

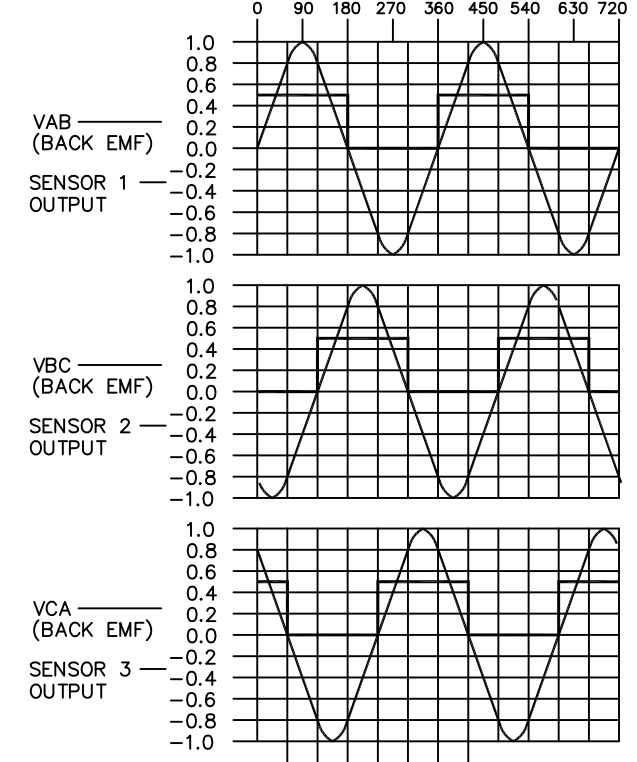
LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
X1	110xxx	INITIAL RELEASE	JWT		

WINDING CONSTANTS *	UNITS	TOL	SYM	WDG A	WDG B	WDG C	WDG D	WDG E
DC RESISTANCE	OHMS	±12.5%	R	1.3	2.1	3.3	5.2	8.3
VOLTAGE @ T _p	VOLTS	NOMINAL	V _p	9.1	11.8	14.9	18.7	23.7
CURRENT @ T _p	AMPERES	NOMINAL	I _p	7.0	5.6	4.5	3.6	2.9
TORQUE SENSITIVITY	OZ-IN/AMP	±10%	K _T	2.0	2.5	3.1	3.9	4.9
BACK EMF CONSTANT	VOLTS/(RAD/SEC)	±10%	K _B	0.014	0.018	0.022	0.028	0.035
INDUCTANCE	MILLIHENRY	±30%	L	0.68	1.1	1.7	2.7	4.3

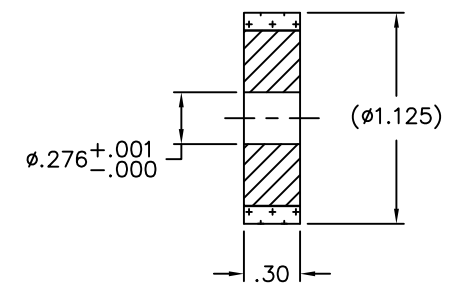
MOTOR PARAMETERS *	UNITS	SYM	NOM. VALUE
PEAK TORQUE	OZ-IN	T _p	14.0
CONTINUOUS STALL TORQUE **	OZ-IN	T _{CS}	4.2
MOTOR CONSTANT	OZ-IN/√WATT	K _M	1.7
ELECTRICAL TIME CONSTANT	MILLISECOND	τ _E	0.52
MECHANICAL TIME CONSTANT	MILLISECOND	τ _M	21.0
POWER I ² R @ T _p	WATTS	P _p	67.3
DAMPING FACTOR (ZERO IMPEDANCE)	OZ-IN/(RAD/SEC)	F ₀	0.021
BREAKAWAY TORQUE	OZ-IN	T _F	0.7
ROTOR INERTIA	OZ-IN SEC ²	J _M	4.6x10 ⁻⁴
MAX ALLOWABLE SPEED	RPM	S _M	14,000
SPEED @ OZ-IN & VDC	RPM	S _L	
THEO ACC @ T _p	RAD/SEC ²	α _T	3x10 ⁴
THERMAL RESISTANCE ***	°C/WATT	θ _{TH}	12.0
MAX ALLOWABLE WINDING TEMP	°C	TEMP	155
NUMBER OF PHASES/WINDING TYPE			3/Y
NUMBER OF POLES			8
WEIGHT	OZ	W _T	2.1

* 25°C AMBIENT TEMP
 ** 25°C AMBIENT, 155° WINDING TEMP
 *** WITH ALUMINUM HOUSING HEATSUNK TO 8 X 8 X 1/8 INCH ALUMINUM PLATE

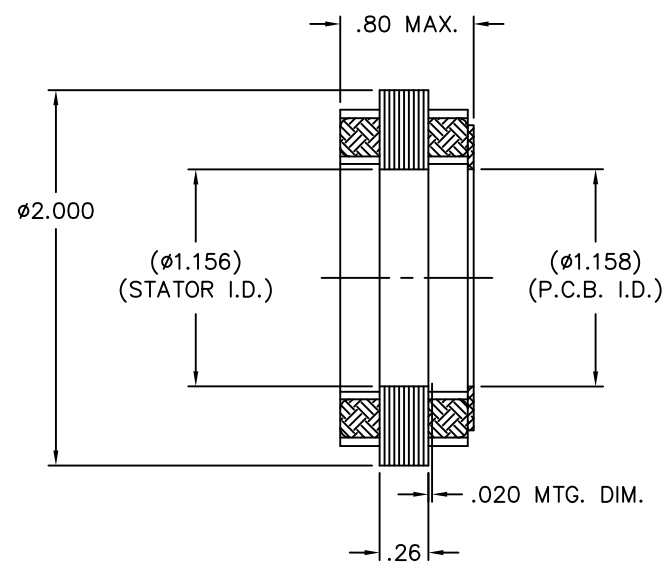
BACK EMF AND SENSOR WAVEFORMS
 (ROTATION OF MOTOR = COUNTER CLOCKWISE FACING LEAD SIDE)



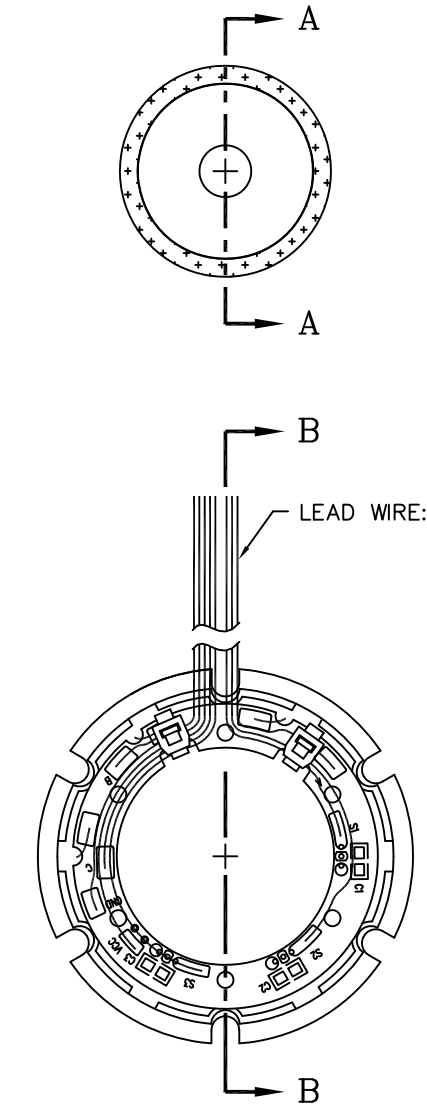
MOTOR LEADS	COLOR	1	2	3	4	5	6
A	RED	+	+	-	-		
B	BLK	-	+	+	-		
C	GRN	-	-	+	+		
1	BRN	1	1	0	0	0	1
2	BLU	0	1	1	1	0	0
3	ORG	0	0	0	1	1	1
Vcc+	YEL						
GND	GRY						



SECTION A-A
 ROTOR ASSEMBLY



SECTION B-B
 STATOR ASSEMBLY



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THIRD ANGLE PROJECTION
 UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN INCHES
 -BREAK SHARP EDGES .015 MAX.
 -SURFACE ROUGHNESS √63
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R .010
 TOLERANCES:
 DECIMALS ANGULAR
 .X ± .03 ±0° 30'
 .XX ± .01
 .XXX ± .005
 DO NOT SCALE DRAWING

BEI KIMCO MAGNETICS DIVISION
 VISTA, CA 92081

DRAWN J. THOMPSON	DATE 11/01/11	TITLE BLDC MOTOR PART SET		
MECH CHECK		SIZE B	FSCM NO. 55789	DWG NO. DIP20-06-HPZ(LTR)
APPD		SCALE 1/1	REV X1	SHEET 1 OF 1
FILE NO. M:\TOPLEVEL\DIP\...				



D

C

B

A