

| MOTOR SPECIFICATIONS: | GEARMOTOR SPECIFICATIONS: |
|---|---|
| NUMBER OF PHASES: 2 | TEMP. RISE: 80°C MAX. [6] |
| STEPS PER REVOLUTION: 200 | OPERATING AMB. TEMP. RANGE: -20 TO +50 °C |
| STEP ANGLE: 1.8° | STORAGE TEMP. RANGE: -20 TO +70 °C |
| RATED CURRENT: 1.0 A | RELATIVE HUMIDITY: 85% MAX NON-CONDENSING |
| RESISTANCE PER PHASE: 1.4 Ohms [4] | |
| INDUCTANCE PER PHASE: 1.3 mH [5] | |
| ROTOR INERTIA: 9 g-cm ² (0.05 oz-in ²)NOM | |
| HOLDING TORQUE 0.05 Nm (7.08 oz-in)NOM | |
| INSULATION CLASS: B (130°C) | |
| BEARINGS: ABEC 3, DOUBLE SHIELDED, NS7 GREASE | |

| REVISIONS | | | | |
|-----------|-----|-----------------|--------|----------|
| ECO NO. | REV | DESCRIPTION | DATE | APPROVED |
| 7935 | A | INITIAL RELEASE | 7/2/18 | J.KORDIK |
| 8429 | B | TYPO CORRECTION | 3/3/20 | J.KORDIK |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |

NOTES, UNLESS OTHERWISE SPECIFIED:

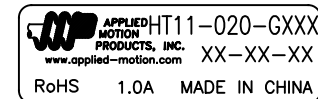
- HIPOT 500 VAC, 60 Hz FOR ONE MINUTE.
- LEADS: 4, AWG 26, 7 STRAND MIN., UL AND CSA APPROVED, UL 1007
- INSULATION RESISTANCE: 100 MEGOHMS MIN AT 500 VDC.
- [4] AS MEASURED ACROSS EACH PHASE.
- [5] AS MEASURED ACROSS EACH PHASE USING AN A.C. INDUCTANCE BRIDGE AT 1 KHz.
- [6] AS MEASURED BY THE CHANGE IN RESISTANCE METHOD, WITH RATED CURRENT APPLIED TO 2 PHASES; WITH MOTOR AT REST.
- THIS MOTOR IS MANUFACTURED IN COMPLIANCE WITH THE CURRENT EU RoHS DIRECTIVE.
- [8] MOTOR LABEL TO INCLUDE "ROHS" COMPLIANT, AMP P/N, 'MADE IN (COUNTRY OF ORIGIN)', AND DATE CODE.
- ALL MOTOR SPECIFICATIONS AND OPERATING INSTRUCTIONS CAN BE FOUND AT APPLIED-MOTION.COM.
- [10] SHAFT OPTION: IF DOUBLE SHAFT REQUIRED ADD "D" TO END OF PART NUMBER. DOUBLE SHAFT REQUIRES ADDED HOLES FOR ENCODER OPTION.

Sold & Serviced By:

Canadian and International Sales
 **ELECTROMATE**
 877-737-8698
 sales@electromate.com
 www.electromate.com

U.S. Sales
 **SERVO2GO.com**
 877-378-0240
 sales@servo2go.com
 www.servo2go.com

LABEL DETAIL

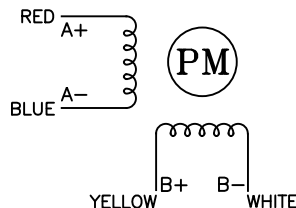



[8]

SWITCHING SEQUENCE FOR CW ROTATION
 FACING MOUNTING END

| STEP | RED | BLUE | YELLOW | WHITE |
|------|-----|------|--------|-------|
| 0 | + | - | + | - |
| 1 | - | + | + | - |
| 2 | - | + | - | + |
| 3 | + | - | - | + |
| 4 | + | - | + | - |

CW
↓



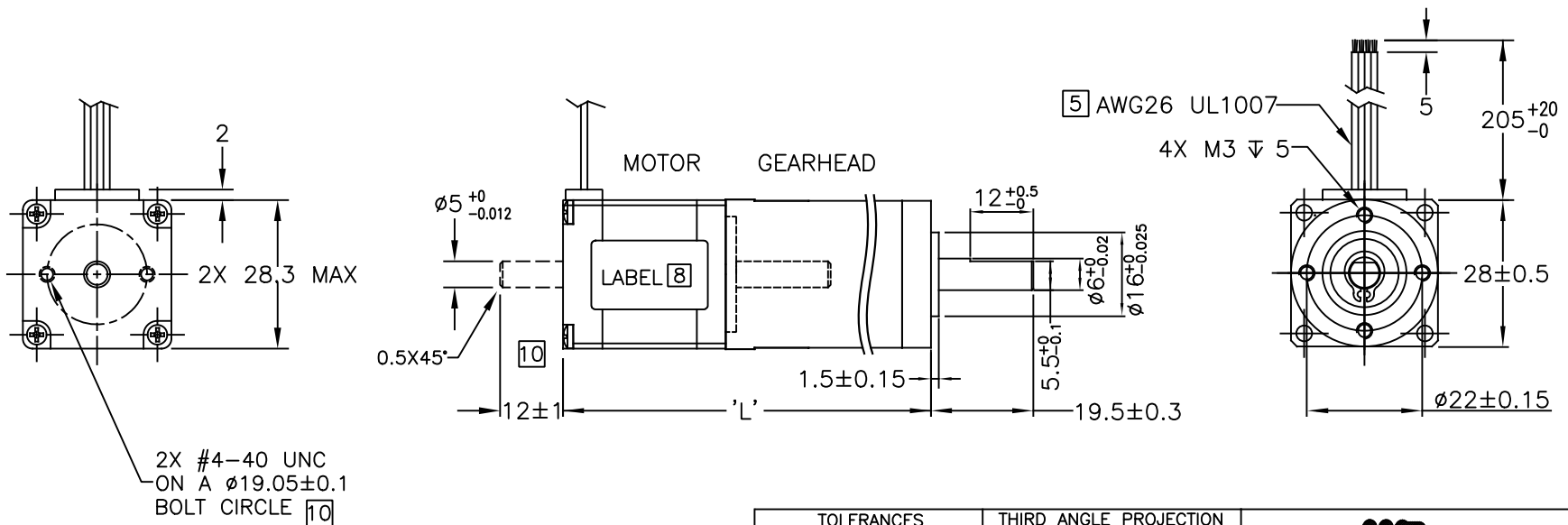
| | | | | |
|-------------------|----------|---|----------------------------|-----------------------------|
| CONTRACT NO. - | |  APPLIED MOTION PRODUCTS, INC. | | |
| APPROVALS | DATE | STEP MOTOR WITH GEARHEAD ASSEMBLY - SPECIFICATIONS | | |
| DRAWN R.JONEZ | 06/21/18 | | | |
| CHECKED | - | | | |
| APPROVED | - | B | COMPUTER DATA BASE DRAWING | DWG NO. HT11-020-GXXX REV B |
| APPROVED | - | SCALE: NONE | | SHEET 1 OF 2 |

GEARMOTOR TECHNICAL DETAILS:

| | | | | | |
|-------------------------------|--------------------|--------------------|-------------------|-------------------|-------------------|
| ASSEMBLY P/N | HT11-020-G004 | HT11-020-G005 | HT11-020-G012 | HT11-020-G014 | HT11-020-G022 |
| TOTAL WEIGHT-MOTOR & GEARHEAD | 150 g (0.33 lbs) | 150 g (0.33 lbs) | 165 g (0.36 lbs) | 165 g (0.36 lbs) | 165 g (0.36 lbs) |
| ASSEMBLY LENGTH - TOTAL 'L' | 70.6 mm (2.78 in) | 72.8 mm (2.87 in) | 73.1mm (2.88 in) | 73.1mm (2.88 in) | 80.6 mm (* in) |

GEARHEAD TECHNICAL DETAILS:

| | | | | | |
|-----------------------|---|---|---|---|---|
| GEARHEAD P/N | 28PH004.00-L1 | 28PH005.50-L1 | 28PH012.76-L1 | 28PH014.29-L1 | 28PH022.00-L1 |
| RATIO | 4:1 | 5.5:1 | 12.76:1 | 14.29:1 | 22.01:1 |
| MAX TORQUE CONTINUOUS | 0.5 Nm (70.80 oz-in) | 0.5 Nm (70.80 oz-in) | 2.0 Nm (283.22 oz-in) | 2.0 Nm (283.22 oz-in) | 2.0 Nm (283.22 oz-in) |
| MAX TORQUE | 0.8 Nm (113.3 oz-in) | 0.8 Nm (113.3 oz-in) | 4.0 Nm (566.45 oz-in) | 4.0 Nm (566.45 oz-in) | 4.0 Nm (566.45 oz-in) |
| MAX RADIAL LOAD | ≤ 20 N (4.5 lbs) | ≤ 10 N (2.25 lbs) | ≤ 20 N (4.5 lbs) | ≤ 20 N (4.5 lbs) | ≤ 2.0 N (4.5 lbs) |
| MAX AXIAL LOAD | ≤ 20 N (4.5 lbs) | ≤ 10 N (2.25 lbs) | ≤ 20 N (4.5 lbs) | ≤ 20 N (4.5 lbs) | ≤ 2.0 N (4.5 lbs) |
| INERTIA | 1.0 g-cm ² (0.005oz-in ²) | 1.0 g-cm ² (0.005oz-in ²) | 0.6 g-cm ² (0.003oz-in ²) | 0.6 g-cm ² (0.003oz-in ²) | 0.6 g-cm ² (0.003oz-in ²) |
| BACKLASH | ≤ 1.2 ° | ≤ 1.2 ° | ≤ 1.8 ° | ≤ 1.8 ° | ≤ 1.8 ° |
| EFFICIENCY | 90 % | 90 % | 81 % | 81 % | 81 % |



| MATERIAL SPECIFICATIONS | |
|-------------------------|---------------------|
| GEARTRAIN | Y15 (1213) STEEL |
| HOUSING | 304 STAINLESS STEEL |
| INPUT/OUTPUT FLANGE | LY12 ALUMINUM |
| OUTPUT SHAFT | 40Cr STEEL |
| PINION | Y15 (1213) STEEL |

| TOLERANCES | | THIRD ANGLE PROJECTION | |
|----------------------------|---------|------------------------|--|
| *ALL DIMENSIONS IN MM | | | |
| DECIMALS: MM | | | |
| X.XX = ±0.13 | | | |
| X.X = ±0.25 | | | |
| ANGLES: | | | |
| MACH. = ±0.5° | | | |
| CHAM. = ±5° | | | |
| COMPUTER DATA BASE DRAWING | | | |
| APPROVALS | DATE | | |
| DRAWN R. JONEZ | 6/21/18 | | |
| CHECKED | - | | |
| APPROVED | - | | |

APPLIED MOTION PRODUCTS, INC.

STEP MOTOR WITH GEARHEAD ASSEMBLY - OUTLINE DRAWING

| | | | | |
|---|-------------|---------------|-----|---|
| B | DWG NO. | HT11-020-GXXX | REV | B |
| | SCALE: NONE | SHEET 2 OF 2 | | |