

**SPECIFICATIONS:**

|  |   |
|--|---|
| STEPS PER REVOLUTION: 200                    | ROTOR INERTIA: 4.0 G-CM <sup>2</sup> (21.9 OZ-IN <sup>2</sup> ) NOM |
| STEP ANGLE: 1.8°                             | HOLDING TORQUE: 122 Kg-cm (1694 OZ-IN) MIN [1]                      |
| STEP TO STEP ACCURACY: ±5 % [1], [2]         | DETENT TORQUE: 1.0 Kg-cm (13.8 OZ-IN) MIN                           |
| POSITIONAL ACCURACY: ±5 % [1], [3]           |   |
| HYSTERESIS: 5 %                              | INSULATION CLASS: B   |
| WINDING RESISTANCE: 1.08 OHM ±10% AT 25° [7] | BEARINGS: ABEC 3, DOUBLE SHIELDED                                   |
| WINDING INDUCTANCE: 9.6 mH ± 20% [7], [8]    |   |
| PHASE VOLTAGE: 4.5 VDC [7]                   | TEMP. RISE: 80 °C MAX. [9]  |
| PHASE CURRENT: 4.8 AMP [(RATED) SERIES] [12] | OPERATING TEMP. RANGE: -20 TO +50°C                                 |
|  | STORAGE TEMP. RANGE: -40 TO +70°C                                   |
| SHAFT RUNOUT: 0.05 T.I.R.                    | RELATIVE HUMIDITY RANGE: 5 TO 95 %                                  |
| RADIAL PLAY: 0.025 MAX W/A .5KG RADIAL LOAD  |   |
| END PLAY: 0.075 MAX W/A 1KG AXIAL LOAD       | WEIGHT: 5.39 KG (11.9 LB)   |
|  |   |
|  |   |

HT34-490

**REVISIONS**

| ECO NO. | REV | DESCRIPTION             | DATE     | APPROVED     |
|---------|-----|-------------------------|----------|--------------|
| 5194    | A   | INITIAL RELEASE         | 2/25/05  | R. HAZELWOOD |
| 5205    | B   | Cable assy changed      | 4/5/05   | R. HAZELWOOD |
| 5208    | C   | NOTE 5 AND 16 CHANGE    |          |              |
| 5219    | D   | SPEC CHANGES            | 6-9-05   | R. HAZELWOOD |
| 5221    | E   | SPEC CHANGES            | 8-12-05  | R. HAZELWOOD |
| 5235    | F   | ADD EU COMPLIANCE NOTES | 09/01/05 | R. Hazelwood |
| 5242    | E   | SPEC CHANGES            | 9/22/05  | R. HAZELWOOD |
|         |     |                         |          |              |
|         |     |                         |          |              |
|         |     |                         |          |              |
|         |     |                         |          |              |

**NOTES, UNLESS OTHERWISE SPECIFIED:**

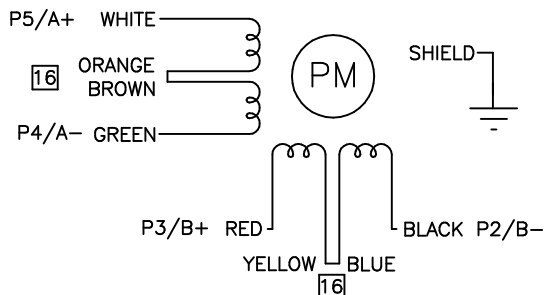
- [1] MEASUREMENTS MADE AT RATED CURRENT IN EACH PHASE.
- [2] BETWEEN ANY TWO ADJACENT STEP POSITIONS.
- [3] MAXIMUM ERROR IN 360°.
- 4. HIPOT 500 VAC, 60 Hz FOR ONE MINUTE.
- [5] CABLE ASSY: 3004 196 (8 CORE, 22 AWG)
- 6. INSULATION RESISTANCE: 100 MEGOHMS MIN AT 500 VDC.
- [7] AS MEASURED ACROSS ANY WINDINGS CONNECTED IN SERIES, WITHOUT CABLE. (WITH CABLE = 1.7 OHMS)
- [8] AS MEASURED ACROSS ANY WINDING USING AN A.C. INDUCTANCE BRIDGE, AT 1KHZ, WITHOUT CABLE.
- [9] AS MEASURED BY THE CHANGE IN RESISTANCE METHOD, WITH RATED VOLTAGE APPLIED TO 2 PHASES; WITH MOTOR AT REST.
- 10. HIGH TORQUE MOTOR DESIGN.
- 11. ROTOR & STATOR LAMINATED CONSTRUCTION.
- [12] POWER SUPPLY VOLTAGE TO AMPLIFIER 80V OR LESS. IF GREATER THAN 80 VOLTS RATED CURRENT IS 4.5 AMPS, SERIES CONNECTED, W/50% DUTY CYCLE. (MOTOR MAY BE LEFT ENERGIZED AT 50% CURRENT BETWEEN CYCLES.) CURRENT RATING WITH STAC-6 = 5.8 A)
- [13] ADD "D" TO END OF PART NUMBER IF DOUBLE SHAFT IS REQUIRED.
- [14] SHIELD WIRE TO BE CONNECTED TO INSIDE OF REAR ENDBELL
- [15] RUBBER GROMMET & STRAIN RELIEF MOUNT ON LEAD EXIT. AFTER INSTALATION OF STRAIN RELIEF, SLIDE HEAT SHRINK OVER GROMMET & APPLY HEAT.


- [16] SOLDER CENTER TAP WIRES TOGETHER, WRAP WITH HEAT SHRINK AND CONCEAL WITHIN BOOT.
- 17 SEE SEPERATE BOM FOR PARTS LISTING.
- 18. THIS MOTOR TO BE MANUFACTURED IN COMPLIANCE WITH EU DIRECTIVE "ROHS 2002/95/EC".
- 19. MOTOR LABEL TO INCLUDE "ROHS" COMPLIANT.

**SERIES CONNECTION**

SWITCHING SEQUENCE FOR CW ROTATION FACING MOUNTING END

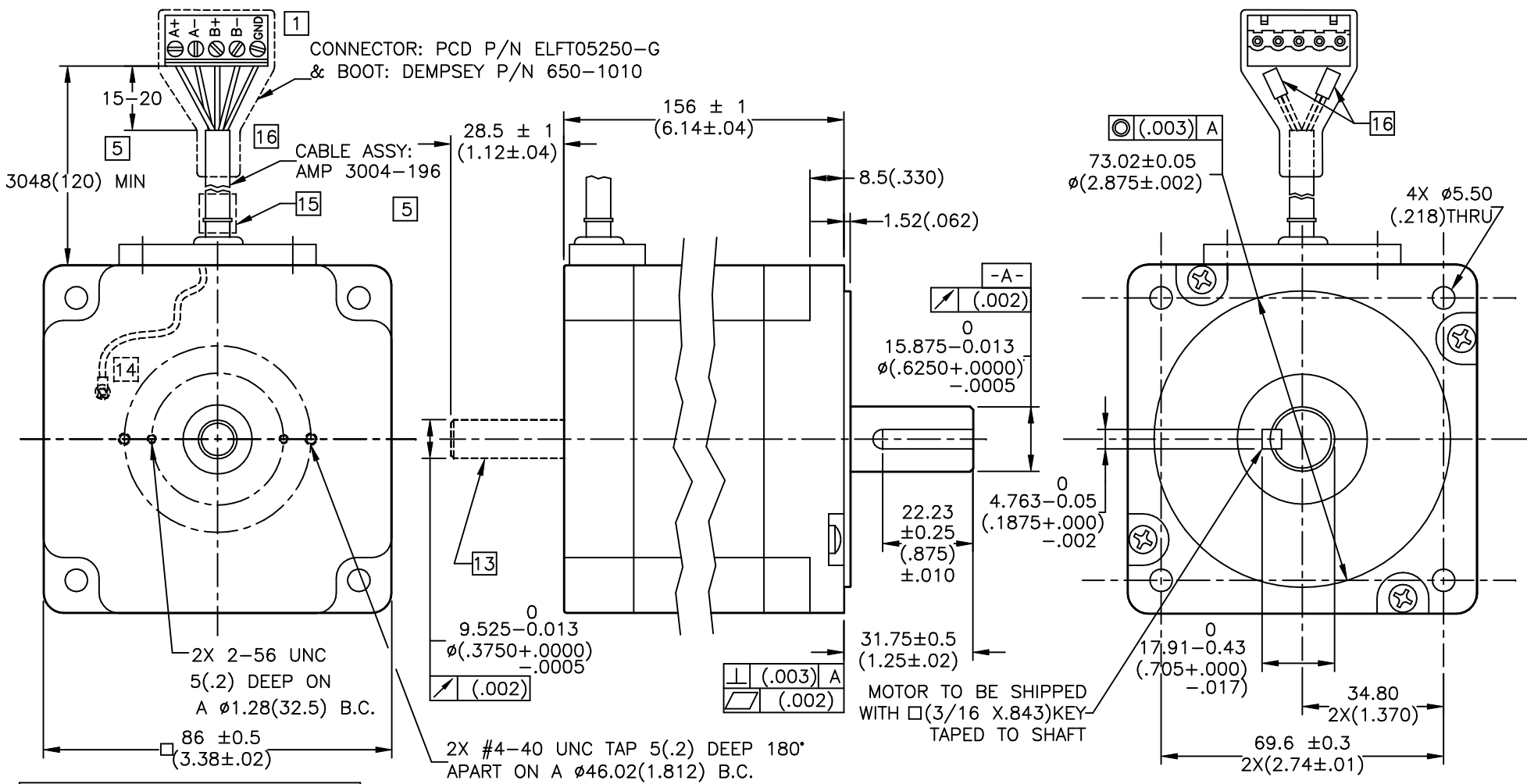
| STEP | WHITE/A+ | GREEN/A- | RED/B+ | BLACK/B- |
|------|----------|----------|--------|----------|
| 0    | +        | -        | +      | -        |
| 1    | -        | +        | +      | -        |
| 2    | -        | +        | -      | +        |
| 3    | +        | -        | -      | +        |
| 4    | +        | -        | +      | -        |



|                              |         |  |                               |                            |                 |
|------------------------------|---------|--|-------------------------------|----------------------------|-----------------|
| CONTRACT NO.                 |         |  <b>APPLIED MOTION PRODUCTS, INC.</b> |                               |                            |                 |
| APPROVALS                    | DATE    | <h2>STEP MOTOR OUTLINE</h2>  |                               |                            |                 |
| DRAWN <i>S.ARNOLD</i>        | 2/25/05 |  |                               |                            |                 |
| CHECKED <i>R. HAZELWOOD</i>  | 2/25/05 |  |                               |                            |                 |
| APPROVED <i>R. HAZELWOOD</i> | 2/25/05 |  |                               |                            |                 |
| APPROVED                     |         | B  | COMPUTER DATA<br>BASE DRAWING | DWG NO.<br><b>HT34-490</b> | REV<br><b>G</b> |
| SCALE: NTS                   |         | SHEET 1 OF 2   |                               |                            |                 |

5 4 3 2 1 ← PIN SEQUENCE

SEE SHEET 1 FOR REVISIONS



| CONNECTION CHART |                |                  |
|------------------|----------------|------------------|
| PIN              | CONNECTOR      | LEAD COLOR       |
| 1                | GRND           | SHIELD           |
| 2                | B-             | BLACK            |
| 3                | B+             | RED              |
| 4                | A-             | GREEN            |
| 5                | A+             | WHITE            |
| YELLOW/<br>BLUE  | SEE NOTE<br>16 | ORANGE/<br>BROWN |

SINGLE/DOUBLE SHAFT VERSION

| TOLERANCES   | THIRD ANGLE PROJECTION                    |
|--|---|
| DECIMALS: MM (INCH)<br>X.XXX = ±0.01 (.005)<br>X.XX = ±0.10 (.010)<br>X.X = ±0.20 (.020) |   |
| ANGLES:<br>MACH. = ±.5°<br>CHAM. = ±5°   | APPROVALS: <i>S.ARNOLD</i> DATE: 2/25/05  |
| COMPUTER DATA<br>BASE DRAWING  | CHECKED: <i>R. JAGGERS</i> DATE: 2/25/05  |
|  | APPROVED: <i>R. JAGGERS</i> DATE: 2/25/05 |

APPLIED MOTION PRODUCTS, INC.

## STEP MOTOR OUTLINE

|             |                  |              |
|-------------|------------------|--------------|
| B           | DWG NO. HT34-490 | REV G        |
| SCALE: FULL |                  | SHEET 2 OF 2 |