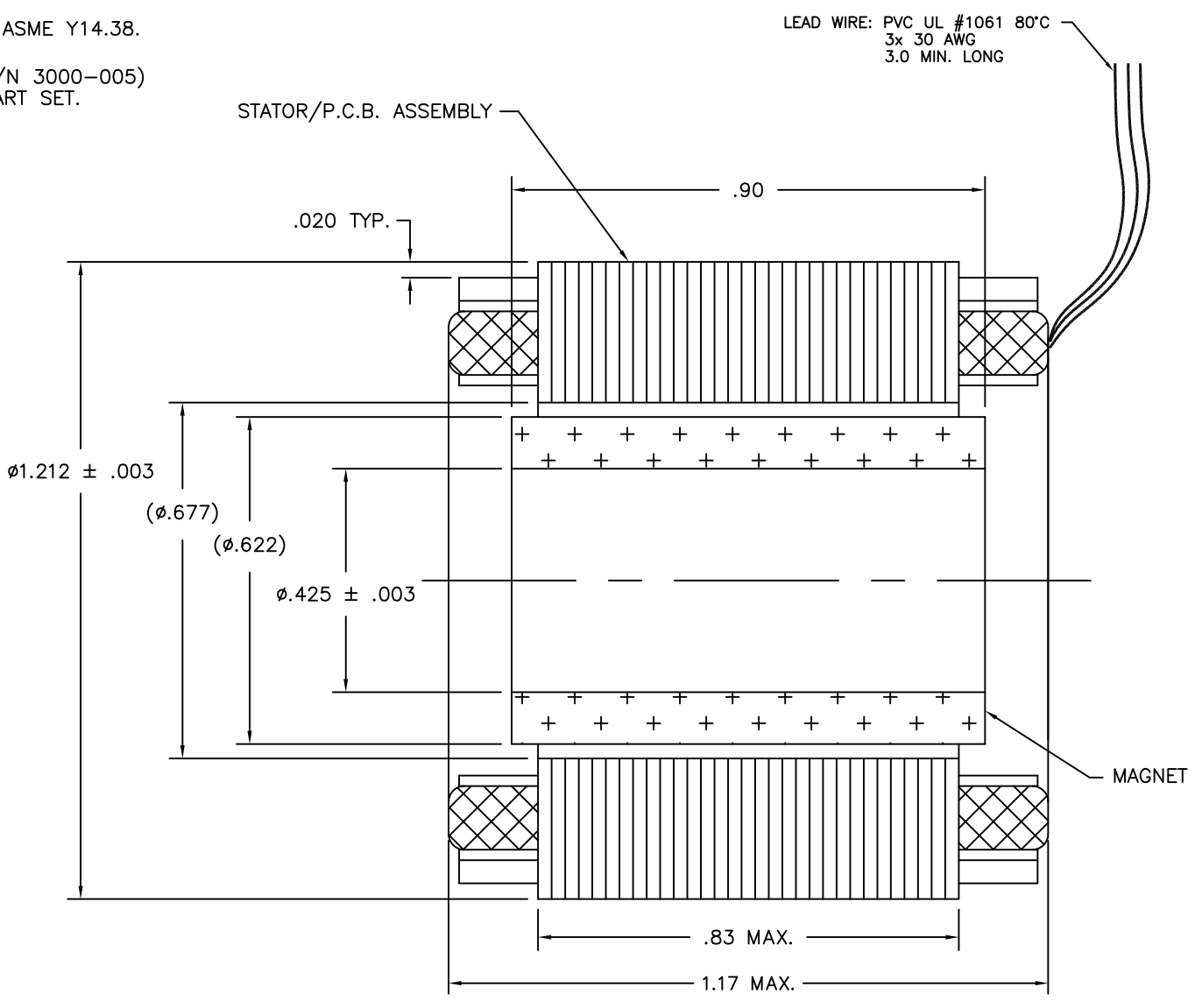


| WINDING CONSTANTS*       | UNITS           | TOL     | SYM            | WDG A |
|--------------------------|-----------------|---------|----------------|-------|
| DC RESISTANCE            | OHMS            | ±12.5%  | R              | 6.5   |
| VOLTAGE @ T <sub>p</sub> | VOLTS           | NOMINAL | V <sub>p</sub> | 30.6  |
| CURRENT @ T <sub>p</sub> | AMPERES         | NOMINAL | I <sub>p</sub> | 4.71  |
| TORQUE SENSITIVITY ***   | OZ-IN/AMP       | ±10%    | K <sub>T</sub> | 5.1   |
| BACK EMF CONSTANT        | VOLTS/(RAD/SEC) | ±10%    | K <sub>B</sub> | 0.036 |
| INDUCTANCE               | MILLIHENRY      | ±30%    | L              | 2.5   |

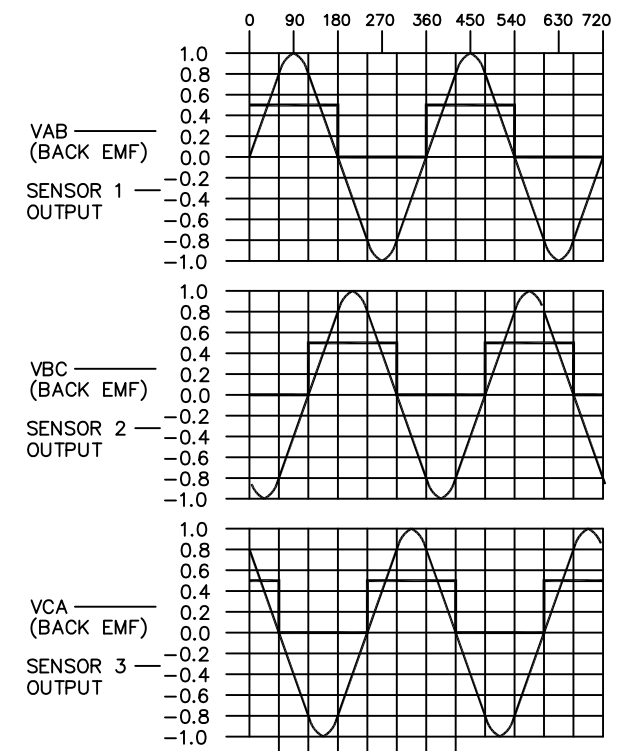
| MOTOR PARAMETERS*                       | UNITS                  | SYM             | VALUE                |
|---|------------------------|-----------------|----------------------|
| PEAK TORQUE                             | OZ-IN                  | T <sub>P</sub>  | 24                   |
| CONTINUOUS STALL TORQUE **              | OZ-IN                  | T <sub>CS</sub> | 7.5                  |
| MOTOR CONSTANT                          | OZ-IN/√WATT            | K <sub>M</sub>  | 2.0                  |
| ELECTRICAL TIME CONSTANT                | MILLISECOND            | T <sub>E</sub>  | 0.38                 |
| MECHANICAL TIME CONSTANT                | MILLISECOND            | T <sub>M</sub>  | 3.2                  |
| POWER I <sup>2</sup> R @ T <sub>p</sub> | WATTS                  | P <sub>P</sub>  |                      |
| DAMPING FACTOR (ZERO IMPEDANCE)         | OZ-IN/(RAD/SEC)        | F <sub>0</sub>  | 0.028                |
| FRICTION TORQUE                         | OZ-IN                  | T <sub>F</sub>  |                      |
| ROTOR INERTIA                           | OZ-IN SEC <sup>2</sup> | J <sub>M</sub>  | 9.0x10 <sup>-5</sup> |
| THEO. NO-LOAD SPEED                     | RPM                    | S <sub>M</sub>  | 10,000               |
| SPEED @ 7 OZ-IN & 24 VDC                | RPM                    | S <sub>L</sub>  | 2,000                |
| THEO ACC @ T <sub>p</sub>               | RAD/SEC <sup>2</sup>   | α <sub>T</sub>  | 2.7x10 <sup>5</sup>  |
| THERMAL RESISTANCE ***                  | °C/WATT                | θ <sub>TH</sub> |                      |
| MAX ALLOWABLE WINDING TEMP              | °C                     | TEMP            | 105                  |
| PHASES/WINDING TYPE                     |                        |                 | 3/Y                  |
| POLES                                   |                        |                 | 4                    |
| WEIGHT                                  | OZ                     | W <sub>T</sub>  | 2.5                  |

- NOTES: UNLESS OTHERWISE SPECIFIED
1. INTERPRET DIM. & TOL. PER ANSI Y14.5M-1982.
  2. INTERPRET DRAWING IAW ASME Y14.100.
  3. ALL ABBREVIATIONS IAW ASME Y14.38.
  4. THREE HALLS (KIMCO P/N 3000-005) TO BE SHIPPED WITH PART SET.

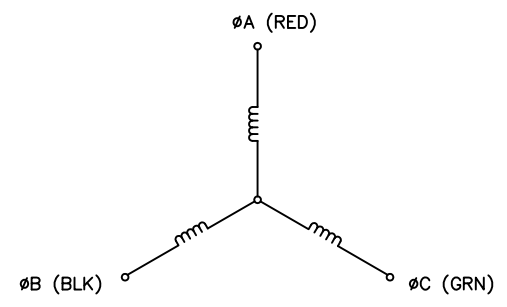
| LTR | ECO NO. | DESCRIPTION     | DRN | APP'D | DATE |
|-----|---------|-----------------|-----|-------|------|
| X1  | 110xxx  | INITIAL RELEASE | JWT |       |      |



BACK EMF AND SENSOR WAVEFORM  
(ROTATION OF MOTOR = CLOCKWISE FACING LEAD SIDE)



| MOTOR LEADS | COLOR | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|-------|---|---|---|---|---|---|
| A           | RED   | + | + | - | - |   |   |
| B           | BLK   | - | - | + | + |   |   |
| C           | GRN   |   |   |   |   | + | + |
| 1           | BRN   | 1 | 1 | 0 | 0 | 0 | 1 |
| 2           | BLU   | 0 | 1 | 1 | 1 | 0 | 0 |
| 3           | ORG   | 0 | 0 | 0 | 1 | 1 | 1 |
| Vcc+        | YEL   |   |   |   |   |   |   |
| GND         | GRY   |   |   |   |   |   |   |



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**THIRD ANGLE PROJECTION**

UNLESS OTHERWISE SPECIFIED:  
 -ALL DIMENSIONS ARE IN INCHES  
 -BREAK SHARP EDGES .015 MAX.  
 -SURFACE ROUGHNESS √125  
 -DIMENSIONS APPLY AFTER FINISH  
 -MAX FILLET R .010

TOLERANCES:  
 DECIMALS: .X ± .03, .XX ± .01, .XXX ± .005  
 ANGULAR: ±0° 30'

DO NOT SCALE DRAWING

**BEI KIMCO MAGNETICS DIVISION**  
VISTA, CA 92081

|                                  |                  |                             |                   |
|----------------------------------|------------------|-----------------------------|-------------------|
| DRAWN<br>J. THOMPSON             | DATE<br>11/11/11 | TITLE<br>BRUSHLESS DC MOTOR |                   |
| MECH CHECK                       |                  | SIZE<br>B                   | FSCM NO.<br>55789 |
| APPD                             |                  | DWG NO.<br>DIP13-12-004A    | REV<br>X1         |
| FILE NO.<br>M:\DIP\DIP10-06-TBDA | SCALE<br>1/1     | SHEET 1 OF 1                |                   |