ALTA™ RF POWER-DELIVERY SYSTEMS

DIGITALLY CONTROLLED 6 kW 13.56 MHz RF POWER SUPPLY WITH INDUSTRY LEADING FREQUENCY TUNING AND ARC MANAGEMENT

RF Industrial Solution

With full digital control and dynamic response to plasma changes, the ALTA RF power delivery system keeps you at the leading edge of process innovation.

As manufacturing technologies evolve and rapid plasma transitions become the norm; the highly adaptable ALTA platform facilitates advanced process development. It combines accurate, repeatable power delivery with an inherently flexible digital architecture, wide output coverage, and a comprehensive feature set design for robust and reliable operation in any manufacturing or research environment.

BENEFITS

- Enhanced plasma stability and process repeatability
- Precise RF control
- Fast response to plasma changes
- Flexibility and adaptability to meet specific application needs

FEATURES

- Frequency tuning
- Real-time power and impedance measurement
- Tightly regulated output power
- Arc management
- Phase synchronization (CEX)
- Easy handling and installation

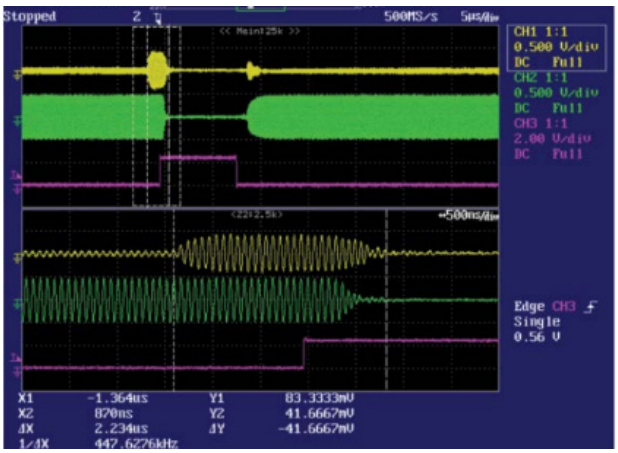
TYPICAL APPLICATIONS

- PECVD
- Sputtering
- Pretreatment
- Power Supply for RF Ion Source Applications (ICP, IBS, IAD)

Digital Architecture

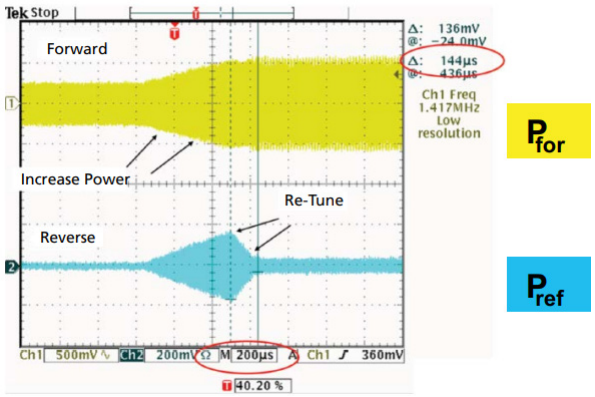
The ALTA platform's digital architecture allows extremely precise process measurement and control, as well as the adaptability to keep pace with increasing manufacturing demands. Advanced functions are easily integrated - without the lead times and integration issues associated with products requiring hardware changes.

Arc Management



- Protect your process with fast, effective arc management technology.
- Reduce particle contamination, feature distortion, and equipment damage.
- Rapid output power shutdown extinguishes arc events to prevent process interruptions.
- Arc suppression can be synchronized for multiple generators, maximizing effectiveness of arc control.

Frequency Tuning

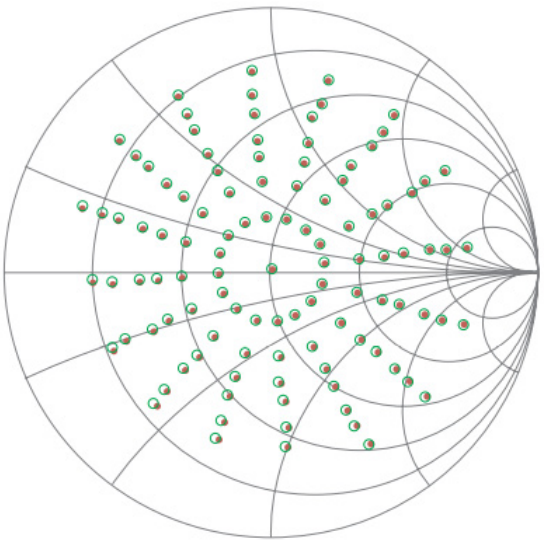


Above, reflected power is minimized ~150 µsec after plasma power set point change.

- Reduce tune time for faster ignition and plasma stability.
- Prevent excessive shift in impedance.
- Matching network adaptable.
- Settable tune thresholds and intelligent retuning technology.
- Fast tuning and repeatable power delivery during short process steps.

Advanced Power Impedance Measurement

ALTA RF power supplies measure plasma characteristics in real time and detect changes with extreme sensitivity. This enables high-accuracy power output and repeatable performance.



ALTA Power and Impedance Measurement Rivals the Accuracy of a Network Analyzer.

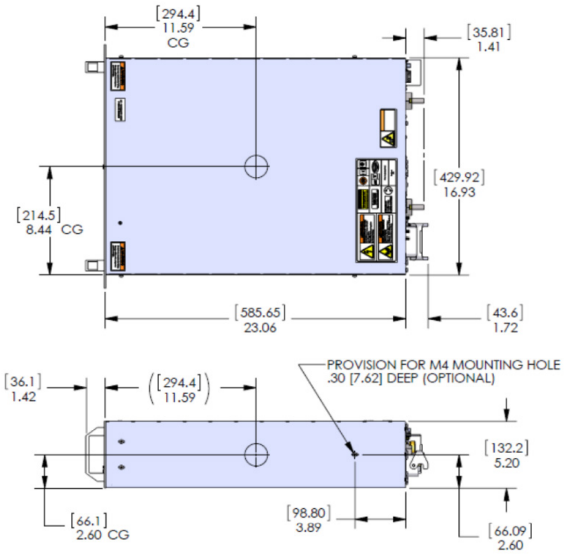
Basic Specifications

General Specifications	
RF Power	6 kW
Frequency	13.56 MHz
Typical Tune Time	< 10 ms
Power Accuracy into 50Ω	±1 W or ±1% of set point, whichever is greater. Into 3:1 VSWR: ±1 W or ±2% of set point, whichever is greater.
Available Serial Interfaces	RS-232, Ethernet, DeviceNet®, Profibus, Profinet, EtherCAT®
Input Voltage	400 - 480 VAC, 60 Hz
Cooling	Air & Water

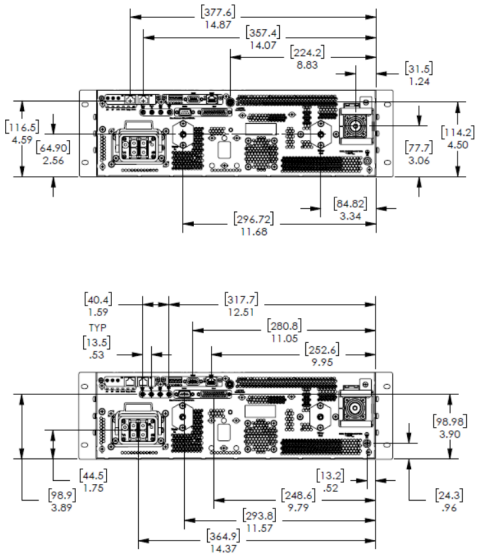
Dimensions

Unit: [mm] inch

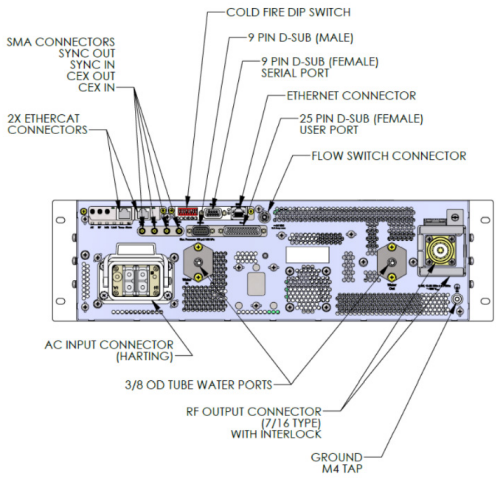
Top and Side Dimensions



Rear Panel Dimensions



Rear Utilities and Connections



ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE

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