Controls for Resistance Welding

EN1701

Mid Frequency Inverter Constant Current Controls

**Features**

- Millisecond control of weld time
- Spot, Pulsation or Seam Sequence
- RS232 Port
- Programmable options: Slope, Preheat, Quench, Temper, Postheat
- Linked Programs
- External Schedule Select
- Event & Error Outputs
- 64 Programs
- Repeat / Non-Repeat
- Earth Leakage Detection with Shunt Trip Breaker
- Isolation Contactor Timer
- Single/Dual Gun
- Programming in phase angle, kA or %
- Measurement Log
- 24 VDC flexible I/O (19 in 16 out); some mapable between weld functions, events and simple I/O sequences
- Dual Gun Stepper with Presets and Tip Dress Counter
- Diverse schedule capabilities provide maximum application versatility
- I/O Sequencer
- 4-20 mA or 0-10 V analog inputs and outputs provided for pressure sensing and control
- Two 0-10V analog inputs (Sequencer)
- Program Select
- Retraction
- Dual-interval Welding Sequence

**Constant Current**

- Control adjusts current output every millisecond.
- No setup necessary for constant current operation.
- Compensation is still available without secondary coil.
- When optional secondary coil is used, secondary amps are directly displayed.
- Primary current sensors built in.
- High, Low and Pre limits.
- Manual calibration via 2 set points for secondary coil.
- Pop-up current meter to assist programming.
- Maximum primary Amp limit.
- Auto secondary coil test.
- Control uses a dual loop feedback system to optimize its performance in terms of both speed and accuracy.
- Results of last weld available immediately.

**Options**

- Detachable 4 x 20 LCD Program Pendant (RPP1) with data backup
- ENLINK 1701
- Ethernet port
- Secondary coils
- Program Lockout
- Operation Mode Switch (OMS) – Program Lockout & Weld/No Weld
- Pressure Sensors
- Proportional Valve
- Isolation Contactor
- GFI for portable guns
- Water Flow Switch
**Expanded Capabilities**  
(Requires additional software and/or hardware)

**TO PROGRAM, YOU WILL NEED:**  
Program Pendant (RPP1)  
Detachable, hand-held pendant accesses all programmable variables and displays current and status.

**– OR –**

**ENLINK 1701**  
Communication software provides PC interface for remote programing and monitoring of control.

**TO MEASURE CURRENT IN AMPS, YOU WILL NEED:**

**Secondary Rogowski Coils**  
Available in 3Q 6O or 12Odiameters. Provides actual secondary amperage measurements.

**– OR –**

Coil as part of Weld Transformer.

**OPTIONAL:**

- **Ethernet Card**  
Provides ability to network multiple controls using ENLINK 1701.

- **Pressure Sense and Control Hardware**  
Using provided analog I/O, add differential sensors, single-ended sensors, or 2 Oand 13 Oport proportional controllers.

- **GFI for portable guns**

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>EN1701-360T</th>
<th>EN1701-600T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum output power @ 20% duty</td>
<td>234 kVA</td>
<td>390 kVA</td>
</tr>
<tr>
<td>Maximum line input voltage</td>
<td>480 VAC @ 50/60 Hz</td>
<td>480 VAC @ 50/60 Hz</td>
</tr>
<tr>
<td>Maximum output current</td>
<td>360 A</td>
<td>600 A</td>
</tr>
<tr>
<td>Maximum continuous output current</td>
<td>161 A</td>
<td>268 A</td>
</tr>
<tr>
<td>Maximum line input current per phase</td>
<td>209 A</td>
<td>347 A</td>
</tr>
<tr>
<td>Continuous rms line current per phase @ 20% duty</td>
<td>93 A</td>
<td>155 A</td>
</tr>
<tr>
<td>Breaker (standard) *</td>
<td>100 Amp 3 pole *</td>
<td>200 Amp 3 pole *</td>
</tr>
<tr>
<td>Power factor</td>
<td>leading</td>
<td>leading</td>
</tr>
<tr>
<td>Regulation feedback</td>
<td>secondary or primary</td>
<td>secondary or primary</td>
</tr>
<tr>
<td>Current regulation accuracy</td>
<td>±2%</td>
<td>±2%</td>
</tr>
<tr>
<td>Current regulation repeatability</td>
<td>±1%</td>
<td>±1%</td>
</tr>
<tr>
<td>Inverter switching frequency</td>
<td>1 kHz</td>
<td>1 kHz</td>
</tr>
<tr>
<td>Maximum averaging time</td>
<td>2 seconds</td>
<td>2 seconds</td>
</tr>
<tr>
<td>Water flow rate</td>
<td>1 GPM</td>
<td>1 GPM</td>
</tr>
<tr>
<td>Maximum water inlet temperature</td>
<td>104°F (40°C)</td>
<td>104°F (40°C)</td>
</tr>
</tbody>
</table>

**Transformers**

<table>
<thead>
<tr>
<th>Transformer Type</th>
<th>Capacity (kVA)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 kVA</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>56 kVA</td>
<td>70:1</td>
<td>T</td>
</tr>
<tr>
<td>76 kVA</td>
<td>54:1</td>
<td>T</td>
</tr>
<tr>
<td>100 kVA</td>
<td>50:1</td>
<td>T</td>
</tr>
</tbody>
</table>

* Control must be ordered with 3 pole shunt trip breaker.

**EN1701 Resistance Welding Inverters**

**One year warranty offered on EN1701 Series Controls**

**Distributed by:**

**ENTRON™**  
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