



## Model 301

### 3-Phase Mil-Spec A Resistance Welding Controller

#### FEATURES

- Unmatched Versatility
- Programming in English. "No Codes"
- 6 Months Memory Retention Without Power
- Electronic Air Pressure Control
- Programmable Slope Synthesizer
- 3 Phase Line Voltage Compensator
- 140 Weld Schedules Data Retention
- Multiple Foot Switch Pedal Operation
- Program Integrity Under Key Control
- Data Storage on PC
- Serial Interface to Other Computers
- Interface With Automation Equipment
- Intertron Scanner
- Optional 9 Channel Data Acquisition System Model 304A
- Motor Control with Wheel Encoder Feedback



#### SPECIFICATIONS

Welder controller cabinet with locking key, and containing the following:

- 1 Monolithic front panel with a display of 68 digits and touch keypads with visual tactile feedback.
- 1 Display front panel printed circuit board.
- 1 Processor printed circuit board, containing the microprocessor, associated memory with battery backup, parallel and serial I/O ports, variable baud rate, cassette interface circuits, visual INPUT/OUTPUT diagnostics, computer memory diagnostics, independent 3 phase line voltage monitoring and compensation, and the voltage generators for programming WELD and FORGE pressure.
- 1 Peripheral interface printed circuit board, containing the internal power supplies, the solid state relays for valve solenoid operation, the INTERTRON transceiver, and the SCR/IGNITRON pulse amplifiers.

Physical Dimensions: 12 1/4"h x 20 1/2"w x 6 1/2"d

Weight: 24 lbs.

Operating temperature: 0 to 60 degrees Centigrade

Input voltage and power consumption: 220/240/440/480 VAC 60HZ - 15 watts



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### 3-Phase Mil-Spec A Resistance Welding Controller

#### STANDARD FEATURES:

- Fixed timing functions, Tip travel 20 cycles, Precompression 4 cycles
- Variable timing functions:

SQUEEZE		0-99
PREHEAT	Imp. - Cool - Heat - Heat % - Heat decay - Heat decay %	0-99
WELD	Imp. - Cool - Heat - Heat % - Heat decay - Heat decay %	0-99
POST HEAT	Imp. - Cool - Heat - Heat % - Heat decay - Heat decay %	0-99
QUENCH		0-99
TEMPER	Imp. - Cool - Heat - Heat % - Heat decay - Heat decay %	0-99
HOLD		2-99
OFF		0-99
FORGE:	Hi - Low - Var. Delay Start 000.0-999.9	

- Weld & Forge psi display: 00-99
- Operating Modes: SPOT - SEAM - ROLL (intermittent drive)
- Control Features:
  - Weld/No Weld, Repeat/One Shot, Tip/Wheel Dress, Foot Switch Lock, Motor ON and 110VAC/30VA Outputs for controlling up to seven valve solenoids and relays
  - Water Saver Timer. Shuts itself off when head is raised.
  - Tip Arc Relay Control
  - Two Stage Foot Switch Inputs, direct connection up to four foot pedals
  - Interrupt input to halt control and sound internal alarm if detects overheating, no water flow, or lack of adequate air pressure. (Detection devices not included.)
  - Line Voltage Compensator manual override
  - Programmable Slope in all three modes for generating complex heat waveforms
  - Weld schedule program under keylock. (Operator can vary % heat  $\pm 5\%$  of previous heat setting.)
  - Internal switch (jumper) selects Frequency Converter of Full Wave Rectified D.C. operation.
  - Thumbwheel switch for instantaneous selection of 140 preprogrammed weld schedules, with all variables parameters as viewed on the front panel
- Standard components supplied with each system:
  - Welder controller cabinet
  - Power distribution transformer
  - Ignitron firing modules, or SCR firing modules

#### OPTIONAL FEATURES AND COMPONENTS:

- RS 22 download, store and edit weld schedules on PC
- Electronic Air Pressure Controller model 350A with dual output, for supplying pilot air pressure to WELD and FORGE air pressure regulators Operating range: 05 psi to 90 psi Resolution and Accuracy:  $\pm 0.5$  psi Physical dimensions: 10"h x 3"w x 10"l Weight: 14 lbs Input air pressure: 120 psi typical
- Interlock Scanner. It interlocks the operation of up to ten controllers per scanner for sequential welding.
- Interface for control from central computer
- SCR firing package
- IGNITRON firing package
- Motor control with wheel surface speed encoder feedback



## Model 302

### 3-Phase Mil-Spec B Resistance Welding Controller

#### FEATURES

- 3 Phase Frequency Converter &
- 3 Phase Rectified D.C.
- Spot Weld - Seam Weld - Rollspot Weld
- Fully Programmable 16 Weld Schedules
- Pulsating Heat Control
- Programmable Forge Control
- Programmable Weld PSI
- Programmable Forge PSI
- Programmable Hi-Low Limit Weld PSI
- Programmable Hi-Low Limit Forge PSI
- Programmable Motor Speed
- Programmable First Spot Heat % In Seam
- Intermittent Drive Motor On/Off Control
- 5 Years Memory Retention Without Power
- Scanner Interlock
- RS232 Interface



#### PERFORMANCE

- Absolute Repeatability
- Quartz Crystal Accuracy
- Space Age Design and Rugged Construction

#### SPECIFICATIONS

- INPUT POWER: 200 VAC to 480 VAC 60 Hz
- AC OUTPUT TO VALVES: 115 VAC 150 VA
- Solid State Contactors Available in Ranges from 300 Amps to 3200 Amps
- Ignition Firing Module to Fire Ignitrons Size A through E
- Solid State Relay to Operate Squeeze Valve in Spot - Seam - Rollspot Mode
- Solid State Relay to Turn On Motor or Air Brake in Seam or Rollspot Mode
- Dual Pilot Air Pressure Regulator
- Dual Air Volume Booster 150 CFM
- DC Motor Controller 0 - 90 V or 0 - 180 V .5 HP to 2 HP
- Retraction and Two Stage Foot Switch Input
- Floating Input/Output to Central Interlock Scanner
- Visual Peripheral Diagnostics
- RS232 Connector to Upload and Download Weld Schedules to Laptop
- Remote Control Box Model 325A with the following switches: Repeat, Weld, Tip Dress, Positive - Alternate - Negative Polarity, Seam - Spot - Roll, Next Weld Schedule (quick selection between two weld schedules), Program Lock Key, One of Sixteen Weld Schedule Selector Switch



## Model 302

# Medium Frequency Inverter Resistance Welding Controller

### TIMING FUNCTIONS

tip travel time	00-99
precompression time	00-99
squeeze time	00-99
impulses	00-99
cool time	00-99
forge delay time	00-99
heat time	00-99
heat %	00-99
heat decay time	00-99
heat decay %	00-99
hold time	00-99
off time	00-99
weld PSI	00-99
forge PSI	00-99
motor speed	00-99
first spot in seam	00-99

Your Local Representative



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