

# resistance welding

# HF2, HF2S High Frequency Inverters

- 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



Easy-to-use constant weld current, voltage, or power feedback ensures repeatable welding and has been proven to reduce part deformation, reduce weld splash, and extend electrode life in many applications by a factor of five or more. Users can program the HF2 using a graphical or alpha-numeric interface. The graphical Run Mode gives the user instant visual feedback on the actual current, voltage, or power used to make each weld. The HF2's exclusive, context-sensitive, help screens quickly guide the user through even the most complex program.

Operators can program up to 128 different weld schedules. Each weld schedule can use any one of 10 different weld functions, thus matching the appropriate weld energy profile to the application.

Simple automated welding control is easily accomplished using the BCD remote schedule select feature. A standard, addressable, RS485 data communications port allows the retrieval of weld monitor information such as voltage and current under computer control. The optional built-in Weld Sentry is capable of sophisticated weld data gathering and SPC computations and reporting.

## TYPICAL APPLICATIONS



Seam Welding



Brazing

## HF INVERTERS HF2 & HF2S SPECIFICATIONS

The HF2S includes the Miyachi Unitek Weld Sentry which adds weld monitoring with SPC capability to the HF2. The Weld Sentry measures changes in weld voltages and current over definable time measurement windows and compares the results to user defined limits. The Built-in Weld Sentry can identify electrode oxide build-up and wear, isolate potential quality problems, detect missing or mispositioned parts, perform SPC analysis, and help meet total quality control (TQM) and ISO 9000 requirements. For more detailed information on the Weld Sentry 2, request literature 991-091.

<b>CONTROL SYSTEM</b>	2KHz Pulse Width Modulated (PWM) DC welding control with constant current, voltage or power feedback operating modes. Feedback response every 250
<i>Line Voltage</i>	Three Phase Delta, 208, 230, 380 or 460 VAC ±13%, 50/60 Hz power source.
<i>Input Circuit Rating</i>	HF2/208-50A; HF2/230-50A; HF2/380-30A; HF2/460-30A.
<i>Weld Current</i>	0.05 – 4.0 kA
<i>Weld Power</i>	0.10 – 9.99 kW
<i>Weld Voltage</i>	0.1 – 5.0V
<i>Weld Period</i>	2000 milliseconds (maximum)
<i>Graphical Weld Display</i>	Graphical display of programmed and actual weld current, voltage and power.
<i>Welding functions</i>	10 functions – basic, braze, dual pulse, pre/weld/post heat, pulsation, quench/temper, roll-spot, weld/repeat, up/down slope and seam, selectable by graphical or alpha-numeric user interface.
<i>Weld Schedules</i>	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.
<b>INPUT SIGNALS</b>	
<i>Remote Control External Input connector</i>	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.
<i>Firing Switch</i>	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.
<b>OUTPUT SIGNALS</b>	
<i>Solid State Relays</i>	2 user programmable solid state relays: AC-24/115 VAC @ 15VA; DC-24 VDC @ 15VA.
<i>Valve Driver Outputs</i>	Two 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.
<b>PHYSICAL CHARACTERISTICS</b>	
<i>Dimensions – L x W x H Inches (mm)</i>	15 x 10.5 x 8.5 (381 x 267 x 216)
<i>Weight – Lbs (Kg)</i>	42 (19)

## HF2 TRANSFORMER SPECIFICATIONS

Model	Nominal AC Input Voltage	Input KVA (50%) Duty Cycles	Number of Primary Taps	Turn Ratio	Maximum Unloaded Output Voltage (V)	Maximum Output Current (A)	Duty Cycle (%) at Max. Current	H x W x D In. (mm)	Weight Lbs (kg)
X3/4000A	208/240	9	1	46:1	6.5	4,000	6	7.2 x 7.2 x 14.5 (183 x 183 x 368)	29 (13)
X3/4/380A	400	9	1	90:1	6.5	4,000	5	7.2 x 7.2 x 14.5 (183 x 183 x 368)	29 (13)
X3/4/460A	480	9	1	109:1	6.5	4,000	5	7.2 x 7.2 x 14.5 (183 x 183 x 368)	29 (13)
X9/6000A	208/240	19	1	32:1	9.3	6,000*	6	7.8 x 6.6 x 12.7 (197 x 168 x 322)	33 (15)
X11/4000A	208/240	15	2	25:1/30:1	10.0/12.0	4,000	5	7.2 x 7.2 x 17.9 (183 x 183 x 455)	56 (25)
X11/4/460	400/480	15	4	**See Note	11.8/14.3	4,000	5	7.2 x 7.2 x 18.5 (183 x 183 x 470)	58 (26)

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

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

## ORDERING GUIDE

<i>Specify HF2</i>	Add/XXX for line voltages other than 230 VAC, where XXX is the line voltage. Example: HF2/208 for 208 line voltage operation.
<i>Specify HF2S</i>	For built-in Weld Sentry.
<i>Required Accessories:</i>	Transformer, welding head, footpedal for manual weld heads, footswitch for air weld heads.

Your Local Representative



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