

WINDING CONSTANTS	UNITS	TOL	SYM	WDG A
DC RESISTANCE	OHMS	±12.5%	R	5.0
VOLTAGE \odot T _P	VOLTS	NOMINAL	V _P	28.7
CURRENT \odot T _P	AMPERES	NOMINAL	I _P	5.75
TORQUE SENSITIVITY	OZ-IN/AMP	±10%	K _T	17.4
BACK EMF CONSTANT	VOLTS/(RAD/SEC)	±10%	K _B	0.123
INDUCTANCE	MILLIHENRY	±30%	L	6.0

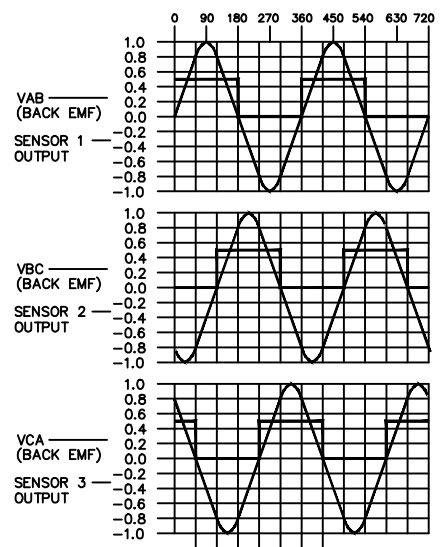
NOTES: UNLESS OTHERWISE SPECIFIED
 1. INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.
 2. INTERPRET DRAWING IAW ASME Y14.100.
 3. ALL ABBREVIATIONS IAW ASME Y14.38.
 4. SHAFT RUNOUT TO BE .003 MAX.

LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
X1	110xxx	INITIAL RELEASE	JWT		

MOTOR PARAMETERS	UNITS	SYM	NOM. VALUE
PEAK TORQUE *	OZ-IN	T _P	100.0
CONTINUOUS STALL TORQUE **	OZ-IN	T _{CS}	32.0
MOTOR CONSTANT	OZ-IN/√WATT	K _M	7.8
ELECTRICAL TIME CONSTANT	MILLISECOND	T _E	1.2
MECHANICAL TIME CONSTANT	MILLISECOND	T _M	4.5
POWER I ² R \odot T _P	WATTS	P _P	165.2
DAMPING FACTOR (ZERO IMPEDANCE)	OZ-IN/(RAD/SEC)	F _O	0.426
FRICTION TORQUE	OZ-IN	T _F	1.5
ROTOR INERTIA	OZ IN SEC ²	J _M	19x10 ⁻⁴
THEO. NO-LOAD SPEED	RPM	S _P	14,000
SPEED \odot OZ-IN & VDC	RPM	S _I	
THEO ACC \odot T _P	RAD/SEC ²	α _T	5.3x10 ⁻⁴
THERMAL RESISTANCE ***	°C/WATT	U _{TH}	4.5
MAX ALLOWABLE WINDING TEMP	°C	TEMP	125
NUMBER OF PHASES/WINDING TYPE		3/Y	
NUMBER OF POLES		4	
WEIGHT	OZ	W _T	TBD

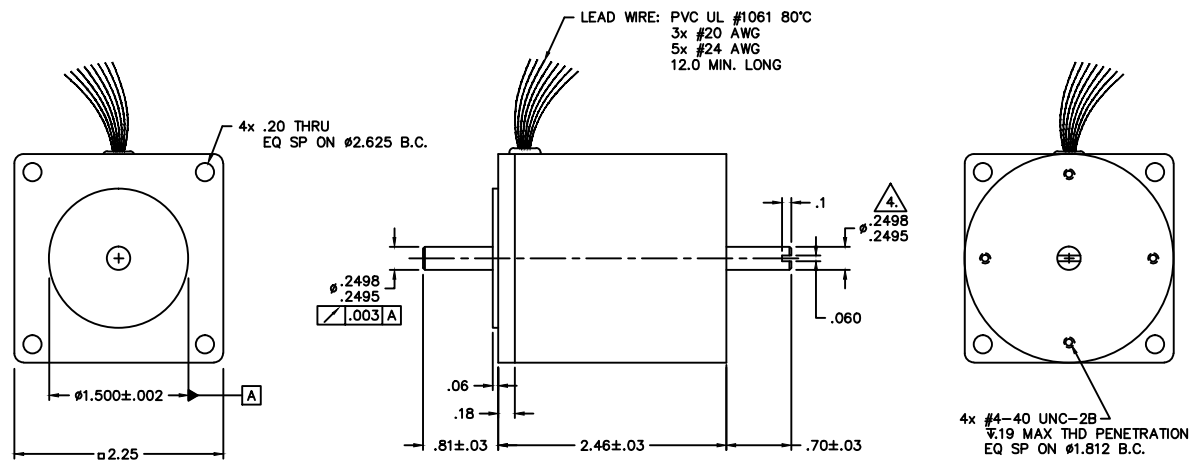
* 10 SEC \odot 25°C AMBIENT TEMP
 ** 25°C AMBIENT, 125° WINDING TEMP
 *** WITH 12 X 12 X .25 THICK AL HEAT SINK

BACK EMF AND SENSOR WAVEFORMS
 (ROTATION OF MOTOR = COUNTERCLOCKWISE FACING LEAD SIDE)



COLOR	1	2	3	4	5	6
RED	+	+	-	-	-	-
BLK	-	-	+	+	-	-
GRN	-	-	+	+	+	+
BRN	1	1	0	0	1	1
BLU	0	1	1	1	0	0
ORG	0	0	0	1	1	1
YEL						
GRY						

MOTOR LEADS { A, B, C
 SENSOR LEADS { 1, 2, 3
 Vcc+
 GND



LEAD WIRE: PVC UL #1061 80°C
 3x #20 AWG
 5x #24 AWG
 12.0 MIN. LONG

4x .20 THRU
 EQ SP ON Ø2.625 B.C.

4x #4-40 UNC-2B
 .19 MAX THD PENETRATION
 EQ SP ON Ø1.812 B.C.

THIRD ANGLE PROJECTION
 UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN INCHES
 -BREAK SHARP EDGES .015 MAX
 -SURFACE ROUGHNESS √63
 -DIMENSIONS APPLY AFTER FINISH
 -HAK FILLET R .010
 -DIAMETERS SHALL NOT EXCEED A RUNOUT OF .005 FIM
 TOLERANCES:
 DECIMALS .XX ± .03
 .XX ± .01
 .XXX ± .005
 DO NOT SCALE DRAWING

BEI KIMCO MAGNETICS DIVISION
 VISTA, CA 92081

DRAWN J. THOMPSON	DATE 9/01/11	TITLE BLDC MOTOR
APP'D	SIZE C	FIG. NO. 55789
FILE NO. M:\TOP LEVEL\DIM\...	DWG NO. DIN23-25-001A	REV X1
SCALE: NONE	SHEET 1 OF 1	