

SPECIFICATIONS:

NUMBER OF PHASES: 4	ROTOR INERTIA: 135 g-cm <sup>2</sup> (0.738 oz-in <sup>2</sup> ) NOM
STEPS PER REVOLUTION: 200	DETENT TORQUE: 224.3 g-cm (3.11 oz-in) MIN
STEP ANGLE: 1.8°	INSULATION CLASS: B
STEP TO STEP ACCURACY: 0.09°	BEARINGS: ABEC 3, DOUBLE SHIELDED
POSITION ACCURACY: 0.09°	TEMP. RISE: 80°C MAX.
HYSTERESIS: N/A%	OPERATING TEMP. RANGE: -20 TO +50°C
SHAFT RUNOUT: 0.03 mm T.I.R. MAX	STORAGE TEMP. RANGE: -30 TO +70°C
RADIAL PLAY: 0.02 mm MAX (0.5 kg RADIAL LOAD)	RELATIVE HUMIDITY RANGE 15 TO 85%
END PLAY: 0.08 mm MAX (0.5 kg AXIAL LOAD)	WEIGHT: 420 G (14.8 oz ) APPROXIMATE

CONNECTION	RESISTANCE PER PHASE (ohm $\pm 10\%$ )	INDUCTANCE PER PHASE (mH $\pm 20\%$ )	RATED CURRENT (Amp)	HOLDING TORQUE (Nm MIN)	HOLDING TORQUE (oz-in)
BI-POLAR SERIES	2.8	5.6	1.41	0.54	76.5
BI-POLAR PARALLEL	0.7	1.4	2.83	0.54	76.5
UNI-POLAR	1.4	1.4	2.00	0.39	55.2

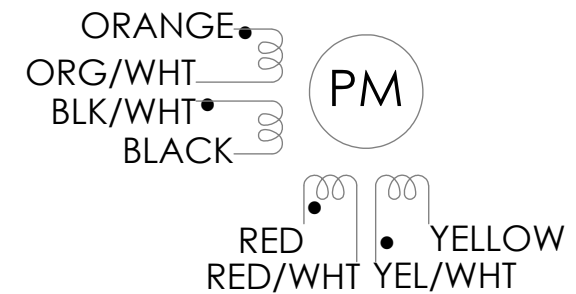
NOTES, UNLESS OTHERWISE SPECIFIED:

1. MEASUREMENTS MADE AT RATED CURRENT IN EACH PHASE.
2. BETWEEN ANY TWO ADJACENT FULL STEP POSITIONS.
3. MAXIMUM ERROR IN  $360^{\circ}$ .
4. HIPOT 500 VAC, 60Hz FOR ONE MINUTE.
5. LEADS: 8, 22 AWG, 7 STRAND MIN. UL AND CSA APPROVED. UL 1430 OR UL 3265
6. INSULATION RESISTANCE: 100 MEGOHMS MIN AT 500 VDC.
7. AS MEASURED ACROSS EACH PHASE.
8. AS MEASURED ACROSS EACH PHASE USING AN A.C. INDUCTANCE BRIDGE AT 1KHz.
9. AS MEASURED BY THE CHANGE IN RESISTANCE METHOD, WITH RATED CURRENT APPLIED TO 2 PHASES: WITH MOTOR AT REST.
10. ENCODER 970-1001 INSTALLED PER AMP ASSEMBLY PRACTICES. RESOLUTION: 2000 CPR WITH MARKER PULSE. ENCODER CABLE SOLD SEPARATELY.
11. ROTOR AND STATOR LAMINATED CONSTRUCTION.
12. THIS MOTOR IS MANUFACTURED IN COMPLIANCE WITH CURRENT EU RoHS DIRECTIVE.
13. MOTOR LABEL TO INCLUDE AMP LOGO, AMP WEBSITE ADDRESS, "RoHS" COMPLIANCE LOGO, AMP P/N, "MADE IN (COUNTRY)", AND DATE CODE.
14. OTHER TAPPED HOLES MAY BE PRESENT ON REAR OF MOTOR.

## REVISIONS

ECO #	REV.	DESCRIPTION	DATE	APPROVED
6941	A	INITIAL RELEASE	1/16/14	JEFF. K
8034	B	CHG REAR SHAFT LENGTH/TYPO	8/25/18	JEFF. K
8705	C	REDRAWN IN SOLIDWORKS BY ALAN. N, FRONT END BELL THK FROM 5+/-0.5 TO 4.8+/-0.3, SHAFT L 16 +/-0.2 TO +/-1.	8/23/21 ALAN. N	LEO. L

## WIRING DIAGRAM



## DRIVE SEQUENCE MODEL BI-POLAR PARALLEL FULL STEP

STEP	(A+) ORG & BKL/WHT	(A-) BLK & ORG/WHT	(B+) RED & YEL/WHT	(B-) YEL & RED/WHT
1	+	-	+	-
2	-	+	+	-
3	-	+	-	+
4	+	-	-	+
1	+	-	+	-

CW (CLOCKWISE) AND CCW (COUNTER-CLOCKWISE) ROTATION  
WHEN SEEN FROM THE MOUNTING FACE END OF THE MOTOR



PROPRIETARY AND CONFIDENTIAL

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PROHIBITED.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES:  
ANGULAR:  $\pm 0.5$   
ONE PLACE DECIMAL  $\pm 0.25$   
TWO PLACE DECIMAL  $\pm 0.13$   
THIRD ANGLE PROJECTION

MATERIAL

DO NOT SCALE DRAWING

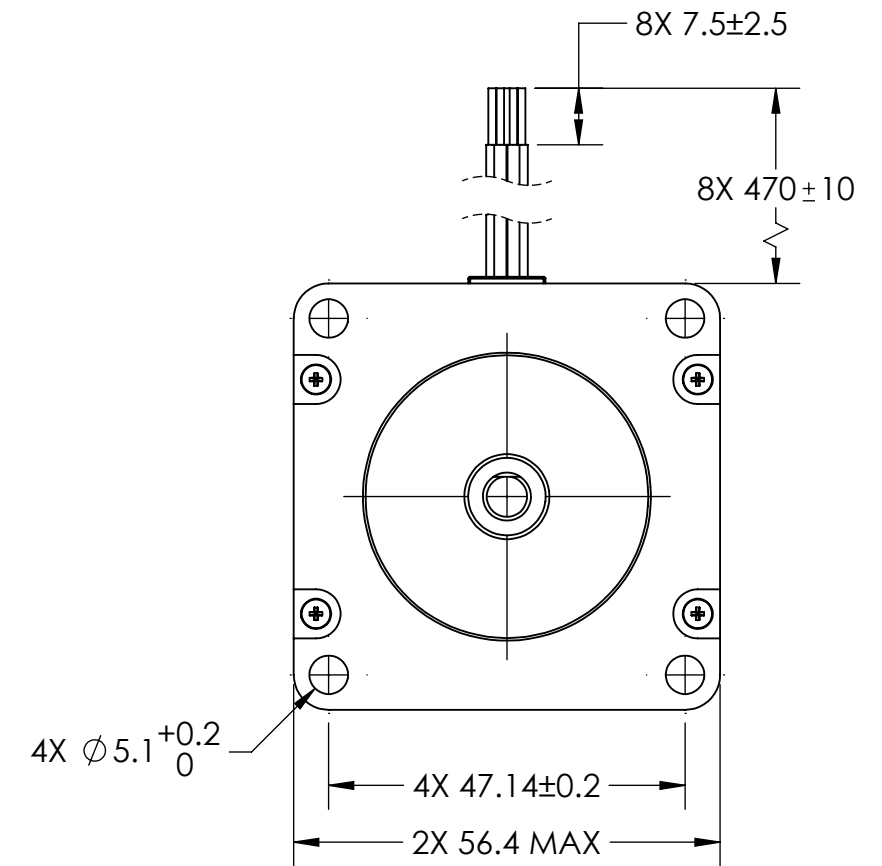
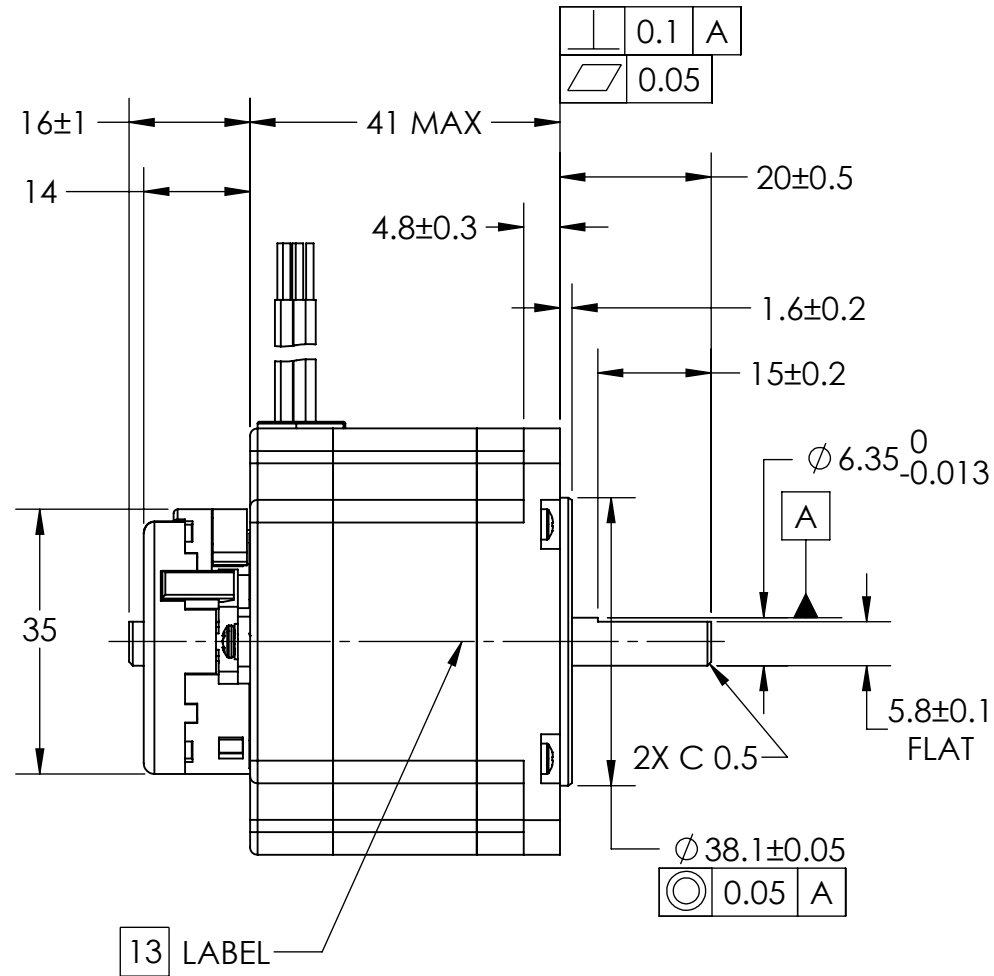
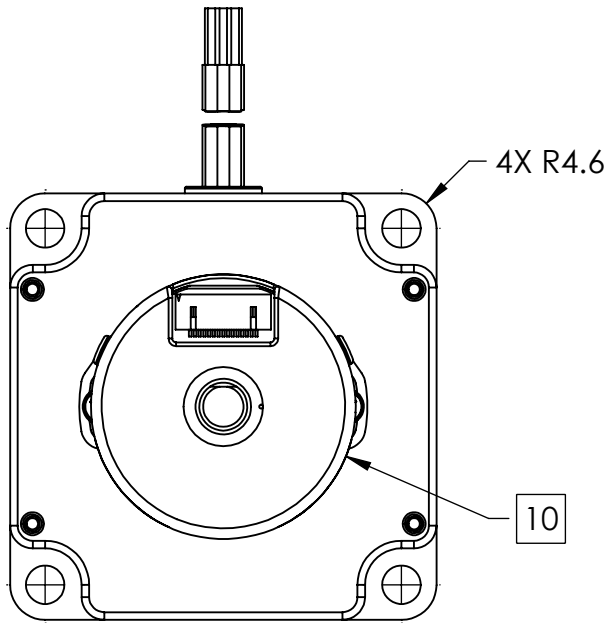
NAME	DATE
DRAWN	ALAN. N
CHECKED	YANN. L

COMMENTS:

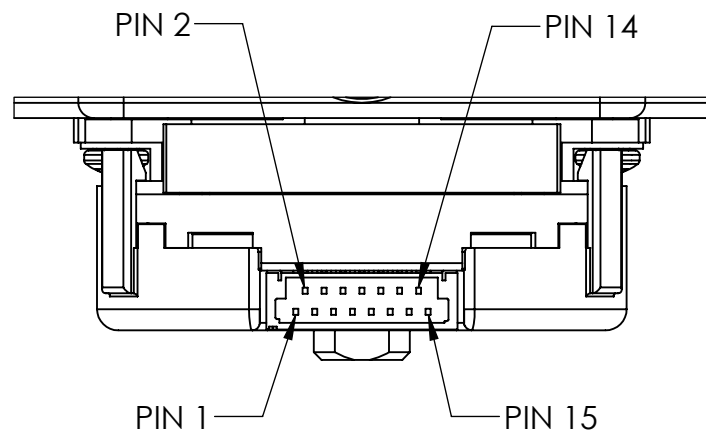
TITLE:
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## STEPPER MOTOR

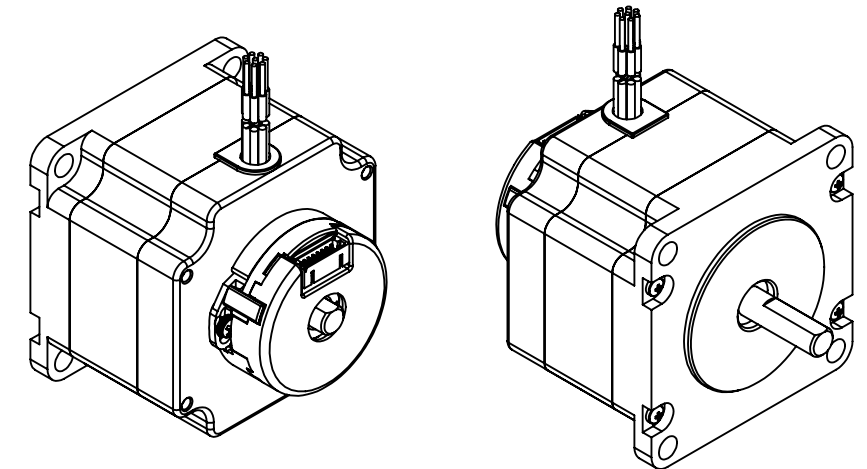
SIZE <b>B</b>	DWG. NO. HT23-594D-ZAA	REV <b>C</b>
SCALE: 1:1	WEIGHT:	SHEET 1 OF 2




ENCODER CONNECTIONS	
PIN NO:	SIGNAL
1	CH A+
2	CH A-
3	CH B+
4	CH B-
5	INDEX+
6	INDEX-
7	N/C
8	N/C
9	N/C
10	N/C
11	N/C
12	N/C
13	+VCC
14	GND
15	N/C



SCALE 2 : 1



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	DIMENSIONS ARE IN MILLIMETERS		DRAWN	ALAN. N	8/16/21			
	TOLERANCES: ANGULAR: ± 0.5 ONE PLACE DECIMAL ± 0.25 TWO PLACE DECIMAL ± 0.13 THIRD ANGLE PROJECTION		CHECKED	YANN. L	8/17/21			
	MATERIAL		COMMENTS:					
FINISH		SIZE		DWG. NO.			REV	
DO NOT SCALE DRAWING		B		HT23-594D-ZAA			C	
		SCALE: 1:1		WEIGHT:		SHEET 2 OF 2		