

WINDING CONSTANTS	UNITS	TOL	SYM	WDG A
DC RESISTANCE	OHMS	±12.5%	R	0.69
VOLTAGE @ PEAK TORQUE 350 OZ IN	VOLTS	NOMINAL	Vp	10.2
CURRENT @ PEAK TORQUE 350 OZ IN	AMPERES	NOMINAL	Ip	14.8
TORQUE SENSITIVITY	OZ IN/AMP	±10%	Kt	23.7
BACK EMF CONSTANT	VOLTS/(RAD/SEC)	±10%	Kb	0.167
INDUCTANCE	MILLIHENRY	±30%	L	1.8

MOTOR PARAMETERS	UNITS	SYM	VALUE
PEAK TORQUE *	OZ IN	Tp	350.0
CONTINUOUS STALL TORQUE **	OZ IN	Tcs	175.0
MOTOR CONSTANT	OZ IN/√WATT	Km	28.5
ELECTRICAL TIME CONSTANT	MILLISECOND	Te	2.6
MECHANICAL TIME CONSTANT	MILLISECOND	Tm	6.6
POWER I²R @ TORQUE 350 OZ IN	WATTS	P	150.5
DAMPING FACTOR (ZERO IMPEDANCE)	OZ IN/(RAD/SEC)	Fo	5.75
FRICTION TORQUE	OZ IN	Tf	7.0
ROTOR INERTIA	OZ IN SEC²	Jm	0.0376
MAX ALLOWABLE SPEED	RPM	Sm	12,000
SPEED @ 120 OZ IN & 150 VDC	RPM	Sl	7,600
THEO ACC @ 350 OZ IN	RAD/SEC²	αT	9.3x10³
THERMAL RESISTANCE ***	°C/WATT	θth	1.9
MAX ALLOWABLE WINDING TEMP	°C	TEMP	125
PHASES/WINDING TYPE			3/Y
POLES			8
WEIGHT	OZ	Wt	86

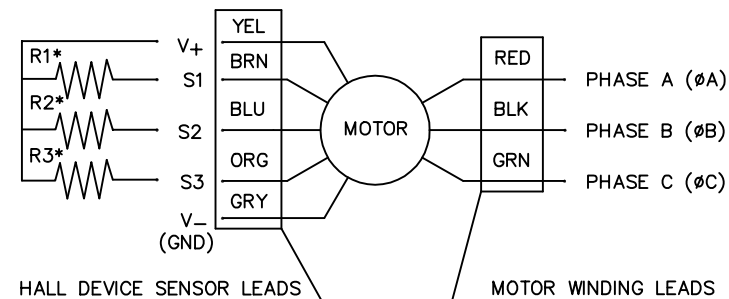
\* 10 SEC @ 25°C AMBIENT TEMP  
 \*\* 25°C AMBIENT, 125° WINDING TEMP  
 \*\*\* WITH 12 X 12 X .5 THICK AL HEAT SINK

NOTES: UNLESS OTHERWISE SPECIFIED  
 1. SHAFT RUNOUT TO BE .003 MAX.

REV	DCN NO.	DESCRIPTION	DRN	APP'D	DATE
A	98-0720	UPDATE WT	RLE		7/7/98
B	98-1049	DBY(LTR) IS DDY(LTR)	RLE		9/22/98

CONNECTION DIAGRAM FOR BLDC MOTOR

MODEL NO **DIH40-33-DDYA**



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)

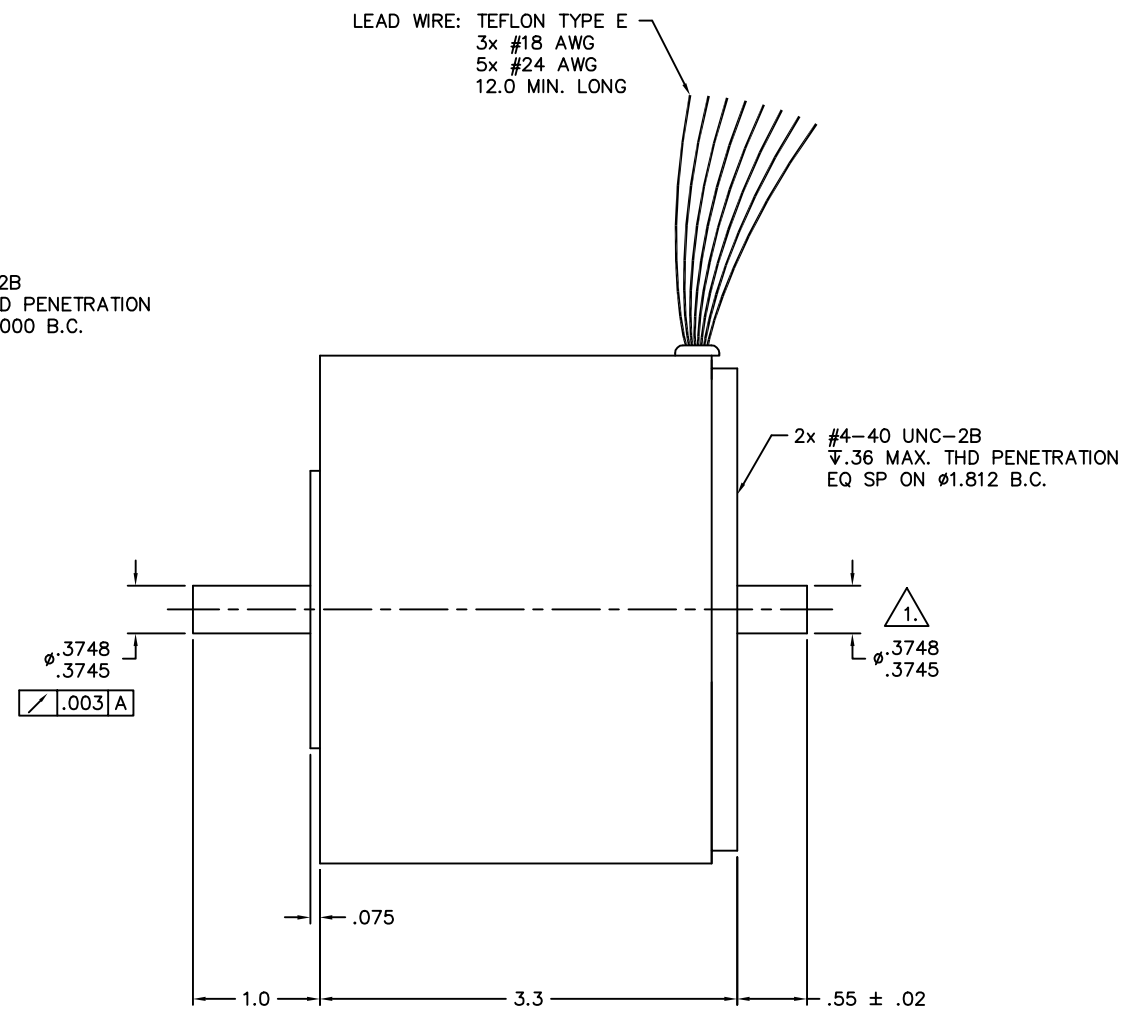
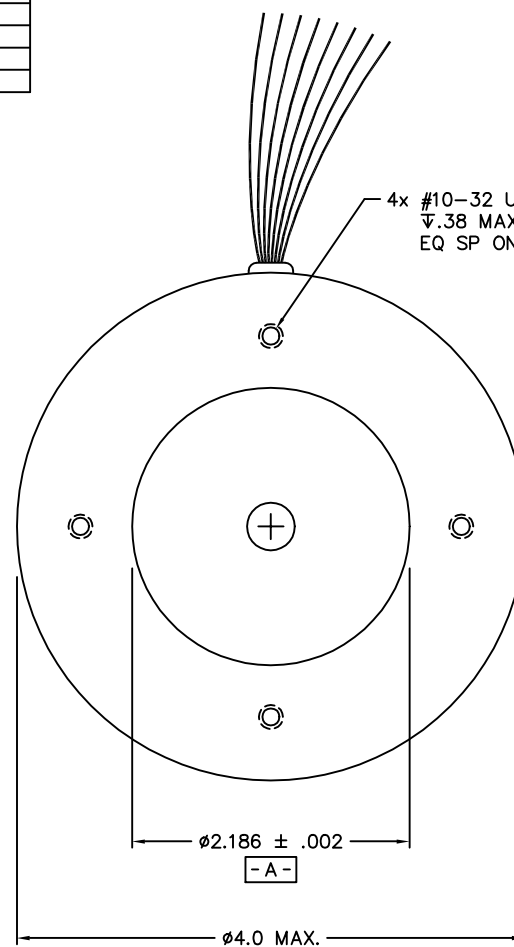
(ELECTRICAL DEGREES)

	S1	S2	S3	φA	φB	φC
0°	I	O	O	LO	HI	X
60°	I	O	O	X	HI	LO
120°	O	O	I	HI	X	LO
180°	O	I	I	HI	LO	X
240°	O	I	O	X	LO	HI
300°	I	I	O	LO	X	HI
360°	I	I	O	LO	X	HI

(ELECTRICAL DEGREES)

	S1	S2	S3	φA	φB	φC
0°	I	O	O	HI	LO	X
60°	I	I	O	HI	X	LO
120°	O	I	O	X	HI	LO
180°	O	I	I	LO	HI	X
240°	O	O	I	LO	X	HI
300°	I	O	I	X	LO	HI
360°	I	O	I	X	LO	HI

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



DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE ANGULAR = ± 30' .X = ± .03 .XX = ± .01 .XXX = ± .005	SIZE <b>C</b>	FSCM NO. 55789	<b>BEI</b> KIMCO MAGNETICS DIVISION SAN MARCOS, CA 92069
	TITLE: BRUSHLESS DC MOTOR		DWG NO: DIH40-33-DDYA
SCALE: 1/1	SHT. 1 OF 1	DRN: McGHEE	12/16/97