

## SPECIFICATIONS:

|   |   |
|---|---|
| NUMBER OF PHASES: 4                           | ROTOR INERTIA: $260 \text{ g-cm}^2$ (1.422 oz-in <sup>2</sup> ) NOM                 |
| STEPS PER REVOLUTION: 200                     | DETENT TORQUE: $407.9 \text{ g-cm}$ (5.66 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. <span style="border: 1px solid black; padding: 2px;">9</span> |
| 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: 1110 G (39.15 oz) APPROXIMATE   |

| CONNECTION        | RESISTANCE PER PHASE (ohm ±10%) <span style="border: 1px solid black; padding: 2px;">7</span> | INDUCTANCE PER PHASE (mH ±20%) <span style="border: 1px solid black; padding: 2px;">8</span> | RATED CURRENT (Amp) | HOLDING TORQUE (Nm MIN) <span style="border: 1px solid black; padding: 2px;">1</span> | HOLDING TORQUE (oz-in) <span style="border: 1px solid black; padding: 2px;">1</span> |
|-------------------|---|--|---------------------|---|--|
| BI-POLAR SERIES   | 1.7   | 5.7  | 2.12                | 1.12  | 158.6  |
| BI-POLAR PARALLEL | 0.4   | 1.4  | 4.24                | 1.12  | 158.6  |
| UNI-POLAR         | 0.9   | 1.4  | 3.00                | 0.85  | 120.4  |

## 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. BRAKE ATTACHED TO REAR END OF MOTOR. TWO BREAK LEADS ARE 24 AWG, UL1332, RED="+".
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.

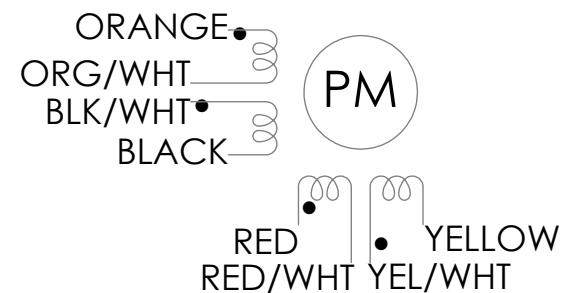
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## BRAKE SPECIFICATIONS

| VOLTAGE | CURRENT | POWER | TORQUE | MAX. SPEED | ENGAGE DELAY | DISENGAGE DELAY | INSULATION CLASS |
|---------|---------|-------|--------|------------|--------------|-----------------|------------------|
| 24 VDC  | 167 mA  | 4 W   | 1.5 Nm | 1000 RPM   | 50 ms        | 50 ms           | B                |

| REVISIONS |      |  |         |           |
|-----------|------|--|---------|-----------|
| ECO #     | REV. | DESCRIPTION                                  | DATE    | APPROVED  |
| 7462      | A    | INITIAL RELEASE                              | 8/9/16  | J. KORDIK |
| 7852      | B    | REVISED MOTOR WEIGHT                         | 3/1/18  | J. KORDIK |
| 8705      | C    | UPDATED SHAFT RUNOUT, WIRE AWG. END BELL THK | 8/23/21 | L. LIU    |
| 8787      | D    | 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>             | HT23-598B     | <b>D</b>     |
| FINISH               | ALT DWG. NO.: |              |
| DO NOT SCALE DRAWING | ALT SAP:      | SCALE: 1:1   |
|                      |               | SHEET 1 OF 2 |



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THIRD ANGLE PROJECTION  
UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES:  
- ANGULAR: ± 0.5  
- ONE DECIMAL PLACE: ± 0.25  
- TWO DECIMAL PLACES: ± 0.13  
MATERIAL  
SAP: 4611110060849  
FIN.CHECK C. BREUNINGER 5/20/22  
PRE.CHECK  
PRE.APPROVAL  
MATERIAL  
FINISH  
DO NOT SCALE DRAWING

NAME DATE  
Y. LAPNET 5/20/22  
ALT DWG. NO.:  
ALT SAP:

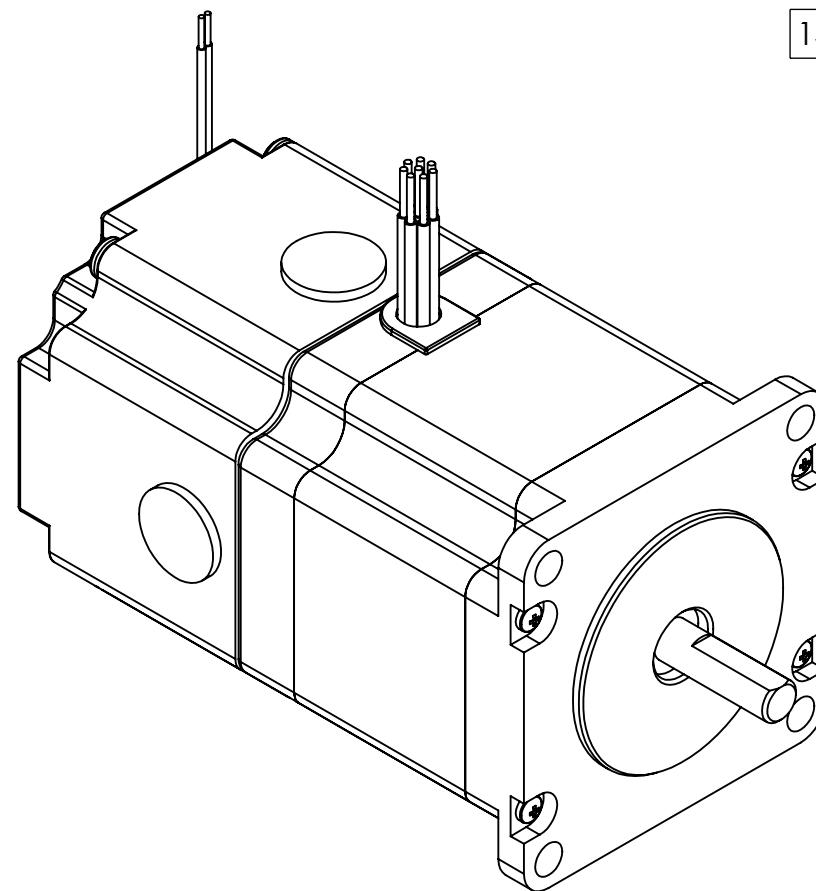
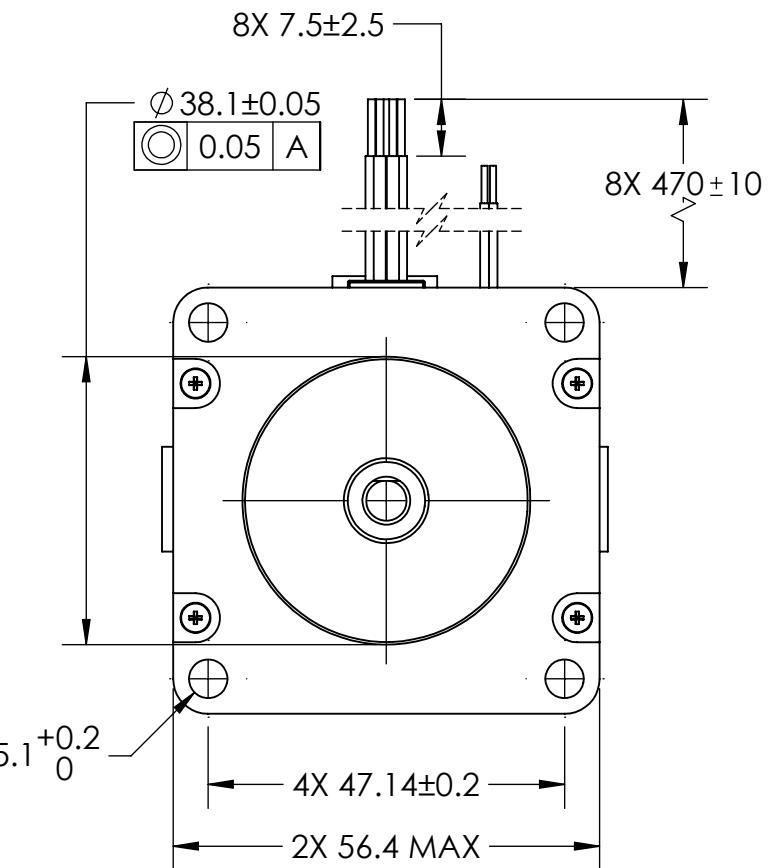
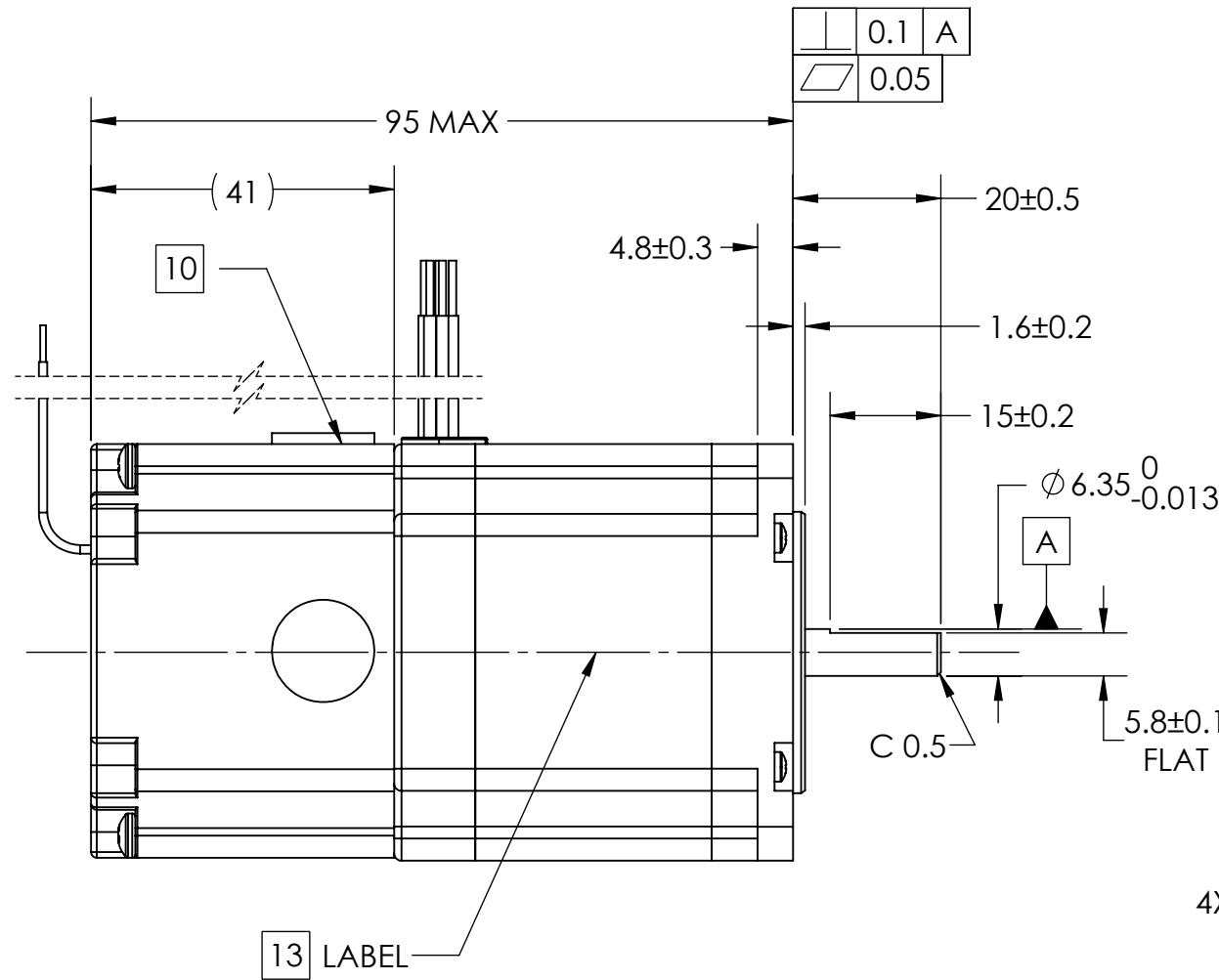
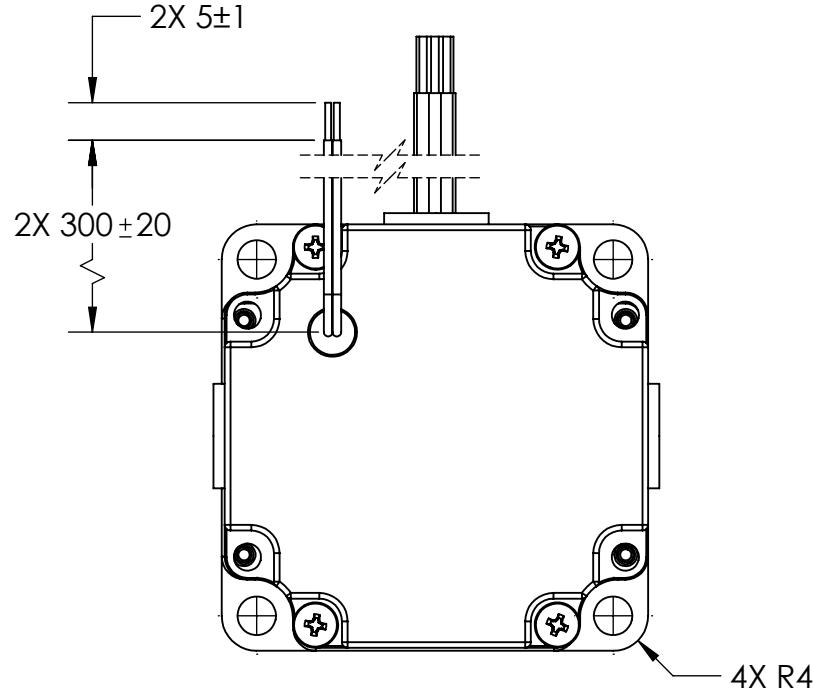
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B



**Applied  
Motion  
Products**  
A MOON'S COMPANY

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| THIRD ANGLE PROJECTION   |                    |               |
|--|--------------------|---------------|
| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS                                   | DRAWN              | Y. LAPNET     |
| TOLERANCES:<br>- ANGULAR: ± 0.5<br>- ONE DECIMAL PLACE: ± 0.25<br>- TWO DECIMAL PLACES: ± 0.13 | PRE.CHECK          | 5/20/22       |
| MATERIAL   | PRE.APPROVAL       |               |
|  | FIN.CHECK          | C. BREUNINGER |
|  |                    | 5/20/22       |
| FINISH   | SAP: 4611110060849 |               |
|  | ALT DWG. NO.:      |               |
| DO NOT SCALE DRAWING   | ALT SAP:           |               |

TITLE:  
**STEPPER MOTOR**

| SIZE       | DWG. NO.     | REV |
|------------|--------------|-----|
| <b>B</b>   | HT23-598B    | D   |
| SCALE: 1:2 | SHEET 2 OF 2 |     |

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