

SL-320A
Low Force Electronic Weld Heads

The SL-320A electronic resistance spot welding heads are high precision, low force heads designed specifically for applications requiring precise position and force control. This versatile series meets the process demands of microelectronics manufacturing, yet is robust enough to endure industrial requirements and environments.

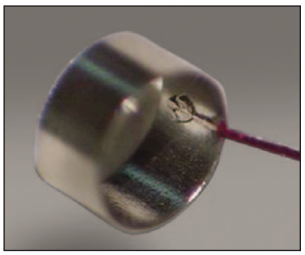
KEY FEATURES

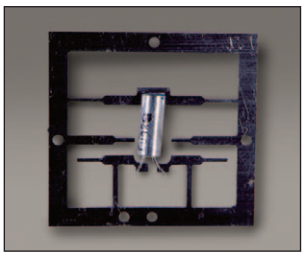
- In-line and offset opposed electrode configurations to tailor weld head for application
- Exceptionally accurate force and position parameters provide outstanding process control and measurement
- Weld-to-displacement feature stops the weld precisely during collapse
- Initial part detection feature detects missing or extra parts
- Displacement limits facilitate monitoring of both initial and final part thickness
- Footswitch options: Linear motion or two level
- User friendly I/O for easy integration with PLC
- Four programmable relay outputs facilitate process control

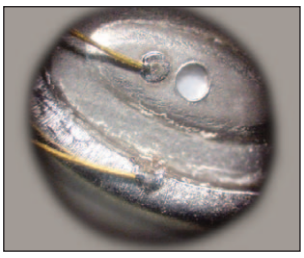
Model Number	Description	Electrode Type/ Diameter
SL-321A	Inline, opposed weld head	0.125" or 3 mm
SL-322A	Inline, parallel gap weld head	Unitip, 0.125"
SL-323A	Offset, parallel gap weld head	Unibond 0.120"/ Microjoin 0.125"
SL-324A	Offset, opposed weld head	0.125" or 3 mm

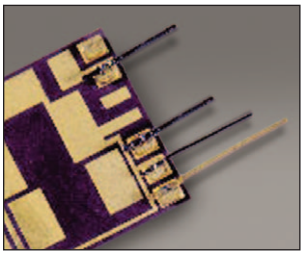
TYPICAL APPLICATIONS

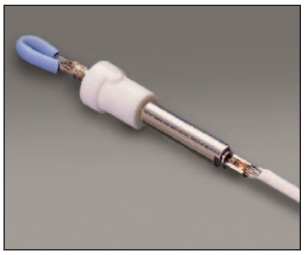

Squib wire


Wire to electrode


Electronic components


Hearing aids


Fine wires


Medical devices

TECHNICAL SPECIFICATIONS

Electronic Weld Head Control Specifications	
Line voltage input	85-264 VAC 50\60 Hz single phase 8 A
Operating environment	5-40 °C (41-104 F°), 10 - 95% relative humidity non condensing
Ramp to compress period	1 - 999 ms, 1 ms step
Compress period	0 - 500 ms, 1 ms step
Squeeze period	1 - 999 ms, 1 ms step
Delay period	2 - 700 ms, 1 ms step
Follow-up period	0 - 99.9 ms, 0.1 ms step
Hold period	0 - 999 ms, 1 ms step
Upstop position	0.060 - 0.996 in (0.15-25.3 mm)
Search position	0.005 - 0.995 in (0.13-25.2 mm)
Graphical run screens	Graphical display of weld schedule, force profile with result, and initial, final, and setdown results.
Object detection	Detects presence of objects in electrode path between upstop and search positions and automatically returns electrode back to upstop position.
Weld schedules	127 schedules, each with 8 user-programmable process steps.
Run/dress modes	Provides ability to easily dress electrodes then automatically recalibrate closed position of electrode tips.

Weld HeadSpecifications – SL-320A	
Stroke maximum	0.98 in (25 mm)
Force maximum (follow up only)	7.75 lb (3520 gm)
Force weld	0.44 - 7.0 lb (200 - 3175 gm)
Force rating continuous	2.42 lb (1100 gm)
Force linearity over entire stroke (15°C temperature variation)	+/- 3% or +/- 20 gm whichever is greater.
Force response time	Assuming no shaft movement, the rise time going from 2.2 lb (1000 gm) force to a step input of 7.0 lb (3200 gm) is 1 msec maximum.
Slew rate maximum	30 in/sec (75 cm/sec)
Operating environment	5 - 40° C (41-104° F)

Control I/O	
Footswitch inputs	Process initiated by linear or 2 position footswitch.
Digital inputs – 24 VDC, 5 mA, bi-directional inputs	Schedule select, dress, reset, process inhibit, park, start weld 1 and 2.
Digital outputs – 30 V AC/DC, 0.5 A, solid state relays	Schedule select, alarm, in process, parked, acknowledgement, ready.
Programmable relay outputs	4 relays, contact rating: 0.5 A at 30 VAC or 30 VDC maximum
Fire switch output	Output for initiating power supply
Weld to displacement (power supply cutoff) output	30 VAC or VDC 0.5 A, optically isolated solid state relays
Valve output	0.5 A at 24 VDC
Emergency stop	Input for customer supplied E-stop switch
Force output	Analog output proportional to force of last weld when requested with RS-232 command.
Position output	Quadrature output
RS-232	Schedule read/write, status read, data output

WEIGHT & DIMENSIONS

	Control	Weld Head
Dimensions W x D x H	8.75 in x 16 in x 9.2 in (222 mm x 407 mm x 234 mm)	2.6 in x 5.4 in x 14 in (65.5 mm x 138 mm x 356 mm)
Weight	18.5 lb (8.4 kg)	8.1 lb (3.6 kg)

CE

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