

**SPECIFICATIONS:**

STEPS PER REVOLUTION: 200	ROTOR INERTIA: 480 G-CM <sup>2</sup> (2.62 OZ-IN <sup>2</sup> ) NOM
STEP ANGLE: 1.8°	HOLDING TORQUE: 13.5KG-CM (187 OZ-IN) MIN <sup>1</sup>
STEP TO STEP ACCURACY: ± 5 % <sup>1</sup> , <sup>2</sup>	DETENT TORQUE: 800 G-CM (11.11 OZ-IN) MIN
POSITIONAL ACCURACY: ± 5 % <sup>1</sup> , <sup>3</sup>	
HYSTERESIS: %	INSULATION CLASS: B
WINDING RESISTANCE: 8.2 OHM ±10% AT 25° <sup>7</sup>	BEARINGS: ABEC 3, DOUBLE SHIELDED
WINDING INDUCTANCE: 14 mH ± 20% <sup>8</sup>	WEIGHT: 1.0 KG (2.2 LB)
PHASE VOLTAGE: 8.2 VDC	TEMP. RISE: 80 °C MAX. <sup>9</sup>
PHASE CURRENT: 1.0 AMP [(RATED) UNIPOLAR]	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.	

HT23-399

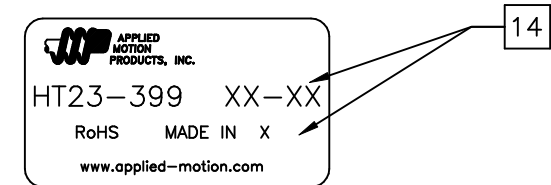
**REVISIONS**

ECO NO.	REV	DESCRIPTION	DATE	APPROVED
3987	A	INITIAL RELEASE	8/16/96	<i>H. Nordik</i>
5007	B	ADD "23HT39D" IF DBL SHFT		
5235	C	ADD EU COMPLIANCE NOTES	8/25/05	<i>B. Hazelwood</i>
6006	D	ADD ENV DRAWING/ ENC HOLES	10/20/09	J KORDIK
6090	E	STANDARDIZE ENCODER HOLES	3/29/10	J KORDIK

NOTES, UNLESS OTHERWISE SPECIFIED:

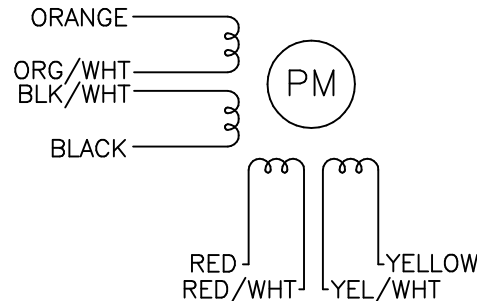
- <sup>1</sup> MEASUREMENTS MADE AT RATED CURRENT IN EACH PHASE.
- <sup>2</sup> BETWEEN ANY TWO ADJACENT STEP POSITIONS.
- <sup>3</sup> MAXIMUM ERROR IN 360°.
- 4. HIPOT 500 VAC, 60 Hz FOR ONE MINUTE.
- <sup>5</sup> LEADS: 8 AWG 22,7 STRAND MIN., UL AND CSA APPROVED, UL 3265.
- 6. INSULATION RESISTANCE: 100 MEGOHMS MIN AT 500 VDC.
- <sup>7</sup> AS MEASURED ACROSS ANY WINDING. RESISTANCE IS DOUBLED WITH BOTH WINDINGS IN SERIES.
- <sup>8</sup> AS MEASURED ACROSS ANY WINDING USING AN A.C. INDUCTANCE BRIDGE, AT 1KHz. INDUCTANCE IS FOUR TIMES VALUE WITH WINDINGS IN SREIES.
- <sup>9</sup> AS MEASURED BY THE CHANGE IN RESISTANCE METHOD, WITH RATED VOLTAGE APPLIED TO 2 PHASES; WITH MOTOR AT REST.
- 10. HIGH TORQUE MOTOR DESIGN, MICROSTEP LAMINATION.
- 11. ROTOR & STATOR LAMINATION MATERIAL: 0.5mm thk, SEE AMP STD SPEC #1500-062.
- <sup>12</sup> SHAFT OPTION: IF DOUBLE SHAFT REQUIRED ADD "D" TO END OF PART NUMBER. DOUBLE SHAFT REQUIRES ADDED HOLES FOR ENCODER OPTIONS.
- 13. THIS MOTOR TO BE MANUFACTURED IN COMPLIANCE WITH EU DIRECTIVE "ROHS 2002/95/EC".
- <sup>14</sup> MOTOR LABEL TO INCLUDE "ROHS" COMPLIANT, 'MADE IN (COUNTRY OF ORIGIN)' AND DATE CODE.

LABEL DETAIL

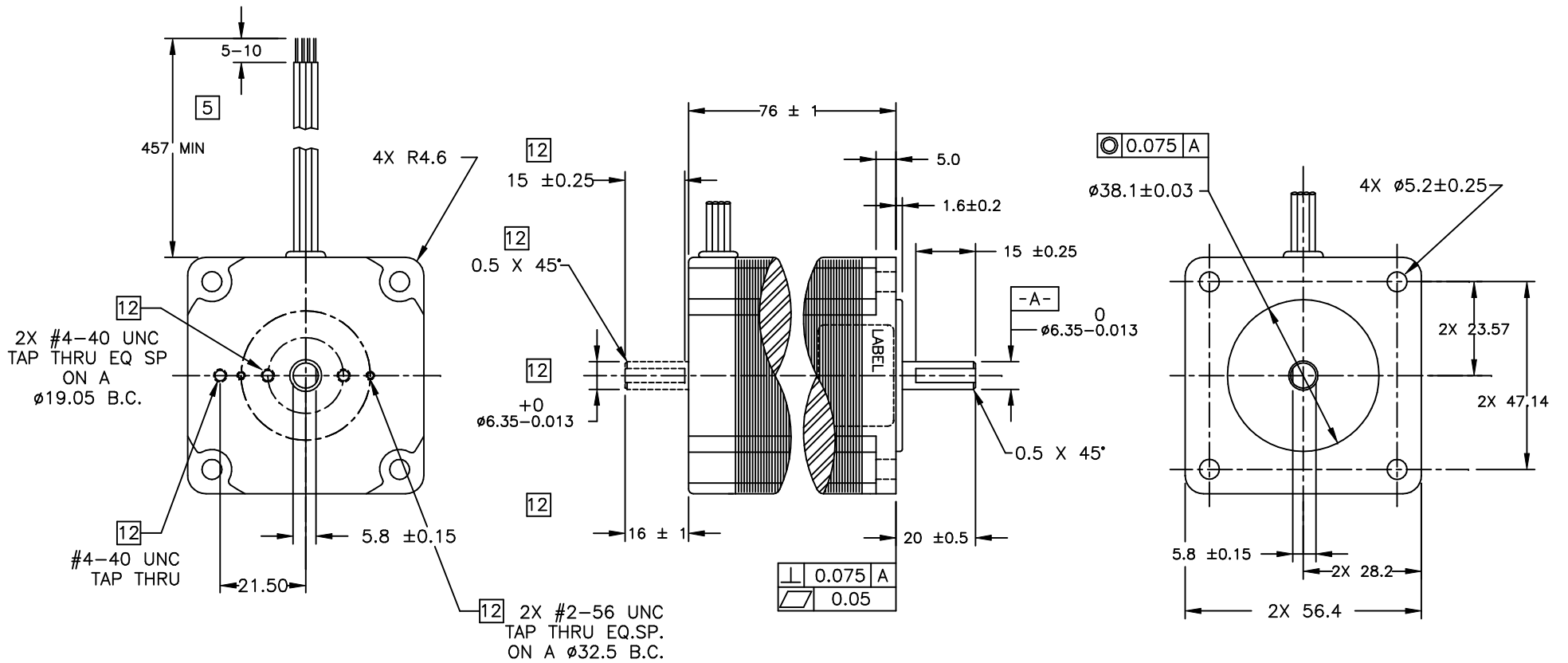


SWITCHING SEQUENCE FOR CW ROTATION  
FACING MOUNTING END

STEP	ORANGE	BLACK	RED	YELLOW
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-



CONTRACT NO. CAT TS3653N3E7		APPLIED MOTION PRODUCTS, INC.		
APPROVALS	DATE	<b>STEP MOTOR OUTLINE</b>		
DRAWN <i>R. BARRICK</i>	8/15/96			
CHECKED <i>B. Corser</i>	8/16/96			
APPROVED <i>H. Nordik</i>	8/16/96			
APPROVED		<b>B</b>	COMPUTER DATA BASE DRAWING	DWG NO. HT23-399
SCALE: 1=1				REV <b>E</b>
				SHEET 1 OF 2



TOLERANCES	THIRD ANGLE PROJECTION		APPLIED MOTION PRODUCTS, INC.	
DECIMALS: MM (INCH)			<b>STEP MOTOR OUTLINE</b>	
X.XXX = ± (.005)				
X.XX = ± 0.13 (.010)	APPROVALS	DATE	<b>B</b> DWG NO. <b>HT23-399</b>	REV
X.X = ± 0.25 (.020)	DRAWN <i>R. BARRICK</i>	10/13/09		E
ANGLES:	CHECKED		SCALE: NONE	SHEET 2 OF 2
MACH. = ±.5°	APPROVED			
CHAM. = ±5°				
COMPUTER DATA BASE DRAWING				

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