

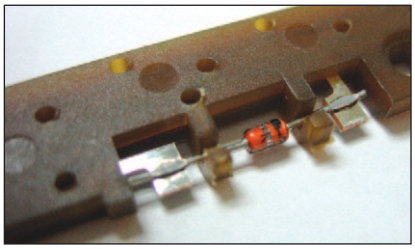
HF2
High Frequency Inverter Welder

HF2 is a 2 kHz, three-phase, high frequency inverter welder designed for precision joining of small parts. High speed (250 µs) 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.

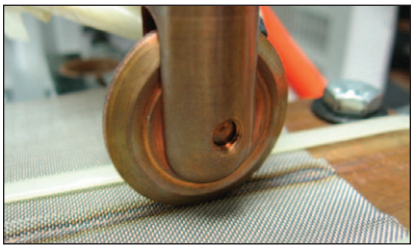
KEY FEATURES

- 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

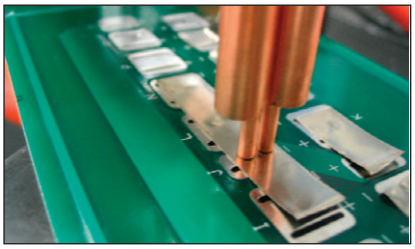
TYPICAL APPLICATIONS



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	See table below
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/temper, 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	IT-X11B/230	IT-X11B/380/460		IT-1040HF2-3	IT-4040HF2-3	IT-1140HF2-3	IT-4140HF2-3
Cooling	Air	Air	Air	Water	Water	Water	Water
Nominal AC input voltage	230	380	460	230/460	380	460	380
Rated kVA (50%) duty cycles	12	16	20	40	40	140	140
Primary number of taps	4	4	4	2	2	2	2
Turn ratio	30:1 40:1 45:1 55:1	40:1 50:1 55:1 65:1	40:1 50:1 55:1 65:1	**230 VAC -** 38:1 **460 VAC-** 76:1	58:1 116:1	50:1 72:1	55:1
Max unloaded secondary voltage [V]	10.4 7.7 6.7 5.5	13.0 10.3 9.4 7.8	15.8 12.6 11.4 9.6	**230 VAC-** 8.5 **460 VAC –** 8.5	9.3 4.6	13.0 9.03	9.77
Maximum output current (A)	5,000	5,000	5,000	**230 VAC –** 6100 **460 VAC-** 9800	9300 9800	8000 9800	8800
Duty cycle (%) at max. current	6**	6**	6**	10*	10*	10*	10*

*NOTE: Max current limited by secondary resistance *Limited by HF2 thermal rating **Limited by transformer thermal rating*

WEIGHT & DIMENSIONS

Model	HF2 Inverter	IT-1040HF2-3, IT-4040HF2-3	IT-4040HF2-3, IT-4140HF2-3	IT-X11B/230, IT-X11B/380, IT-X11B/460
Dimensions (W x D x H)	10.5 in x 15.0 in x 8.5 in (267 mm x 381 mm x 216 mm)	7.0 in x 15.5 in x 6.8 in (178 mm x 394 mm x 172 mm)	8.5 in x 19.6 in x 5.0 in (216 mm x 497 mm x 127 mm)	7.3 in x 18.8 in x 7.3 in (184 mm x 476 mm x 184 mm)
Weight	42 lb (19 kg)	51 lb (23 kg)	88 lb (40 kg)	58 lb (26 kg)

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