

1. Orbital 4000 orbital welding power source

1.1 Overview

The Orbital 4000 distributed orbital welding power source is an automatic programmable power source designed by Huaheng Welding Co., Ltd. adopting the world's most advanced technology. This power source is composed of the three following items: power system and control, water cooling tank and integrated truck. This power source has the characteristic of advancement, digitization, intellectualization, generality, reliability and easy to operate. PC control is adopted for the control system. It is an open and upgradable 32 digits embedded operating system. The power source has an industrial PC with DSP chip inside which make the entire welding process very user friendly. This power source is designed for tube/tube, tube to tube/sheet welding. It could be used with all TC products, TOK products, TOA products, TP060/TP040 welding head and external wire feeding machine that manufactured by Huaheng Welding Co., Ltd. It could also be used together with GTX products and other special projects system through upgrade. It usually applies in the tube/tube, tube to tube-sheet welding of chemical industry, food industry, medical industry, electric pipeline, all sorts of heat exchangers, engineering machinery, boiler, military industry and nuclear power industry.



1.2 Characteristics and performance

- Adopts Windows embedded operating system, easy to operate.
- Easy to save and replace welding procedure programs. 999 programs of different welding parameters could be stored.
- Step rotation for current and wire feeding.

- 20 levels and the parameters could be changed according to technology requirements. Real time AVC is adopted and three tracking modes which are: peak-value tracking, base value tracking, peak-value and base-value tracking.
- Memory function of parameter adjusting is adopted. Easy to store and display the adjusted parameter during the process of welding.
- Simulation function is provided during the process of welding. Easy to discover the disadvantages in the actual welding process in advance.
- Real time display for the controller. User could view all kinds of states during the process on the controller. The OSC speed, OSC center, OSC width, current and other welding parameters could be adjusted anytime during the process of welding to meet special requirements.
- Time and angle switch can be realized.
- Arc ignition current and arc retraction current settings.
- Simple programming interface and welding technology control. Easy to operate.
- Welding voltage/current/distance/degree real time display. Easy to realize automatic attenuation.
- Precisely setting for the distance between the tungsten electrode and work-piece. Touch-lift value setup. Two types of arc ignition: high frequency arc ignition and touch-lift arc ignition. Choose one type through programming.
- Equipped with water cooling system to make sure the system operates continuously.
- Improved failure detection intelligent control.
- Chinese/English interface
- Optional off-line programming software is available.

1.3 Parameters for power source

Type	Inverter
Welding Current	5A to 400A
Duty Cycle (20°C)	400A, 60% and 310A, 100%
Open Circuit Voltage	80V
Input Voltage	415V±15%
Frequency	50Hz
Power	34 KW
Power factor	0.98
Recommended power distribution box	50 KVA
Work period	10 minutes
Insulation Protection	F/IP21S
Working Temperature	-10°C to 40°C
Power source cooling	Fan
Welding head cooling	Water/Coolant
Display	Industry PC, 7" Industrial touch screen
Program storage	200
Programmable sections/levels	20
Control Function	Gas control
	Current control
	Rotation control
	Wire feeding control
	OSC
	AVC
	Failure detection intelligent control
Internal Memory	4GB
Print	Integrated printer
Water Pump Head	30m/0.3Mpa

Water Tank Volume	15 L
Weight (without refrigerant)	110Kg
Appearance/Dimensions	1081mm×990mm×455mm
Transportation and storage temperature	-25°C to 55°C
Manufacturing Standards	GB15579-2004 IEC60974
Class of electric-magnetic compatible	A