



HF-2700A, HF-2500A - High Frequency Inverter Spot Welding Power Supply (formerly known as HF27, HF25)

The controls found on the HF-2700A, HF-2500A High Frequency Inverter Spot Welding Power Supply address the challenges of micro joining for a wide range of applications. Miniature welds are highly sensitive to small heat profile fluctuations in the resistance welding process. Overheating deforms and destroys parts, while underheating results in a weak and unacceptable bond. To achieve consistent, reliable welds of small to micro-miniature parts, heating needs to be precisely controlled. This necessitates superior control of the energy output. The HF-2700A, HF-2500A High Frequency Inverter Spot Welding Power Supply are also geared for automation featuring exceptional repetition rates, standard I/O connections and remote programming capability.

Key features HF-2700A, HF-2500A - High Frequency Inverter Spot Welding Power Supply

Control features

- > Constant current, voltage, and power modes
- > Monitors energy and resistance
- > 2400 A maximum
- > 25 kHz feedback

Weld Quality Process Tools

- > Active Part Conditioning (APC)
- > Pre-Weld Check
- > Weld to Limits

HF-2700A Advanced Features

- > Displacement and force monitoring
- > Force control
- > Envelope function
- > Combo mod
- > Energy and time limits

Specifications HF-2700A, HF-2500A - High Frequency Inverter Spot Welding Power Supply (formerly known as HF27, HF25) 1/2

Model number	HF-2500A/240	HF-2500A/400	HF-2500A/480
Nominal line voltage (3 phase)	240 VAC	400 VAC	480 VAC
Line voltage range (vac)	192 to 264	320 to 440	384 to 528
Input circuit rating (per phase)	25 A	20 A	13 A
Input KVA @ 3% duty cycle	30 KVA	30 KVA	30 KVA
Output KW @ max. demand	12 KW	12 KW	12 KW
Output transformer voltage @ max. rated output current	5.2 V	5.2 V	5.2 V
Open circuit max. output voltage @ nominal line	11.5 V	11.5 V	11.5 V
Setting ranges	Current – 100 A to 2400 A; Voltage – 0.2 V to 10 V; Power – 50 W to 10 kW	Current – 100 A to 2400 A; Voltage – 0.2 V to 10 V; Power – 50 W to 10 kW	Current – 100 A to 2400 A; Voltage – 0.2 V to 10 V; Power – 50 W to 10 kW
Output current	2400 A @ 3% duty cycle	2400 A @ 3% duty cycle	2400 A @ 3% duty cycle
Output feedback response time (current, voltage, power)	40 Microseconds	40 Microseconds	40 Microseconds
Output regulation versus line voltage variance	2%	2%	2%
Output regulation versus load resistance variance	2%	2%	2%
Output repeatability current, voltage, power $\pm$ of setting	2%	2%	2%
Weld period ranges	All segments except squeeze and hold 0.10 ms to 10 ms, 0.1 ms steps; 10 to 99 ms, 1 ms steps; squeeze and hold 0 to 999 ms, 1 ms steps	All segments except squeeze and hold 0.10 ms to 10 ms, 0.1 ms steps; 10 to 99 ms, 1 ms steps; squeeze and hold 0 to 999 ms, 1 ms steps	All segments except squeeze and hold 0.10 ms to 10 ms, 0.1 ms steps; 10 to 99 ms, 1 ms steps; squeeze and hold 0 to 999 ms, 1 ms steps
Weld energy setting accuracy	Current: 2% of setting or 2 A, whichever is greater; Voltage: 2% of setting or 0.050 V, whichever is greater; Power: 5% of setting or 20 W, whichever is greater	Current: 2% of setting or 2 A, whichever is greater; Voltage: 2% of setting or 0.050 V, whichever is greater; Power: 5% of setting or 20 W, whichever is greater	Current: 2% of setting or 2 A, whichever is greater; Voltage: 2% of setting or 0.050 V, whichever is greater; Power: 5% of setting or 20 W, whichever is greater
WELD HEAD PROFILE FUNCTIONS			
Weld pulse control	Dual pulse with independent control of current, voltage, power or combo mode (HF27) on each pulse.		
Programmable weld pulse segments	Squeeze, upslope 1, weld 1, downslope 1, cool, upslope 2, weld 2, downslope 2, hold.		
Weld schedule memory	Save up to 100 different weld schedules, protected from unauthorized changes.		

Measurement parameters	Independent monitor of current, voltage, power, and resistance on each pulse. Envelope, time limits and energy monitor (HF27).
Graphic display	Back-lit LCD displays programmed and actual weld current, voltage or power, upper and lower limits, and resistance.
Measurement selection	Peak or average
Current measurement range / accuracy	50.0 A to 2.400 KA/±2% of reading or ±2 A, whichever is greater.
Voltage measurement range / accuracy	0.2 V to 9.999 V/±2% of reading or ±0.05 V, whichever is greater.
Power measurement range / accuracy	0.01 KW to 9.999 KW/±5% of reading or ±20 W, whichever is greater.
Alarms	Display alert, four user programmable AC/DC relays; audio alarm.
Programmable weld energy limit	Terminates weld energy when exceeding user defined current, voltage, or power limits.
Weld pre-check	Inhibit second weld pulse when first test pulse exceeds user programmed limits.
Active part conditioner	First pulse current limit in constant power allows second pulse to fire.
I/O AND DATACOMMUNICATIONS	
Input: Input Isolation	All inputs and outputs are fully isolated.
Input: Control voltages	Selectable: +5 V, +24 V, sourcing or sinking inputs.
Input: Firing switch initiation	1-level foot switch, 2-level foot switch, mechanical or opto firing switch.
Input: Remote control	Remote weld schedule select, process inhibit, emergency stop.
Input: RS232	Change weld schedules and individual parameters.
Input: RS485	Change weld schedules and individual weld parameters; "Daisy Chain" unit to unit, unit(s) to host computer.
Input: Electrode voltage	Weld voltage signal for voltage feedback operation (0 to 10 V peak).
Weld head air valve driver	24 VAC, 1 A; timing controlled by HF-2500A/HF-2700A. Operates new EZ-Air.
Alarm relays	Four user-programmable mechanical relays; programmable normally open or normally closed; contacts: 250 VAC at 5 A; 30 VDC at 5 A. Conditions: weld, end of weld, alarm, out of limits.
DISPLACEMENT OPTION (HF-2700A ONLY)	

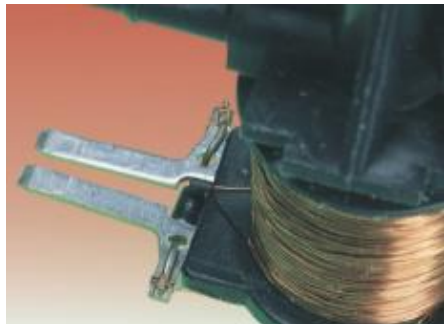
Capabilities	Part detection, final thickness measurement, set down measurement, energy stop (weld to limit)
Accuracy of displacement readings	± .003 in (0.076 mm)
Repeatability	± 1.0 %
Maximum travel	1 in (25 mm)
Alarm relays	Additional conditions: any LVDT, initial Lo/Hi, final Lo/Hi, displacement Lo/Hi, initial NG, displacement NG, energy stop
Data output	Initial thickness, final thickness, displacement, and any alarm condition
FORCE CONTROL AND MONITOR (HF-2700A ONLY)	
Force input	0 - 10 V input signal from signal conditioner or load cell
Force measurement	End of squeeze, end of hold
Force output	0 - 10 V for use with proportional valve
Force programming	lbs, kg. N. force can be stored by schedule
WEIGHT & DIMENSIONS	
Dimensions (LxWxH)	460 mm x 230 mm x 325 mm (18 in x 9 in x 12.8 in)
Weight	25 kg (54 lb)

Specifications HF-2700A, HF-2500A - High Frequency Inverter Spot Welding Power Supply (formerly known as HF27, HF25) 2/2

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WELD HEAD PROFILE FUNCTIONS			
Weld pulse control			
Programmable weld pulse segments			
Weld schedule memory			
Measurement parameters			
Graphic display			
Measurement selection			
Current measurement range / accuracy			
Voltage measurement range / accuracy			
Power measurement range / accuracy			

Alarms
Programmable weld energy limit
Weld pre-check
Active part conditioner
I/O AND DATACOMMUNICATIONS
Input: Input Isolation
Input: Control voltages
Input: Firing switch initiation
Input: Remote control
Input: RS232
Input: RS485
Input: Electrode voltage
Weld head air valve driver
Alarm relays
DISPLACEMENT OPTION (HF-2700A ONLY)
Capabilities
Accuracy of displacement readings
Repeatability
Maximum travel
Alarm relays
Data output
FORCE CONTROL AND MONITOR (HF-2700A ONLY)
Force input
Force measurement
Force output
Force programming
WEIGHT & DIMENSIONS
Dimensions (LxWxH)
Weight

Product applications HF-2700A, HF-2500A - High Frequency Inverter Spot Welding Power Supply (formerly known as HF27, HF25)



Anti-lock brake system solenoid



Critical parts fabrication



Switch assembly



Implantable device interconnects

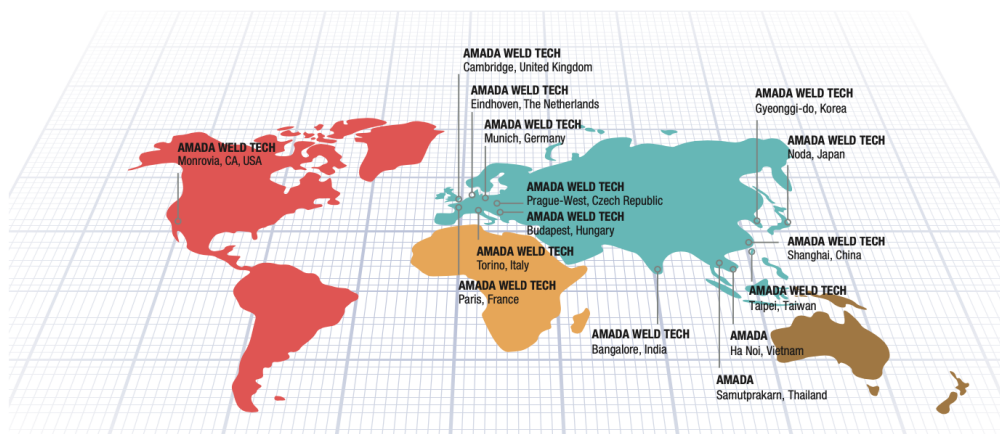
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