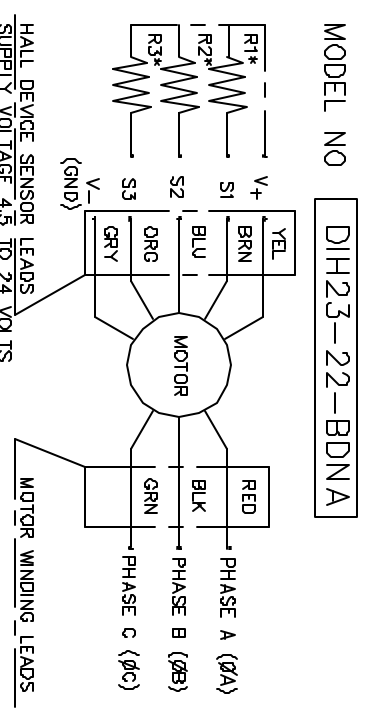
WINDING CONSTANTS	UNITS	TOL	SYM	WDG A
DC RESISTANCE	OHMS	±12.5%	R	0.55
VOLTAGE @ PEAK TORQUE	80 OZ IN VOLTS	NOMINAL	Vp	8.30
CURRENT @ PEAK TORQUE	80 OZ IN AMPERES	NOMINAL	Ip	15.1
TORQUE SENSITIVITY	OZ IN/AMP	±10%	Kt	5.30
BACK EMF CONSTANT	VOLTS/(RAD/SEC)	±10%	Kb	0.037
INDUCTANCE	MILLIHENRY	±30%	L	0.60

MOTOR PARAMETERS

PARAMETER	UNITS	SYM	VALUE
PEAK TORQUE *	OZ IN	Tp	80
CONTINUOUS STALL TORQUE **	OZ IN	Tcs	30.0
MOTOR CONSTANT	OZ IN/√WATT	Km	7.2
ELECTRICAL TIME CONSTANT	MILLISECOND	Te	1.1
MECHANICAL TIME CONSTANT	MILLISECOND	Tm	5.0
POWER 1/2 R @ TORQUE	WATTS	P	125.3
DAMPING FACTOR (ZERO IMPEDANCE)	OZ IN/(RAD/SEC)	Fo	0.361
FRICITION TORQUE	OZ IN	Tf	1.5
ROTOR INERTIA	OZ IN SEC <sup>2</sup>	Jm	1.8x10 <sup>-3</sup>
MAX ALLOWABLE SPEED	RPM	Sm	14,000
SPEED @ 20.0 OZ IN & 24.0 VDC	RPM	Sl	4,250
THEO ACC @ 80 OZ IN	RAD/SEC <sup>2</sup>	oCt	4.4x10 <sup>4</sup>
THERMAL RESISTANCE ***	°C/WATT	θth	4.0
MAX ALLOWABLE WINDING TEMP	°C	TEMP	125
PHASES/WINDING TYPE			3/Y
POLES			3
WEIGHT	OZ	Wt	18.6

\* 1.0 SEC @ 25°C AMBIENT TEMP  
 \*\* 25°C AMBIENT, 125° WINDING TEMP  
 \*\*\* WITH 12 X 12 X .25 THICK AL HEAT SINK

CONNECTION DIAGRAM FOR BLDC MOTOR



MOTOR ROTATION **C.W.** (AS VIEWED FROM MOUNTING END)

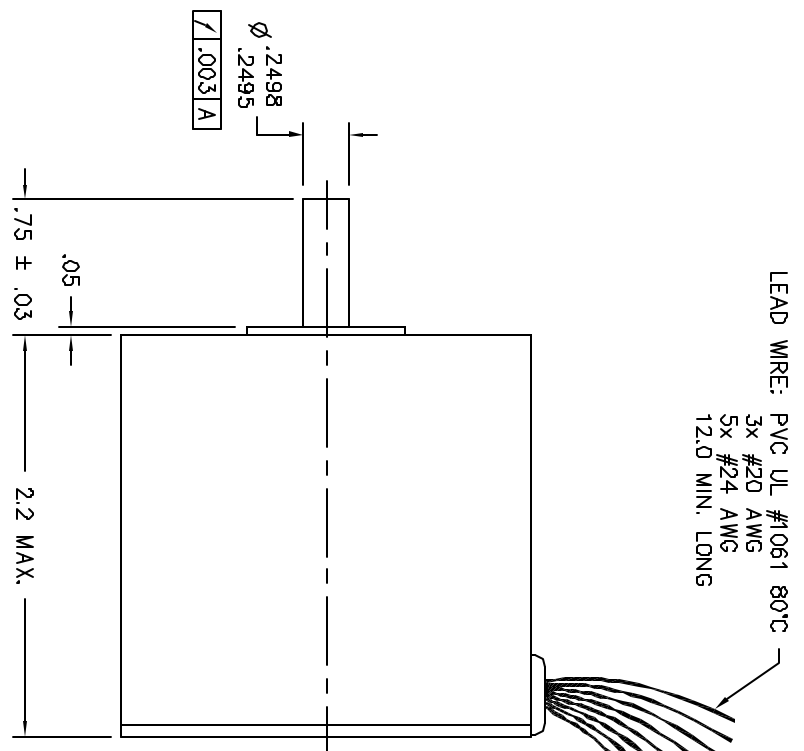
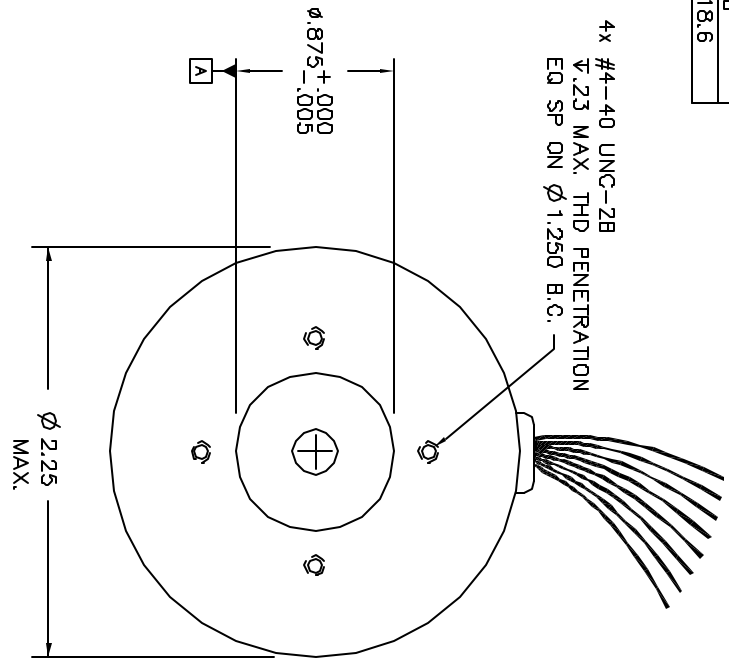
(ELECTRICAL DEGREES)	S1	S2	S3	ØA	ØB	ØC
0°	I	D	O	X	HI	LO
60°	I	O	I	X	HI	LO
120°	O	I	I	X	HI	LO
180°	O	I	I	X	HI	LO
240°	I	O	I	X	HI	LO
300°	I	O	I	X	HI	LO
360°	I	O	I	X	HI	LO

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240°	I	O	I	X	HI	LO
300°	I	O	I	X	HI	LO
360°	I	O	I	X	HI	LO

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

NOTES: UNLESS OTHERWISE SPECIFIED



LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
A	98-1102	DBN(LTR) IS BDN(LTR)	RLE	HP	9/21/98
C	060137	CONVERTED TO R0HS	JWT	SH	3/16/06

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**BEI KIMCO MAGNETICS DIVISION**  
**VISTA, CA 92081**

**BRUSHLESS DC MOTOR**

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED:  
 ALL DIMENSIONS ARE IN INCHES  
 -HOLE SHARP EDGES 0.05 MAX.  
 -SURF FINISH 32  
 -DIMENSIONS APPLY AFTER FINISH  
 -MAX FILLET R .200

TOLERANCES:  
 DECIMALS ANGULAR  
 X ± .01 5/30°  
 XX ± .005  
 XXX ± .005  
 DO NOT SCALE DRAWING

DRAWN **R. ELLIOTT** DATE 3/5/98  
 MECH CHECK **J. THOMPSON** 2/14/06

APPD **HA PHAM** 3/5/98

FILE NO. X

SIZE **B** FSCM NO. **55789** DWG NO. **DIH23-22-BDNA** REV **C**  
 SCALE 1/1 SHEET 1 OF 1

