

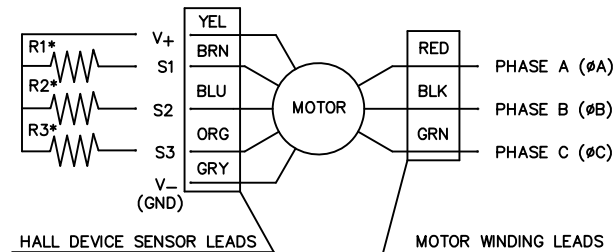
WINDING CONSTANTS	UNITS	TOL	SYM	WDG Z
DC RESISTANCE	OHMS	±12.5%	R	6.3
VOLTAGE @ PEAK TORQUE 24 OZ IN	VOLTS	NOMINAL	Vp	23.6
CURRENT @ PEAK TORQUE 24 OZ IN	AMPERES	NOMINAL	Ip	3.75
TORQUE SENSITIVITY	OZ IN/AMP	±10%	Kt	6.4
BACK EMF CONSTANT	VOLTS/(RAD/SEC)	±10%	Kb	0.045
INDUCTANCE	MILLIHENRY	±30%	L	4.1

MOTOR PARAMETERS	UNITS	SYM	VALUE
PEAK TORQUE *	OZ IN	Tp	24.0
CONTINUOUS STALL TORQUE **	OZ IN	Tcs	7.5
MOTOR CONSTANT	OZ IN/√WATT	Km	2.5
ELECTRICAL TIME CONSTANT	MILLISECOND	Te	0.65
MECHANICAL TIME CONSTANT	MILLISECOND	Tm	10.9
POWER I²R @ TORQUE 24 OZ IN	WATTS	P	95.9
DAMPING FACTOR (ZERO IMPEDANCE)	OZ IN/(RAD/SEC)	Fo	0.042
FRICTION TORQUE	OZ IN	Tf	0.7
ROTOR INERTIA	OZ IN SEC²	Jm	4.6x10⁻⁴
MAX ALLOWABLE SPEED	RPM	Sm	14,000
SPEED @ 2 OZ IN & 12 VDC	RPM	Sl	1,000
THEO ACC @ 24 OZ IN	RAD/SEC²	αT	5.2x10⁴
THERMAL RESISTANCE ***	°C/WATT	θth	7.0
MAX ALLOWABLE WINDING TEMP	°C	TEMP	125
PHASES/WINDING TYPE			3/Y
POLES			8
WEIGHT	OZ	Wt	8.1

\* 10 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

MODEL NO **DIH23-13-001A**



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)

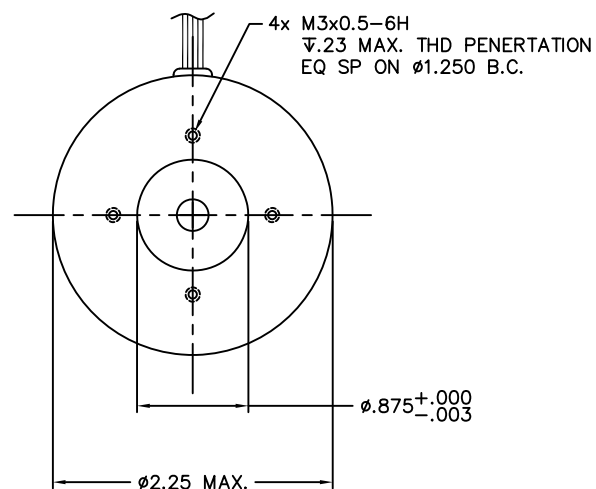
MOTOR ROTATION **CW**  
 (AS VIEWED FROM MOUNTING END)

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	I	X	HI	LO
120°	O	I	O	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	O	O	LO	HI	X

(ELECTRICAL DEGREES)	S1	S2	S3	ΦA	ΦB	ΦC
0°	I	O	O	HI	LO	X
60°	I	I	O	X	HI	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	O	HI	LO	X

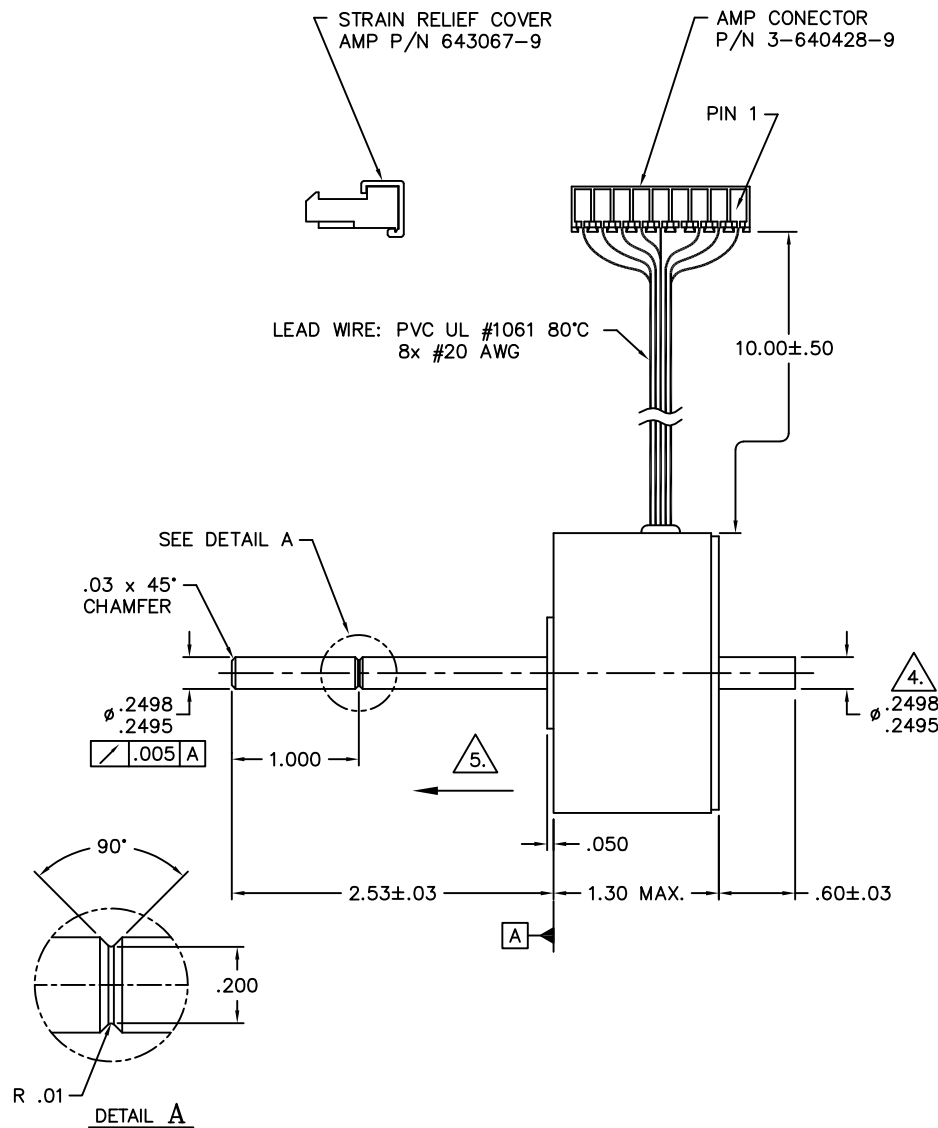
DEFINITIONS:  
 HI = TURN ON SOURCE SIDE  
 LO = TURN ON SINK SIDE  
 X = BOTH OFF  
 I = HI VOLTAGE  
 O = LO VOLTAGE



- NOTES: UNLESS OTHERWISE SPECIFIED
- INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.
  - INTERPRET DRAWING IAW ASME Y14.100.
  - ALL ABBREVIATIONS IAW ASME Y14.38.
  - SHAFT RUNOUT TO BE .005 MAX.
  - MAXIMUM SHAFT PULLING FORCE 13 POUNDS. DUE TO URETHANE BUSHINGS AROUND BEARINGS, DAMAGE TO INSIDE OF MOTOR MAY OCCUR IF EXCEEDED.

ZONE	REV.	REVISION DESCRIPTION	ECN NO.	DATE
	1	INITIAL RELEASE		

PIN NO.	LEAD WIRE COLOR	LEAD WIRE AWG
1	RED	#20
2	BLK	#20
3	GRN	#20
4	-	-
5	YEL	#20
6	BRN	#20
7	BLU	#20
8	ORG	#20
9	GRY	#20



AUTOCAD

FOR REFERENCE ONLY. CHECK LATEST REVISION BEFORE USE.		1499 POINSETTIA AVENUE SUITE 160 VISTA, CA 92081	
DRAWN J. THOMPSON	DATE 03/19/24	SENSATA TECHNOLOGIES PROPRIETARY AND CONFIDENTIAL. NEITHER THIS PRINT NOR THE INFORMATION CONTAINED HEREON IS TO BE USED AGAINST THE INTERESTS OF SENSATA TECHNOLOGIES OR AGAINST THE INTERESTS OF ANY OF ITS AFFILIATED COMPANIES OR WHOLLY OWNED SUBSIDIARIES.	
DATE	APPROVED	INTERPRET DIMENSIONING AND TOLERANCING PER ASME Y14.5-2009. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.	
DATE	APPROVED	TOLERANCES DECIMALS ± 0.03 ANGLES X.X° ± 0°30' X.XX ± 0.01 X.XXX ± 0.005	
DATE	APPROVED	DO NOT SCALE DRAWING	THIRD ANGLE PROJECTION
TITLE		SIZE DWG NO.	REV.
BRUSHLESS DC MOTOR		C DIH23-13-001A	1
SCALE: NONE		SHEET 1 OF 1	

