

## SPECIFICATIONS:

NUMBER OF PHASES: 4	ROTOR INERTIA: $750 \text{ g-cm}^2$ (4.09 oz-in <sup>2</sup> ) NOM
STEPS PER REVOLUTION: 200	DETENT TORQUE: 120 mN-m (16.99 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.
HYSERESIS: 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: 1500 G (3.3 LB) APPROXIMATE

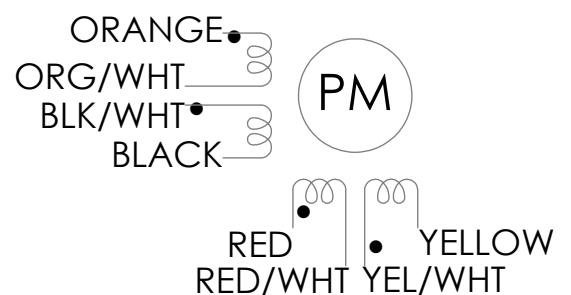
CONNECTION	RESISTANCE PER PHASE (ohm ±10%)	INDUCTANCE PER PHASE (mH ±20%)	RATED CURRENT (Amp)	HOLDING TORQUE (Nm MIN)	HOLDING TORQUE (oz-in)
BI-POLAR SERIES	2.0	8.8	2.5	2.5	354
BI-POLAR PARALLEL	0.5	2.2	5.0	2.5	354
UNI-POLAR	1.0	2.2	3.5	1.86	264

## 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°.
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 970-1028 INSTALLED PER AMP ASSEMBLY PRACTICES.  
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
7710	A	INITIAL RELEASE	9/27/17	J. KORDIK
8705	B	FRONT END BELL THICKNESS FROM 5+/-0.5 TO 4.8+/-0.3	8/23/21	L. LIU
8787	C	REVISED MODEL & UPDATED SHEET FORMAT	5/20/22	L. LIU

## 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

STEPPER MOTOR		
SIZE	DWG. NO.	REV
<b>B</b>	HT23-603D-CAA	<b>C</b>
DO NOT SCALE DRAWING	ALT SAP:	SCALE: 1:1
		SHEET 1 OF 2



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THE INFORMATION CONTAINED IN THIS  
DRAWING IS THE SOLE PROPERTY OF  
APPLIED MOTION PRODUCTS. ANY  
REPRODUCTION IN PART OR AS A WHOLE  
WITHOUT THE WRITTEN PERMISSION OF  
APPLIED MOTION PRODUCTS IS  
PROHIBITED.

THIRD ANGLE PROJECTION  
UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES:  
- ANGULAR: ± 0.5  
- ONE DECIMAL PLACE: ± 0.25  
- TWO DECIMAL PLACES: ± 0.13

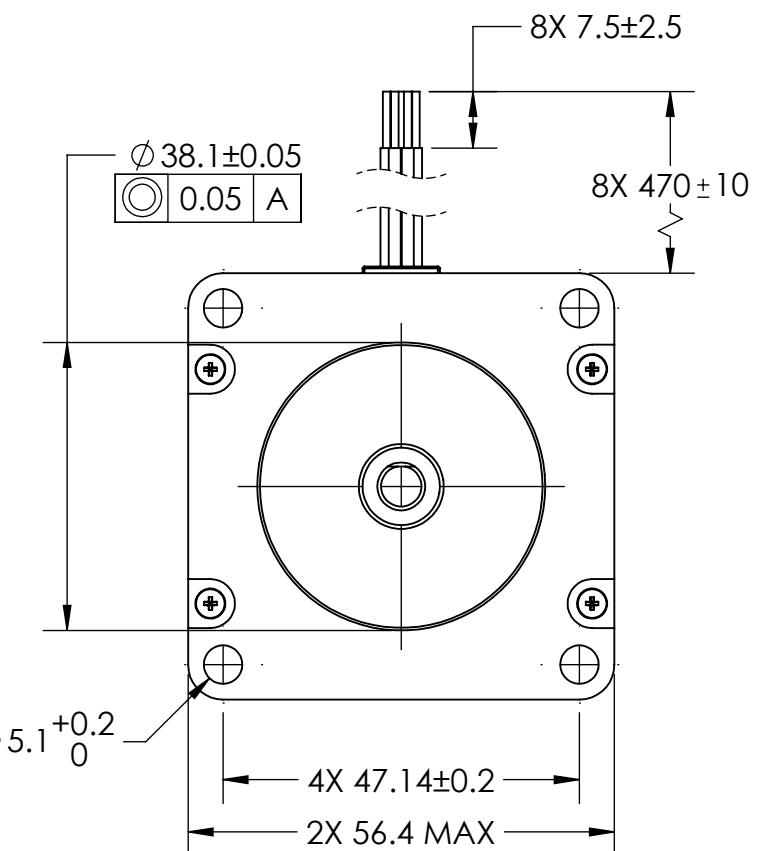
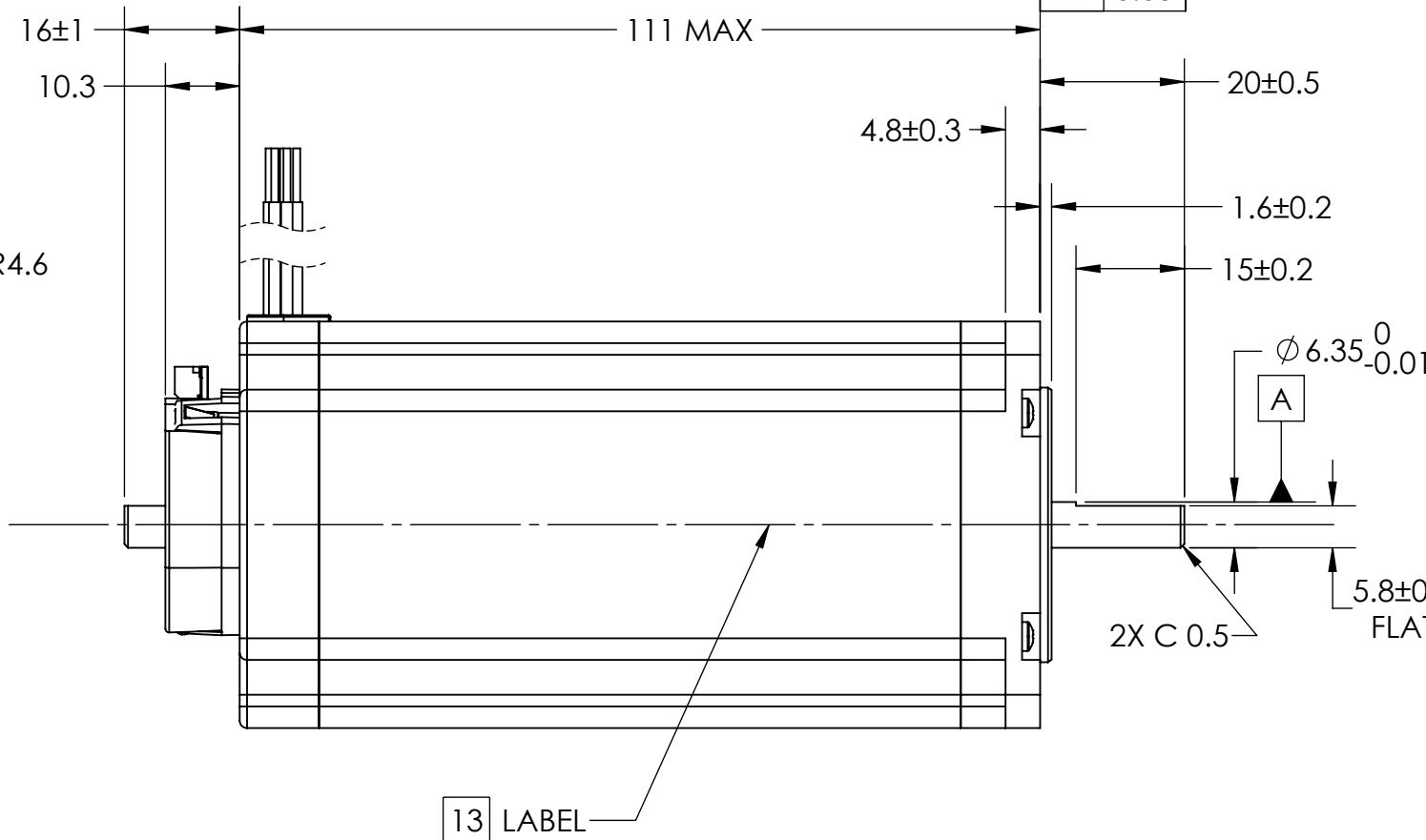
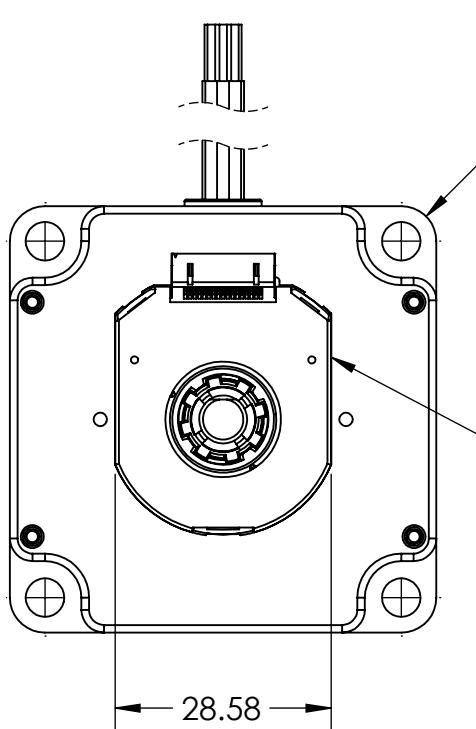
DRAWN Y. LAPNET 5/20/22  
PRE.CHECK  
PRE.APPROVAL  
FIN.CHECK C. BREUNINGER 5/20/22  
MATERIAL  
SAP: 4611110060913  
FINISH ALT DWG. NO.:  
DO NOT SCALE DRAWING ALT SAP:

4

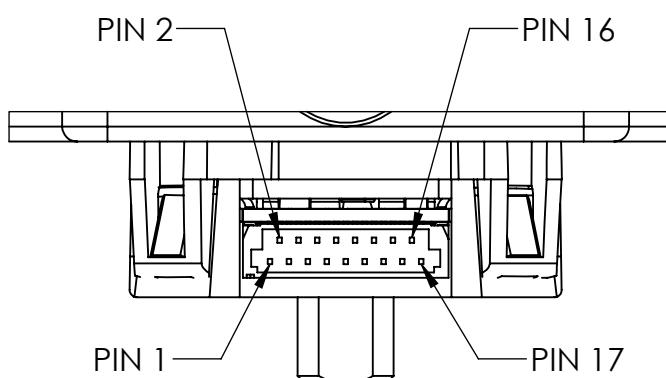
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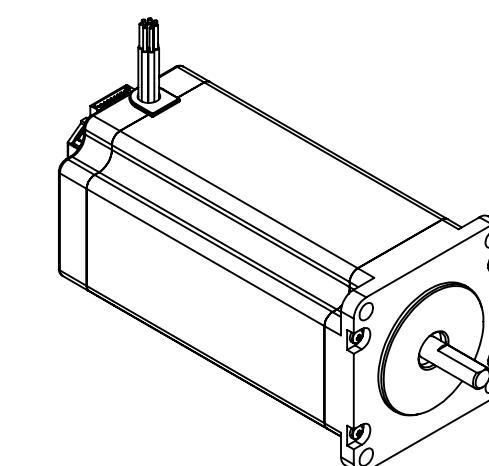
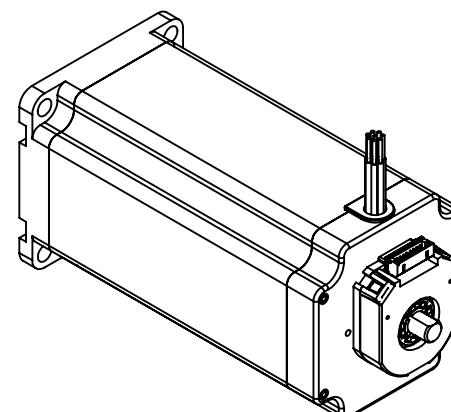
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ENCODER CONNECTIONS	
PIN NO:	SIGNAL
1	TX ENC+
2	RX ENC+
3	N/A
4	GND
5	N/A
6	+5 V
7	N/A
8	B+
9	B-
10	A+
11	A-
12	Z+
13	Z-
14	MCLR
15	N/A
16	N/A
17	N/A



SCALE 2 : 1



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THIRD ANGLE PROJECTION		NAME	DATE
UNLESS OTHERWISE SPECIFIED:		DRAWN	Y. LAPNET
DIMENSIONS ARE IN MILLIMETERS		PRE.CHECK	5/20/22
TOLERANCES:		PRE.APPROVAL	
- ANGULAR: ± 0.5		FIN.CHECK	
- ONE DECIMAL PLACE: ± 0.25		C. BREUNINGER	5/20/22
- TWO DECIMAL PLACES: ± 0.13		SAP: 4611110060913	
MATERIAL		ALT DWG. NO.:	
FINISH		DO NOT SCALE DRAWING	ALT SAP:

TITLE: STEPPER MOTOR		
SIZE	DWG. NO.	REV
<b>B</b>	HT23-603D-CAA	<b>C</b>
	SCALE: 1:2	SHEET 2 OF 2

4

3

2

1