

HF2, HF2S

High Frequency Inverter Welders



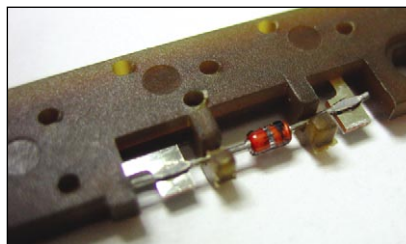
HF2 is a 2 kHz, three-phase, high frequency **inverter welder** designed for precision joining of small parts. High speed (250 μ s) digital feedback automatically controls weld current, voltage, or power, ensuring weld consistent, repeatable welding, and has proven to extend electrode life in many applications 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 S with SPC

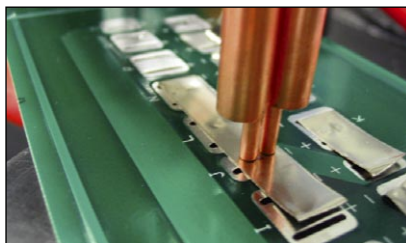
TYPICAL APPLICATIONS



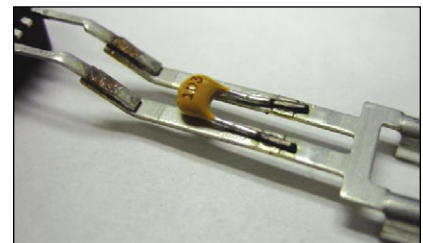
Resistor to terminal



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	Three phase, 208, 230, 380 or 460 VAC ±13%, 50/60 Hz
Input circuit rating	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/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	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	
Nominal AC input voltage	230	380	460	230/460	380	460	
Rated kVA (50%) duty cycles	12	16	20	40	40	140	
Primary number of taps	4	4	4	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 – 7600 460 VAC - 8800	9500 4700	9900 9200	9900
Duty cycle (%) at max. current	6**	6**	6**	10*	10*	10*	10*

NOTE: Max current based on 250 micro-ohm secondary *Limited by HF2 thermal rating **Limited by transformer thermal rating

WEIGHT & DIMENSIONS

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



AMADA WELD TECH INC.

USA
1820 S. Myrtle Ave. • Monrovia, CA 91016 US
T: (626) 303-5676
info@amadaweldtech.com • www.amadaweldtech.com
ISO 9001 Certified Company • 24/7 Repair Service: 1-866-751-7378

AMERICAS

AMADA WELD TECH
(Eastern Technical Center)
High Point, North Carolina
T: (941) 544-5762
southsales@amadaweldtech.com

AMADA WELD TECH
(Mexico Office)
El Paso, Texas
T: (915) 881-8765
mxsales@amadaweldtech.com

AMADA WELD TECH
(Midwest Technical Center)
Detroit, Michigan
T: (248) 313-3078
midwestsales@amadaweldtech.com

EUROPE
AMADA WELD TECH
GmbH
Munich, Germany
T: +49-89-839403-0
infode@amadaweldtech.eu

ASIA

AMADA WELD TECH CO., LTD.
Isehara, Japan
T: +81-4-7125-6177
sales@miyachi.com

AMADA WELD TECH
SHANGHAI CO., LTD.
Shanghai, China
T: +86-21-6448-6000
syli@amadaweldtech.com.cn
zqzhang@amadaweldtech.com.cn

AMADA WELD TECH KOREA CO., LTD.
Seoul, Korea
T: +82-31-8015-6810
sales@amadaweldtech.co.kr

AMADA WELD TECH
TAIWAN CO., LTD.
Taipei, Taiwan
T: +886-2-2585-0161

AMADA (THAILAND) CO., LTD.
Bangkok, Thailand
T: +66-2170-5900
info@amada.co.th

AMADA VIETNAM CO., LTD.
Ha Noi, Vietnam
T: +84-4-6261-4583

AMADA WELD TECH
INDIA PVT., LTD.
Bangalore, India
T: +91-80-4092-1749
info@miyachiindia.com

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