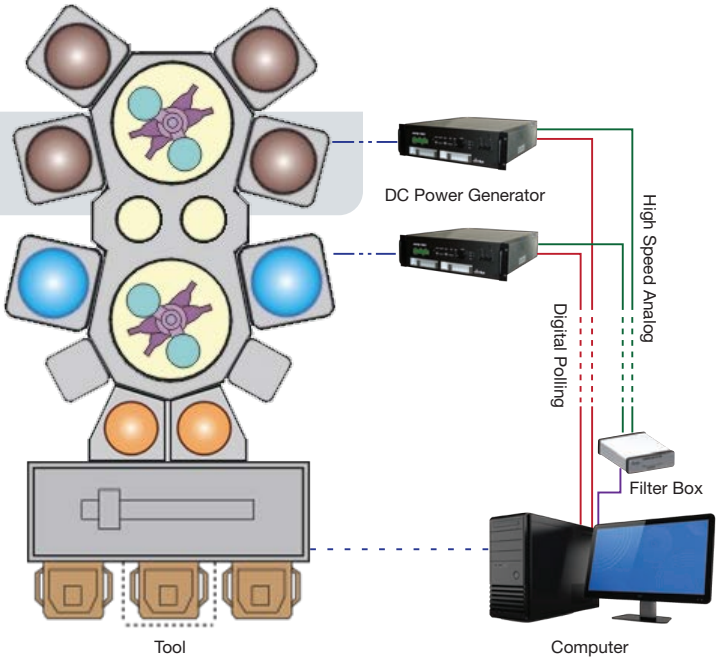
AMDS-1000

Arc Monitoring and Detection System

MKS' AMDS-1000 system prevents equipment damage and improves wafer yield during Physical Vapor Deposition (PVD) processing by providing fast, reliable and comprehensive plasma monitoring and detection of arcing events. The AMDS-1000 family has models that monitor arc events lasting a few microseconds, detect hard arcs lasting over 100 microseconds, and provide combined arc monitoring and detection capability during the entire plasma process.

All models connect to the DC generator to poll arc events, gather power information, and support 1-4 chambers per tool. MKS' Process Eye™ Professional Residual Gas Analyzer software handles data acquisition, interpretation, recall and intelligent alarming when used with the AMDS-1000 system. MKS' TOOLweb® supports full alarm and data reporting to the fab and Fault Detection and Classification (FDC) of micro and hard arcs during PVD processes including but not limited to Al pad PVD, hard mask PVD, and Cu seed/barrier PVD.



Product Features

- Analog, digital and combined communication protocols
- Ability to detect micro arcs lasting several microseconds and hard arcs over hundred microseconds
- Analyzes arc data and extracts severity and magnitude in real-time
- Monitors or detects arcs in the whole plasma processing including plasma ignition and power transition
- Multiple chamber support
- Works with MKS Process Eye Professional Residual Gas Analyzer software for data acquisition, interpretation, recall, and intelligent alarming
- Provides automated monitoring of semiconductor tools when combined with TOOLweb RGA software

Key Benefits

- Improve wafer yield and reduce tool damage through production intervention and root cause analysis by capturing micro and hard arcs in real-time
- Reduce false alarms by validating arc events when using combined analog and digital communication
- User configurable recipe wizard supports customized warnings and alarms

Specifications

	Model AMDS-1000D	Model AMDS-1000A	Model AMDS-1000AD
Capability	Monitor micro and hard arc events	Detect hard arcs using high-speed DAQ	Detect micro and hard arcs during the entire plasma process
Connection Type	Digital port	Analog interface	Digital port and analog interface
Maximum Sampling Frequency	Up to 10Hz	Up to 250KHz	Up to 10Hz for digital, 250KHz for analog
Channels per Chamber	Five (micro arc, hard arc, power, voltage and current)*	Two (voltage, power)	Seven (five for digital*, two for analog)
Chambers per Computer	Four	Four	Four
Signal Cable**	RS232 cable	Ethernet cable	RS232 cable, Ethernet cable

* Varies with the generator.
** Cable length for RS232 and Ethernet is 30 meters.

Model	Description	Part Number*
AMDS-1000D	Digital Polling Arc Monitor	TWR-ARC-AXX
AMDS-1000A	Analog High-Speed Arc Detection	TWR-ARC-BXX
AMDS-1000AD	Arc Monitoring and Detection with Both Digital Polling and Analog	TWR-ARC-CXX

Tool Integration	Description	Part Number
Tool Integration	Software, hardware and integration (X)	TWR-100-20X
• Software	Process Eye or TOOLweb RGA	330100120
• Hardware	Computer	106132388
• Integration		
A	User providing or no integration or added on	—
B	SECS/HSMS protocol multiplexing unit (RMU)	KT10013G-02
C	RGA SECS port	100100001

* Please note that XX stands for the number of chambers (for example XX = 01, 02, 03, 04).

Ordering Information

Please contact your local MKS office for price and availability information.

www.MKSINST.com
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Arc Monitor Detection_04/20