

# ENTRON™

## Controls for Resistance Welding EN1003

### Multiple Schedule/Multiple Sequence 3 Phase DC 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. These savings 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***  
Transformers can be connected in an Inside Delta, Outside Delta, or “Y” configuration.

#### Features

- 3 SCR Contactors
- Spot Sequence
- Pulsation Sequence
- Up & Down Slope
- Quench/Temper
- Forge Delay
- Multiple Weld/Multiple Current Sequence
- Preheat/Postheat
- External Schedule Select
- Seam Sequence
- Brazing
- Flash Welding
- Retraction
- Squeeze Delay
- Stepper

#### Capabilities

- 50 Unique Schedules
- Chained & Successive Modes
- Repeat & Non-Repeat
- Weld & Valve Control Relays
- 3 Valve Outputs
- 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, the best delivery, and the lowest service requirements in the industry.

- **Field Expandable**

ENTRON can provide retrofit controls suitable for any manufacturer's controls, of any age, type or sequence, for field installation.

- **Vault Door Locking Mechanism**

All cabinet doors equipped with a vault locking mechanism to insure security.

- **Flexible Applications**

EN1003 controls can be applied to spot welders, seam welders, special machines, or robotic equipment for welding a full range of weldable materials.

- **Multiple Cabinet Options**

Available in D, T, L and H cabinet styles with front or side-mounted control panels.



D Cabinet



L Cabinet



*Unique to ENTRON. All EN1003 3 Phase DC Controls in L & H Cabinets feature provisions for field installation or change of circuit breakers.*



**T. J. SNOW CO., INC.**

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**ENTRON.**

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**RWMA**  
MEMBER

780056-0406

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## EN1003 Series Controls

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Date: April 2006

Supersedes: July 2004

### 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 Impluses
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 completion
- Chained: Multiple Schedules

#### Additional Features

- Error Code/Fault Output
- 87° First Half Cycle Delay
- Selectable 50/60 Hz. operation
- Dynamic Automatic Voltage Compensation,  $\pm 20\%$  of Nominal Line
- Emergency Stop Circuit
- Interlocking Pressure Switch Circuit
- Single Stage Pilot/2 Stage Pilot, Beat/Non-Beat Operation
- Operational Lights: 3) Power On  
3) Weld Current
- Indicator Lights for all functions on display panel
- Indicator LEDs for pilot inputs and diagnostics
- Valve Transformer: 150VA 230/460-115V, All Cabinets
- 3 Valve outputs standard, all controls
- Weld Stepper



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## EN1003

Style L Cabinet

914 mm x 797 mm x 254 mm

36" x 31-3/8" x 10"

The EN1003 Series Control is ideal for machines that require either large secondary currents or, by design, have high power losses caused by ferrous metals in the throat of the welder, such as parts of the machine and/or welded parts.

- 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
    - Process control outputs • External Schedule Select •
    - Anti-Tiedown Initiations • Forge Delay • Versatile Weld Stepper •
- Control can be INTERFACED with external Programmable Logic Control (PLC); Advanced interfaces available
- Selected Heat used SIMULTANEOUSLY on 3 Contactor Outputs.
- Transformers can be connected in an outside delta, inside delta, or "Y" configurations.
- Optional Functions:
  - Program Lockout Switch • Schedule Select • RS232 Port Interface •
  - Remote Date Entry • Valve Select (One of Seven) Option •

CABINET STYLE & DIMENSIONS				CONTACTOR STYLE & RATINGS			
STYLE	H	W	D	AIR COOLED	WATER COOLED		
D or T	610 mm 24"	645 mm 25-3/8"	254 mm 10"	Firing Circuit or 300 A	1200A		
LS or LF	914 mm 36"	797 mm 31-3/8"	254 mm 10"	Firing Circuit or 300A	1200A	1800A	
HS or HF	1067 mm 42"	949 mm 37-3/8"	254 mm 10"	300A	1200A	1800A	2200A

All SCR contactors complete with temperature limit switch.

Circuit Breakers available in L and H cabinets only. Consult factory for Circuit Breaker pricing. 100, 200 and 400 ampere Circuit Breakers are available in L and H 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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