

# ASCENT<sup>®</sup> AMS II DC POWER SUPPLY

STABLE, REPEATABLE POWER | WATER COOLING | EMBEDDED IOT INTELLIGENCE





# WATER-COOLED DESIGN

Reduced noise

No external air exchange

Unchanged dimensions  
compared to Ascent AMS



# Ascent AMS II DC Power Supply

New materials and cathode designs increasingly challenge process stability and film repeatability. At the same time, larger deposition areas heighten power requirements and potential arc-related damage. Ascent AMS II provides stable, repeatable power regardless of process setup or conditions. Its Arc Management System™ (AMS) technology and onboard, embedded IoT intelligence maximize productivity and throughput. This low-noise, water-cooled design with expanded operating range also increases reliability, process capability, and installation flexibility.

## BENEFITS

- High film quality and throughput
- Reduced film, substrate, and equipment damage
- Easy integration and control
- Fast scaling to achieve high power levels

## FEATURES

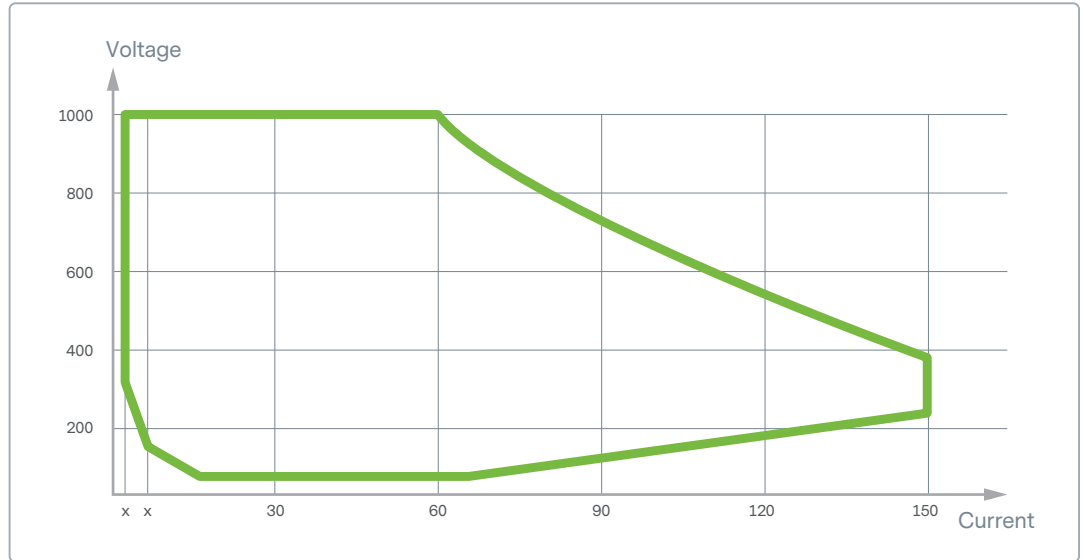
- Water cooled
- Modular and scalable
- Embedded PowerInsight by Advanced Energy™ IoT intelligence
- Wide mains voltage range
- Expanded operating range
- Arc Management System™ (AMS) technology — customer pre-sets for metal and ceramic targets
- Set Point Compensation™ technology
- Arc-Sync™ technology — primary/secondary up to 12 units
- Ethernet, EtherCAT®, Profibus, RS-232/485, Ethernet/IP, and analog communications

## APPLICATIONS

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

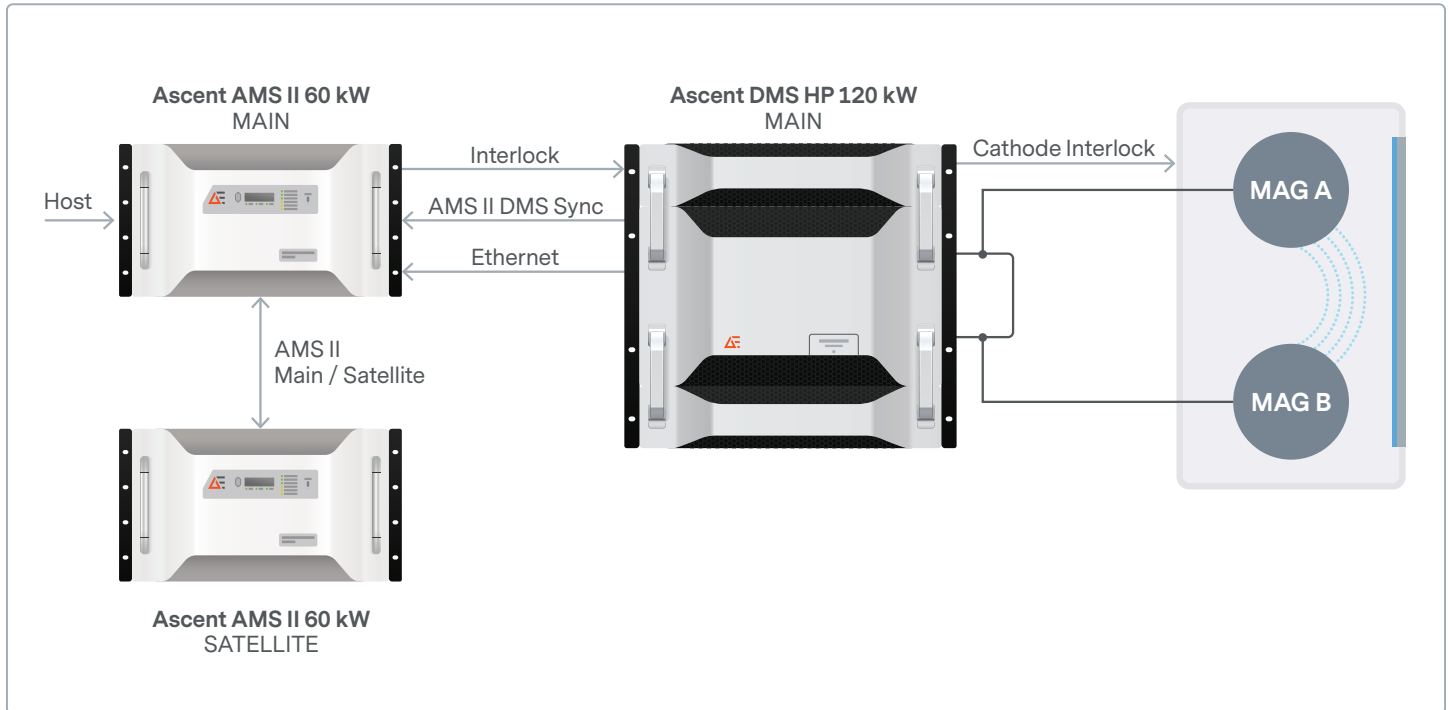
## Expanded Operating Range

The expanded operating range of Ascent AMS II increases process capabilities and supports innovation. It also fulfills any input requirement, anywhere in the world, with a single part number - simplifying tool installation.



## Modular, Scalable Power

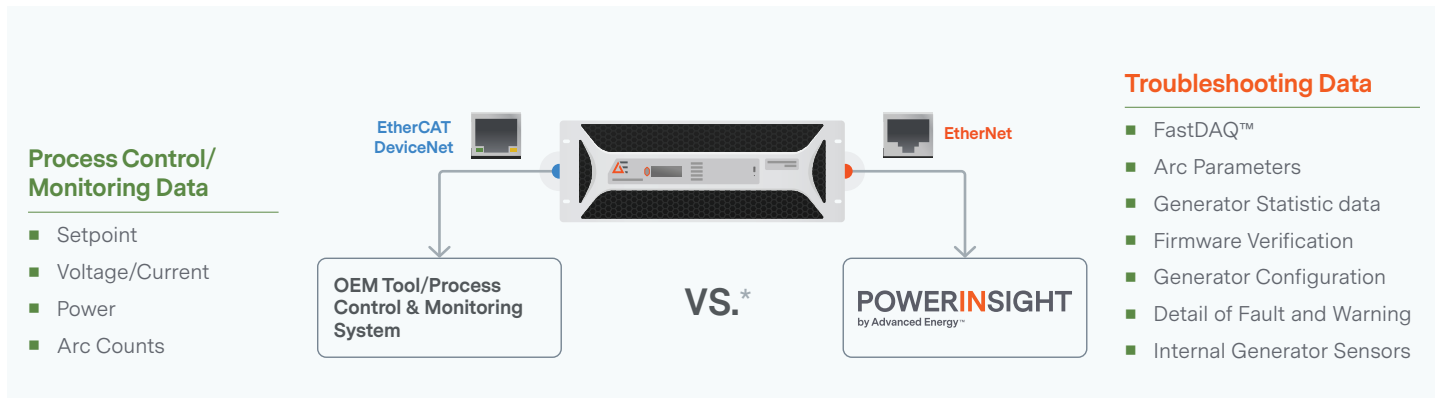
Achieve high power levels for larger deposition areas.



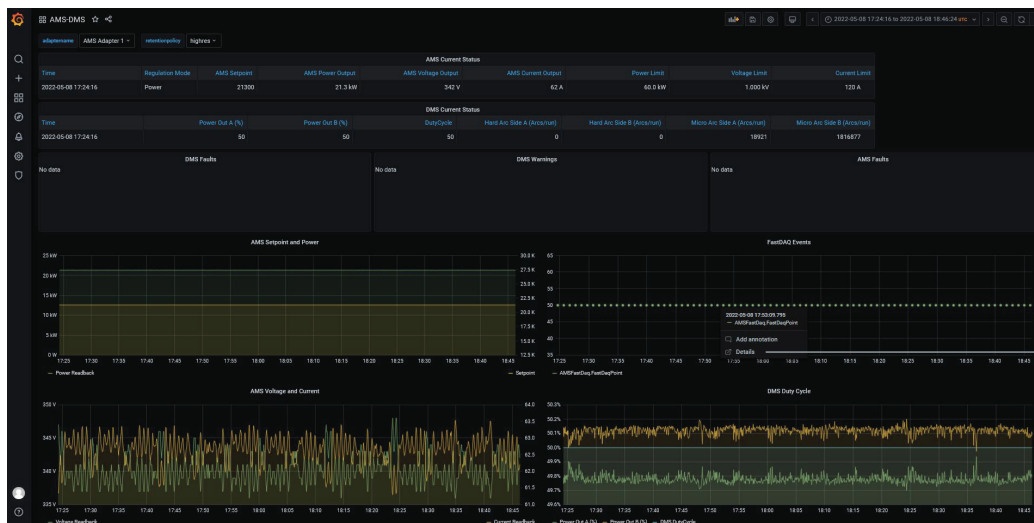
Example 120 kW configuration with Ascent DMS HP

# Embedded PowerInsight by Advanced Energy™ IoT Platform

Onboard IoT intelligence minimizes troubleshooting time and "NPO" returns.



\*Using DC power supply as an example for comparison



Click on 'Details' to have a closer look at the FastDAQ event.



Trigger source (configurable)

Trigger position (configurable)

Select data field

Move between events

Data export

Zoom in directly on the plot

## Arc Management System™ Technology

AE’s proprietary AMS (Arc Management System) technology preserves film quality and repeatability, even under extreme arcing conditions. These enhanced arc handling capabilities enable success with newer materials, such as AZO and IGZO.

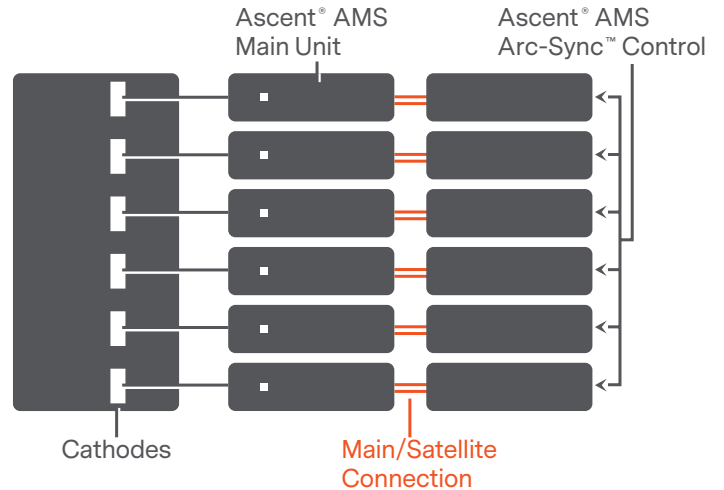
- Automatic arc handling eliminates need to adjust arc management parameters.
- Primary arc response quickly removes power from arcs.
- Secondary arc response cools surface and quenches secondary arcs.
- Controlled power recovery minimizes over-shoot and secondary arcs.
- Low stored energy — less than 0.4 mJ per kW— reduces arc impact on the process.

## General Specifications

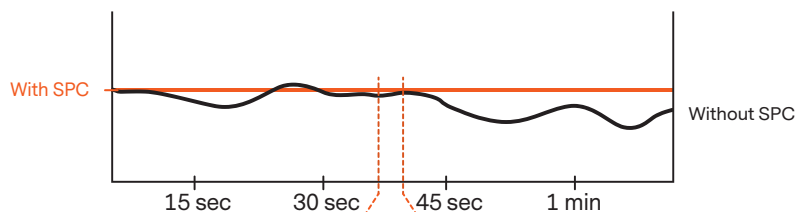
	Ascent AMS II
Input Power	360 to 528 VAC, 50/60 Hz
Output Voltage	Up to 1000 V
Output Current	Up to 150 A
Min Output Current	2 A at 600 W
Max Output Current	150 A
I/O Communication	Ethernet, EtherCAT®, Profibus, RS-232/485, EtherNet/IP, and analog
Mounting	48.26 cm (19"), rack mountable, 6 U height
Cooling Water Temperature	35°C (95°F) max
Width	19" Full Rack
Height	6 U
Power Level	60 kW

## Arc-Sync™ Technology

For use with multiple-cathode systems, Arc-Sync technology coordinates the arc responses of up to 12 connected Ascent AMS units (up to 720 kW).

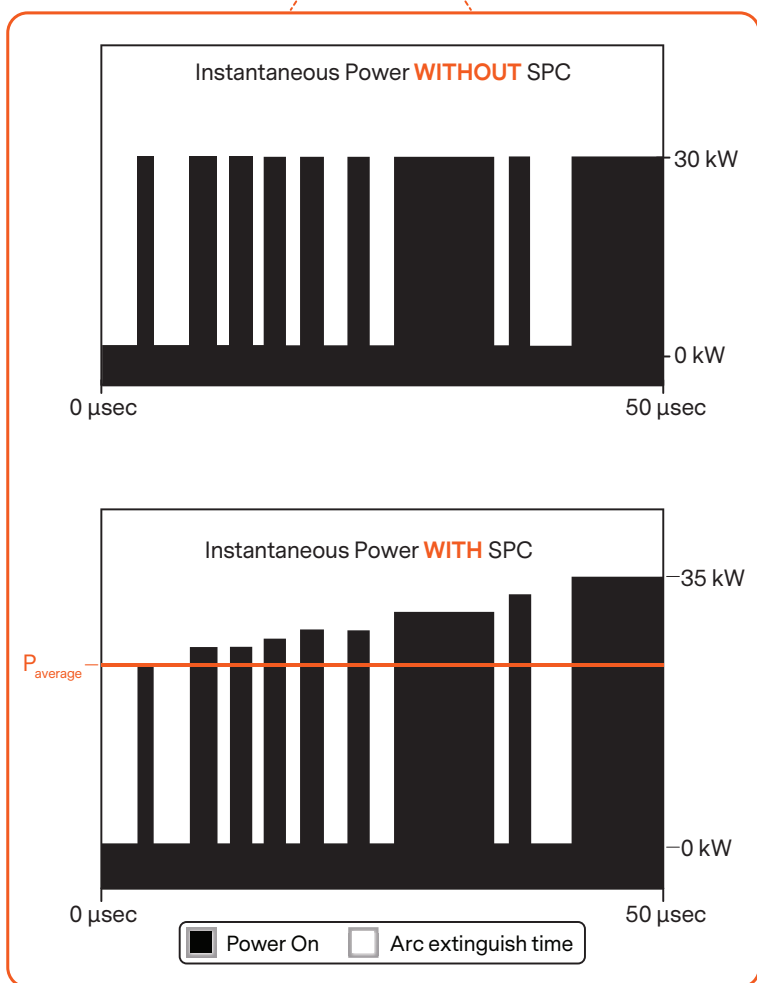


Power Delivery Over Time



## Set Point Compensation™ Technology

Ascent AMS II power supplies feature a patented algorithm that improves power-delivery repeatability and maintains sputter rate by automatically adjusting power output to compensate for arc shutdowns.





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## 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 | TRUST

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