

HF2, HF2S

High Frequency Inverter Welders



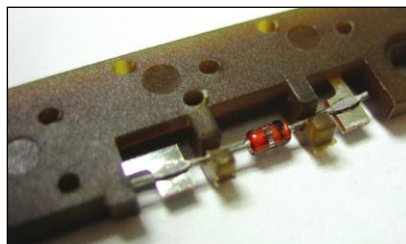
HF2 is a 2 KHz, three-phase, high frequency inverter **welder** designed for precision joining of small parts. High speed (250 ms) digital feedback automatically controls weld current, voltage, or power, ensuring weld consistent, repeatable welding, and has proven to extend electrode life in many applications by a factor of five or more. A selectable weld energy limiting feature also contributes to repeatable welds and high nugget quality.

The optional built-in Weld Sentry® weld monitor is capable of sophisticated weld data gathering and SPC computations and reporting.

KEY FEATURES

- Constant current, voltage or power control modes
- High weld repetition rates
- Spot, braze and seam welding applications
- Graphical and alpha-numeric user interface
- I/O communication ports for factory installation
- Small transformers facilitate easy integration
- Optional built-in Weld Sentry with SPC

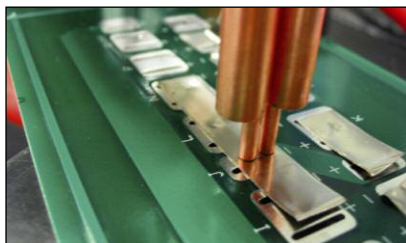
TYPICAL APPLICATIONS



Resistor to terminal



Seam welding



Brazing



Capacitor to lead frame

TECHNICAL SPECIFICATIONS

CONTROL SYSTEM	2 KHz pulse width modulated (PWM) inverter welding control with constant current, voltage or power feedback operating modes. Feedback response every 250 microseconds.
Line voltage Input circuit rating	Three phase, 208, 230, 380 or 460 VAC ±13%, 50/60 Hz HF2/208-50 A; HF2/230-50 A; HF2/380-30 A; HF2/460-30 A
Weld current	0.05 – 4.0 kA
Weld power	0.10 – 9.99 kW
Weld voltage	0.1 – 5.0 V
Weld period	2000 milliseconds (maximum)
Graphical weld display	Graphical display of programmed and actual weld current, voltage and power
Welding functions	10 functions – basic, braze, dual pulse, pre/weld/post heat, pulsation, quench/te per, roll-spot, weld/repeat, up/down slope and seam
Weld schedules	The user can save (write) 128 different weld schedules. Weld schedules 1 through 127 can be protected. Schedule 0 is designed to be used as a scratchpad for schedule development.
INPUT SIGNALS	
Remote control external input connector	Provides control for the following remote control signals: emergency stop, weld inhibit and remote weld schedule selection. Use dry relay contacts or optocouplers to control remote external input signals.
Firing switch	1-level footswitch, 2-level footswitch, 2-wire firing switch, 3-wire firing switch and opto-firing switch. Use dry relay contact or opto-couplers to control input signals.
OUTPUT SIGNALS	
Solid state relays	2 user-programmable solid state relays: AC-24/115 VAC @ 15 VA; DC-24 VDC @ 15 VA.
Valve driver outputs	2 solid state relay outputs for controlling air actuated weld heads. Valve #1 can control a single 24/115 VAC air head. Valve #2 can control a single 24 VAC air head.

HF2 TRANSFORMER MODEL	X3/4000A	X3/4/380A	X3/4/460A	X9/6000A	X11/4000A	X11/4/460
Nominal AC input voltage	208/240	400	480	208/240	208/240	400/480
Input KVA (50%) duty cycles	9	9	9	19	15	15
Number of primary taps	1	1	1	1	2	4
Turn ratio	46:1	90:1	109:1	32:1	25:1/30:1	**See note
Maximum unloaded output voltage (V)	6.5	6.5	6.5	9.3	10.0/12.0	11.8/14.3
Maximum output current (A)	4,000	4,000	4,000	6,000*	4,000	4,000
Duty cycle (%) at max. current	6	5	5	6	5	5

*HF2 can drive the X9/6000A up to 4,500A maximum.

**Turns Ratios: 44:1, 52:1, 60:1, 68:1

WEIGHT & DIMENSIONS

Model	Inverter	X3/4000A X3/4/380A X3/4/460A	X9/6000A	X11/4000A	X11/4/460
Dimensions (L x W x H)	15 in x 10.5 in x 8.5 in (381 mm x 267 mm x 216 mm)	14.5 in x 7.2 in x 7.2 in (368 mm x 183 mm x 183 mm)	12.7 in x 6.6 in x 7.8 in (322 mm x 168 mm x 197 mm)	17.9 in x 7.2 in x 7.2 in (455 mm x 183 mm x 183 mm)	18.5 in x 7.2 in x 7.2 in (470 mm x 183 mm x 183 mm)
Weight	42 lb (19 kg)	29 lb (13 kg)	33 lb (15 kg)	56 lb (25 kg)	58 lb (26 kg)



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