1. **NOTES: (UNLESS OTHERWISE SPECIFIED)**

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED
2. LINEAR SPECIFICATIONS:
   - LINEAR STROKE: 31.5 ±1.0 mm
   - FORCE CONSTANT: 7 N/A
   - PEAK FORCE: 11.0 N @ 1.5A
   - COIL DC RESISTANCE: 15 OHMS ± 10%
   - COIL INDUCTANCE: 17.6 mH ± 10%
   - ENCODER RESOLUTION: 0.5, 1.0, 5.0 um
   - ENCODER ACCURACY: ± 2 Encoder counts
3. THETA SPECIFICATION:
   - ROTARY MOTOR: 24VDC BRUSHLESS
   - PEAK TORQUE: 60 mNm @ 3 A
   - TERMINAL RESISTANCE: 4.7 ± 10% Ohms/PHASE
   - TORQUE CONSTANT: 13.5 mNm / A
   - SUPPLY VOLTAGE: 24 VDC
   - ENCODER RESOLUTION: 0.0088° (40960 counts / 360°)
4. MOVING MASS: 190 gr
5. TOTAL MASS: 840 gr
6. OPERATING TEMPERATURE: 5°C TO +40°C

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**Z-CABLE**

<table>
<thead>
<tr>
<th>COIL</th>
<th>PHI-CABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Z</td>
</tr>
<tr>
<td>2</td>
<td>Z±</td>
</tr>
<tr>
<td>3</td>
<td>Z±</td>
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<tr>
<td>4</td>
<td>Z±</td>
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<td>Z±</td>
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<td>Z±</td>
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</tr>
<tr>
<td>9</td>
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</tr>
<tr>
<td>10</td>
<td>0 V</td>
</tr>
<tr>
<td>11</td>
<td>+24 V</td>
</tr>
<tr>
<td>12</td>
<td>NC</td>
</tr>
<tr>
<td>13</td>
<td>NC</td>
</tr>
<tr>
<td>14</td>
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</tr>
<tr>
<td>15 A</td>
<td>A</td>
</tr>
<tr>
<td>16 A+</td>
<td>A+</td>
</tr>
<tr>
<td>17 B+</td>
<td>B+</td>
</tr>
<tr>
<td>18 B+</td>
<td>B+</td>
</tr>
<tr>
<td>19 Z</td>
<td>Z</td>
</tr>
<tr>
<td>20 Z+</td>
<td>Z+</td>
</tr>
</tbody>
</table>

**SCALE**

Scale 1.5

**Z-AXIS**

- 4X-M4x0.7
- 4.018 ± 3.0
- 4.000 ± 3.0
- 4X-M4x0.7

**PHI-AXIS**

- 3X-M2x0.4
- 4.018 ± 3.0
- 4.000 ± 3.0
- 2X(3M) SOCKET 82020-60006

**DIMENSIONS**

- Ø 4.9950 ± 0.005
- Ø 4.9975 ± 0.005
- 0.3 X 45°
- 0.4 X 45°
- 1.4 X 45°
- 2.5 X 45°
- 80°
- 90°
- 1.5

**MATERIAL:** SMAC

**REF. NUMBER**

**DESIGNED BY**

**DRAWN BY**

**DATE:**

**DATE:**

**CHECKED BY**

**APPROVED BY**

**DATE:**

**CONTRACT**

**SHEET NUMBER**

**REVISION**

**PART NAME**

**SCALE:**

Do Not Scale DWG

**DWG SIZE:**

**PART NUMBER**

**FILE NAME:**

**HEAT TREATMENT:**

**MACHINE FINISH:**

**PROTECTIVE FINISH:**

**SPEC. NUMBER:**

**EXCEPT NOTED**

- BLACK ANODIZE
- NONE