Controls for Resistance Welding

EN1000

Multiple Schedule/Multiple Sequence Controls

- **Simple to Program**
  Push buttons and a short three-step procedure make easy work of programming any possible welding schedule.

- **New Design Reduces Cost**
  Simplified design significantly reduces production costs which are passed on to you.

- **Quality Tested to Performance Extremes**
  Each unit is tested to insure maximum performance at customary operating levels. The Entron resistance welding control has consistently offered an excellent performance history.

- **Application Flexibility**
  Designed for use with single phase welding machines, rocker arm and press type welders, brazing and robotic equipment, and special machines.

### Features
- Spot Sequence
- Pulsation Sequence
- Up & Down Slope
- Quench/Temper
- Forge Delay
- Multiple Weld/Multiple Current Sequence
- Preheat / Postheat
- External Schedule Select
- Process & Error Outputs
- Seam Sequence

### Capabilities
- 50 Unique Schedules
- Chained & Successive Modes
- Repeat & Non Repeat
- Weld & Valve Control Relays
- 3 Valve Output
- Multiple Weld Programming
- Multiple Job Set-Ups
- Easily Programmed
- Program Only the Functions Required

Exclusive ENTRON two year warranty
Advantages

- **Design Simplicity**
  Design simplicity is the key to our ability to manufacture the highest quality weld control with the best delivery, least maintenance, and lowest out of warranty service in the industry.

- **Field Expandable**
  Entron can provide retrofit controls suitable for any manufacturer’s controls of any age, type or sequence for installation in the field.

- **Vault Closing Door Mechanism**
  D & T cabinet doors equipped with vault locking mechanism to ensure security.

- **Flexible Applications**
  EN1000 Single Contactor Controls can be applied to spot welders, seam welders, special machines, or robotic equipment for welding materials of unequal thickness and coated materials.

- **Multiple Cabinet Options**
  Available in D, T, E, S cabinet styles with front or side-mounted control panels.

- **Available Options**
  Remote Data Entry
  Program Lockout Switch
  RS 232 Port Interface
  Schedule Select
  Valve Select (1 of 7) Option
  RS485
EN1000 Series Controls
Multiple Schedule/Multiple Sequence Controls

Date: April 2006  Supercedes: August 2000

**SPECIFICATIONS**

**Absolute Count:** Push Button Data Entry with Display
- Squeeze Count: 0 to 99 cyc, 50/60 Hz
- Weld Count/Heat Count: 0 to 99 cyc, 50/60 Hz
- Cool Count: 0 to 99 cyc, 50/60 Hz
- Hold Count: 0 to 99 cyc, 50/60 Hz
- Off Count: 0 to 99 cyc, 50/60 Hz
- Weld Impulse Counter: 1 to 99 Impulses
- Slope Control/Up and Down Slope: 0 to 99 cyc, 50/60 Hz
- Digital Phase Shift Current Control, 10 to 99% in 1% current steps, all weld current functions

It is NOT necessary to program functions NOT required, program only functions required

**Standard RWMA/NEMA Programmable Functions**
Including the following as examples:
- Up Slope and Down Slope
- Quench/Temper
- Pulsation Sequence
- Multi-Weld Count/Multi-Current Select
- Pre-Heat/Post-Heat
- Forge Delay
- Seam Weld (Continuous and Intermittent)

**4 Cycle Modes**
- Non-Repeat: Single Schedule upon initiation
- Repeat: Single Schedule repeated with pilot circuit held closed
- Successive: Upon each initiation, unique successive schedules are automatically selected
- Chained: Multiple schedules can be linked to operate sequentially upon a single initiation

**Additional Features**
- Error Code/Fault Outputs
- 87° First Half Cycle Delayed Firing, Anti-Saturation Circuit
- Dynamic Automatic Power Factor Equalization
- Dynamic Automatic Voltage Compensation, ±20% of Nominal Line
- Emergency Stop Circuit
- Interlocking Pressure Switch Circuit
- Single Stage Pilot/2 Stage Pilot, Beat/Non-Beat Operation
- Operational Lights: Power On, Weld Current
- Indicator Lights for all functions on display panel
- Valve Transformer: 150VA 230/460-115V, E, D & T Cabinets
- 50VA 230/460-115V, S Cabinet

3 Valve outputs standard, all controls
- Valve select 1 of 7, optional

Entron®
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The EN1000 Series Control is ideal for programming schedules for welding coated materials, aluminum, other non-ferrous metals, special alloys, multiple thickness of materials and many special part configurations.

- Store up to 50 UNIQUE SCHEDULES
- Every parameter of each schedule individually accessible
- Each schedule can store 11 distinct and totally different parameters
- All schedules retained in memory with power off
- It is NOT NECESSARY to program functions not required
- Four Cycle Modes can be programmed for complex welding schedules
- Select and Program up to 3 VALVE CIRCUITS, STANDARD
  Independently selectable and programmable
- Single contactor circuitry
  Process control outputs
- Additional Standard Features:
  - External Schedule Select
  - Contactor Failed Detection (Circuit breaker with shunt trip, optional)
- Control can be INTERFACED with external Programmable Logic Control (PLC); Advanced interfaces available

<table>
<thead>
<tr>
<th>CABINET STYLE &amp; DIMENSIONS</th>
<th>CONTACTOR STYLE &amp; RATINGS</th>
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</thead>
<tbody>
<tr>
<td><strong>STYLE</strong></td>
<td><strong>H</strong></td>
</tr>
<tr>
<td>FP</td>
<td>279 mm</td>
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<tr>
<td>S</td>
<td>222 mm</td>
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<tr>
<td>E</td>
<td>533 mm</td>
</tr>
<tr>
<td>D or T</td>
<td>610 mm</td>
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</tbody>
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All SCR contactors complete with temperature limit switch.

Circuit Breakers available in D and T cabinets only. Consult factory for Circuit Breaker pricing. 100, 200 and 400 ampere Circuit Breakers are available in D and T cabinets with right hand, flange mounted operator installed within the cabinet. Consult factory for availability of 600 and 800 ampere Circuit Breakers.

See COMPREHENSIVE PRICE LIST for a complete list of Options, Circuit Breakers, Accessories and Special Features.

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