SW-D600S-48/Motor Drive
Ultrasonic Small Metal Welder

Compact and High Performance with Various Monitoring Function
For Cu•Al Thin Wire Harness and Foil Welding

- High Frequency 48kHz/High Power 600W for Metal Welding
- High Resolution Motor for Fine Control
- Various Control Mode for Various Welding
- Various Monitoring Function for OK/NG Judgement
- Easy Operation by Touch Panel

◆ Displacement Control for Good Appearance and Stable Strength

Various Control Mode
- Peak Power
- Energy
- Time
- Continuous Oscillation
- External Sensor
  - Displacement Sensor
  - Thermal Sensor and etc.

Displacement Sensor

Depth Control (Horn Subduction Amount)

Oscillation is stopped when depth amount reaches to set value from oscillation start position.

◆ Welding Sample

- 0.5SQ Cu Strand Wire × 2
- 0.75SQ Al Strand Wire × 2
- Cu Foil 10μm × Al Plate 0.1mm × 2
- Al Plate 0.1mm × Ni Plate 0.1mm

◆ Welding of Dissimilar Metals

Cu Foil 10μm × Al Plate 0.1mm Welding

Clear boundary at joint interface ⇒ It’s Solid Phase Welding, not Fusion Bonding

- Good Result
- Solid Phase Welding
  - Weak Intermetallic Compounds are suppressed by low temperature welding.

- Bad Result
  - Al
  - Cu With Crack

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**Recommended System Configuration for Good Traceability**

- **Motor Drive**
- **Controller**
- **Displacement Sensor** (resolution 1.6μm)
- **Foot Switch**
- **Ethernet Communication**
- **User’s PC**
- **Condition Setting and Monitoring**
- **Monitor Value Display and Saving**

**Main Specification**

<table>
<thead>
<tr>
<th>Ultrasonic Welder SW-D600S-48</th>
<th>Motor Drive Head</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency/Output</strong></td>
<td>48.5kHz/600W (Continuous Oscillation 300W)</td>
</tr>
<tr>
<td><strong>Oscillation Method</strong></td>
<td>Digital ATHMOS</td>
</tr>
<tr>
<td><strong>Amplitude Setting</strong></td>
<td>30~100% (1% step)</td>
</tr>
<tr>
<td><strong>Control Mode</strong></td>
<td>Time/Energy/Peak Power/External Sensor/Continuous Oscillation</td>
</tr>
<tr>
<td><strong>Monitor (for OK/NG)</strong></td>
<td>Frequency/Time/Energy/Peak Power/External Sensor</td>
</tr>
<tr>
<td><strong>Number of Program</strong></td>
<td>31 programs</td>
</tr>
<tr>
<td><strong>Interface</strong></td>
<td>I/O/Analog/RS-232C/LAN/CF Card</td>
</tr>
<tr>
<td><strong>Power Source</strong></td>
<td>Single-Phase AC100~240V ± 10%</td>
</tr>
<tr>
<td><strong>Size/Weight</strong></td>
<td>W150 × D370 × H310mm/Approx. 8.5kg</td>
</tr>
<tr>
<td><strong>Pressure Range</strong></td>
<td>60~350N</td>
</tr>
<tr>
<td><strong>Drive</strong></td>
<td>Motor (resolution 1μm)</td>
</tr>
<tr>
<td><strong>Pressure Method</strong></td>
<td>Spring</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>50mm</td>
</tr>
<tr>
<td><strong>Air Supply</strong></td>
<td>0.1MPa</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>W227 × D300 × H585mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approx. 35kg</td>
</tr>
<tr>
<td><strong>Controller</strong></td>
<td>CNT-320B</td>
</tr>
<tr>
<td><em><em>Displacement Sensor</em> Resolution</em>*</td>
<td>1.6μm</td>
</tr>
</tbody>
</table>

*Displacement Sensor is option.

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**Please contact Avio sales for free welding test.**

**NIPPON AVIONICS CO., LTD.**

https://www.avio.co.jp/english/

**Sales Department**

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**SW-D600S-48 Motor Drive**

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**CAT. NO. 410-315-E 2104-00-BP**