

Vacuum & Analysis Division



AUTOMATION & CONTROL SOLUTIONS

MKS provides advanced automation solutions including controllers & I/O devices, software & analytics for Industry 4.0 and smart factory automation, and custom control systems. The MKS automation portfolio enables advanced process control by providing EtherCAT® connectivity, programmable safety, multizone temperature control, edge analytics, and IoT/cloud connectivity.



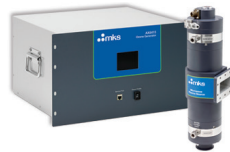
FLOW SOLUTIONS

MKS provides gas flow and delivery products including mass flow controllers and in-situ mass flow verifiers to precisely measure and control gas flow. Upstream pressure controllers with integrated mass flow meters provide pressure measurement and control while monitoring mass flow rates for critical process applications. MKS flow ratio controllers accurately and repeatedly divide gas flows into precise flow streams. EtherCAT is available on select products.



GAS ANALYSIS

MKS provides gas analysis solutions for real-time vacuum quality control, contamination detection, process monitoring, and compositional analysis. Products offered include residual gas analyzers (RGAs), process RGA systems, atmospheric pressure mass spectrometers, and optical gas analyzers. MKS also offers flexible and scalable software platforms to leverage sensor data and enable powerful process optimization and monitoring capabilities for advanced manufacturing environments.



PLASMA & REACTIVE GAS SOLUTIONS

MKS provides plasma systems that deliver fluorine, oxygen and hydrogen radicals. MKS manufactures ozone generators that produce ultra-pure, high concentration ozone gas. Our dissolved gas delivery systems supply high concentration ozonated water, dissolved CO₂, and NH₃. In addition, MKS designs and manufactures high power microwave subsystems that generate power levels from 1 to 75kW. EtherCAT is available on select products.



POWER SOLUTIONS

MKS provides high reliability RF power and microwave generators. Our RF generators deliver solid state power from low to very high frequencies (VHF) and combined with our Impedance Matching Network and V/I probe provide a complete RF delivery system. Our industrial microwave generators and systems generate power levels from 1 to 75kW and are adaptable to a wide range of applications.



PRESSURE & VACUUM MEASUREMENT SOLUTIONS

MKS provides pressure and vacuum measurement products. MKS Baratron capacitance manometers provide highly accurate and repeatable direct pressure measurement and are insensitive to gas composition. In addition, MKS has a wide range of indirect pressure sensors, transducers and modules that use hot and cold cathode, Piezo and Pirani gauge technologies. These products measure pressure in corrosive and noncorrosive environments over 14 decades of range from above atmospheric to ultra-high vacuum. EtherCAT is available on select products.



VALVES & INTEGRATED PROCESS SOLUTIONS

MKS provides a variety of vacuum valves including butterfly valves for pressure control, isolation valves and gate valves. Heated and unheated configurations are available as well as specialty valves for high cycle count and highly corrosive environments. In addition, MKS provides integrated vacuum solutions including complete turn-key solutions for foreline effluent management with heater jackets and controllers, process traps, virtual walls, and integrated vacuum measurement and control assemblies. EtherCAT is available on select products.

Light & Motion Division



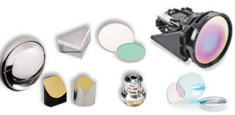
INSTRUMENTS, MOTION, COMPONENTS & VIBRATION CONTROL

MKS provides a wide range of high precision motion control products including linear and rotation stages, hexapods, controllers, piezos and industrial OEM sub-assemblies. In addition, MKS offers vibration isolation solutions, specialized light sources, laser power measurement and beam characterization instruments, and other instruments including optical to electrical converters, solar simulators and laser diode control, which are all used in photonics applications. Products used to mount, position, or support optical components and systems are also part of the MKS offering.



LASERS

MKS develops and manufactures advanced pulsed and continuous wave diode-pumped solid-state, fiber and hybrid fiber lasers for precision applications. Pulse widths span nanosecond, picosecond, and femtosecond, and wavelengths range from infrared and visible to the ultraviolet.



OPTICAL COMPONENTS & INTEGRATED SOLUTIONS

MKS provides precision optical components and optical assemblies across the infrared, visible and ultraviolet spectrum. In addition, MKS provides custom subsystem solutions. Products include optical filters, thin film coatings, high performance gratings, replicated mirrors, windows, spherical, aspherical and cylindrical lenses, long-range zoom lenses, laser optics, and refractive, reflective, catadioptric optical assemblies on a build-to-print or build-to-spec basis.



FIBER-OPTIC SENSING SOLUTIONS

MKS provides fiber-optic sensing solutions for high-precision measurement of temperature and position in extreme environments with high RF power, high temperature, vacuum, plasma and reactive gases.

Equipment & Solutions Division



PCB MANUFACTURING SOLUTIONS: FLEX

MKS provides a family of systems for flexible PCB laser processing. Driven by latest-generation laser technology and unique laser control capabilities, these flex PCB systems deliver high-speed laser processing of flexible PCBs and flex interconnects. Depending on the application and materials used in production, there is a flex system that delivers the quality, accuracy and production throughput to meet the customers' needs.



PCB MANUFACTURING SOLUTIONS: RIGID

MKS provides a microvia drilling system for high-speed HDI laser processing for rigid PCB manufacturing, IC packaging and substrate processing. Leveraging latest-generation CO₂ laser technology, the Geode system delivers superior accuracy, high yields and production throughput in a light-weight platform with a low cost-of-ownership.



HIGH-SPEED MLCC TESTING SOLUTIONS

MKS provides the line of Allegro systems for high-volume, multi-layer ceramic capacitor (MLCC) testing. The Allegro systems can accommodate a wide range of chip sizes. They also leverage decades of MLCC test expertise and incorporate MKS' MLCC testing technology to deliver high-accuracy, high-speed testing of over 1 million chips per hour. MKS also offers consumables and custom-manufactured replacement parts and consumables for MLCC test and termination processing equipment.