

## SPECIFICATION

|   |   |
|---|---|
| NUMBER OF PHASES: 4                           | ROTOR INERTIA: $123 \text{ g-cm}^2$ (0.67 oz-in $^2$ ) NOM                          |
| STEPS PER REVOLUTION: 200                     | DETENT TORQUE: 25 mNm (3.54 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: 600 g (21.1 oz) APPROXIMATE   |

| REVISIONS |      |                                       |         |          |
|-----------|------|---------------------------------------|---------|----------|
| ECO #     | REV. | DESCRIPTION                           | DATE    | APPROVED |
| 6517      | A    | INITIAL RELEASE                       | 5/8/12  | JEFF. K  |
| 6625      | B    | ADDED SPECS                           | 3/5/13  | JEFF. K  |
| 7247      | C    | ADD UL TO LABEL                       | 1/26/16 | JEFF. K  |
| 7446      | D    | REVISE NOTE 10                        | 6/6/16  | JEFF. K  |
| 8209      | E    | DOCUMENT CLEANUP                      | 4/22/19 | JEFF. K  |
| 8675      | F    | RE-DRAW IN SOLIDWORKS, MATCH 3D MODEL | 6/15/20 | LEO. L   |

B

B

| CONNECTION        | RESISTANCE PER PHASE (ohm $\pm 10\%$ ) <span style="border: 1px solid black; padding: 2px;">7</span> | INDUCTANCE PER PHASE (mH $\pm 20\%$ ) <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   | 6.4  | 12  | 1.0                 | 0.8   | 113.29   |
| BI-POLAR PARALLEL | 1.6  | 3.0   | 2.0                 | 0.8   | 113.29   |
| UNI-POLAR         | 3.2  | 3.0   | 1.4                 | 0.56  | 79.3   |

## NOTES, UNLESS OTHERWISE SPECIFIED:

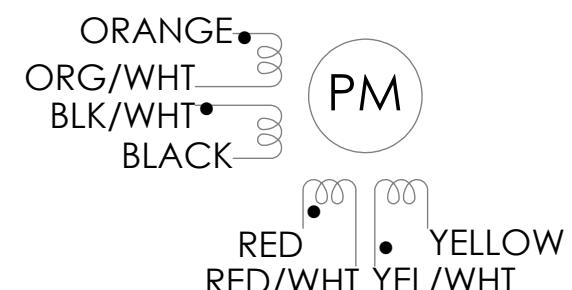
- 1 MEASUREMENTS MADE AT RATED CURRENT IN EACH PHASE.
- 2 BETWEEN ANY TWO ADJACENT FULL STEP POSITIONS.
- 3 MAXIMUM ERROR IN 360°.
4. HIPOT 500 VAC, 60Hz FOR ONE MINUTE.
- 5 LEADS: 8, 26 AWG, 7 STRAND MIN. UL AND CSA APPROVED. UL 1430 OR UL 3265
6. INSULATION RESISTANCE: 100 MEGOHMS MIN AT 500 VDC.
- 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 ADD "D" TO END OF PART NUMBER IF DOUBLE SHAFT IS REQUIRED.
11. DOUBLE SHAFT REQUIRES ADDED HOLES FOR ENCODER OPTION.
12. ROTOR AND STATOR LAMINATED CONSTRUCTION.
13. 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.

DRIVE SEQUENCE MODEL  
BI-POLAR PARALLEL FULL STEP

| STEP | ORG & BLK/WHT | BLK & ORG/WHT | RED & YEL/WHT | YEL & RED/WHT |
|------|---------------|---------------|---------------|---------------|
| 1    | +             | -             | +             | -             |
| 2    | -             | +             | +             | -             |
| 3    | -             | +             | -             | +             |
| 4    | +             | -             | -             | +             |
| 1    | +             | -             | +             | -             |

CW (CLOCKWISE) AND CCW (COUNTER-CLOCKWISE) ROTATION  
WHEN SEEN FROM THE FLANGE SIDE OF THE MOTOR

## WIRING DIAGRAM



PROPRIETARY AND CONFIDENTIAL  
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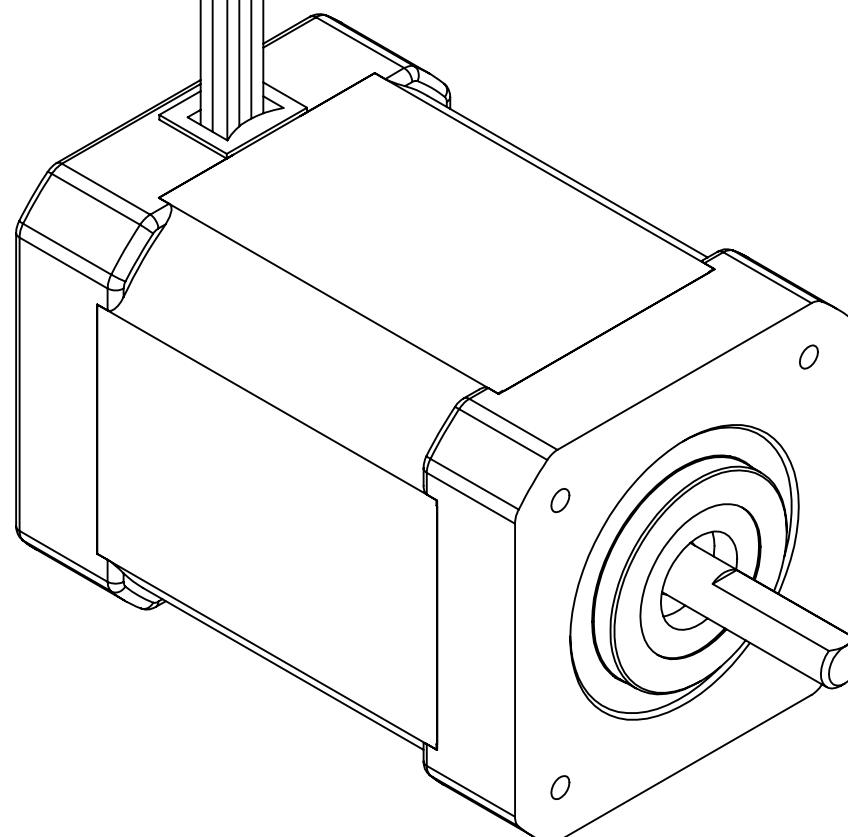
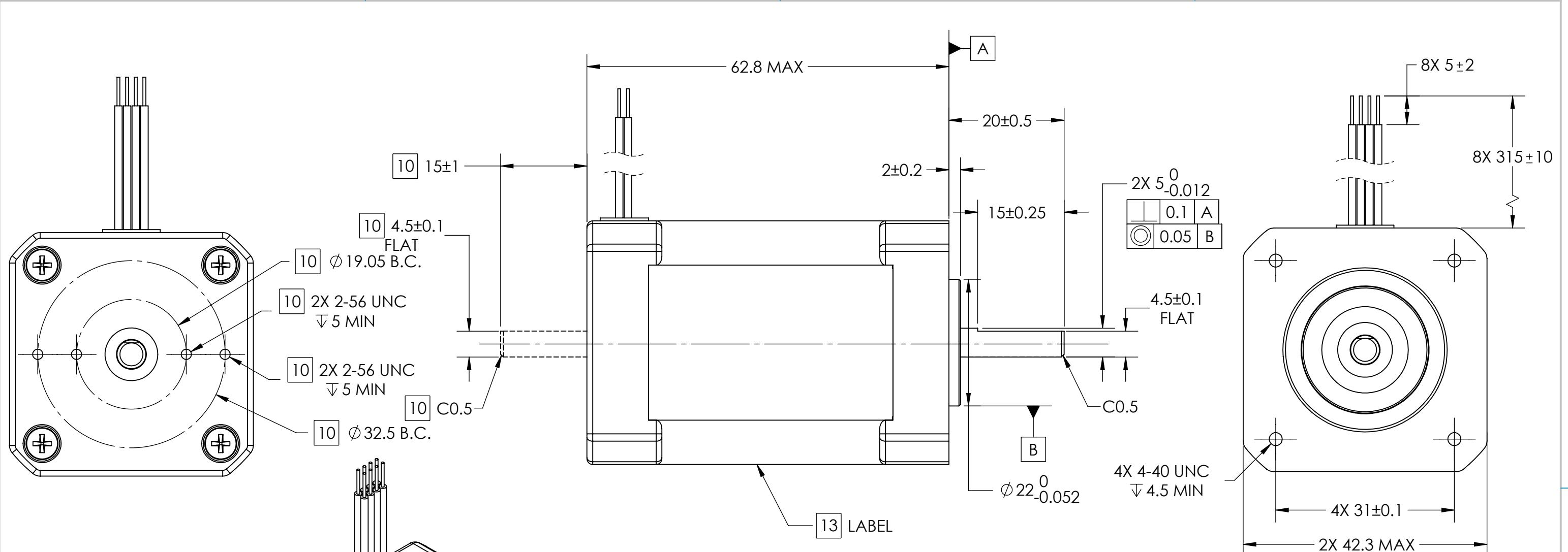
|   |         |              |  |
|---|---------|--------------|--|
| UNLESS OTHERWISE SPECIFIED:   | NAME    | DATE         | TITLE:<br><br>STEPPER MOTOR<br>OUTLINE |
| DIMENSIONS ARE IN MILLIMETERS   |         |              |  |
| TOLERANCES:<br>ANGULAR: $\pm 0.5$<br>ONE PLACE DECIMAL $\pm 0.25$<br>TWO PLACE DECIMAL $\pm 0.13$<br>THIRD ANGLE PROJECTION | DRAWN   | ALAN. N      |  |
| MATERIAL  | CHECKED | YANN. L      |  |
| FINISH  |         |              | COMMENTS:                              |
| DO NOT SCALE DRAWING  |         |              |  |
| SCALE: 1:1  | WEIGHT: | SHEET 1 OF 2 | SIZE DWG. NO. REV<br>B HT17-278 F      |

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| TWO PLACE DECIMAL $\pm 0.13$  |  |      |      |
| THIRD ANGLE PROJECTION        |  |      |      |
| COMMENTS:                     |  |      |      |
| MATERIAL                      |  |      |      |
| FINISH                        |  |      |      |
| DO NOT SCALE DRAWING          |  |      |      |

TITLE:  
STEPPER MOTOR  
OUTLINE

| SIZE       | DWG. NO. | REV          |
|------------|----------|--------------|
| <b>B</b>   | HT17-278 | F            |
| SCALE: 1:2 | WEIGHT:  | SHEET 2 OF 2 |

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