

MASS FLOW CONTROLLERS & METERS

APPLICATION-SPECIFIC INTEGRATED SOLUTIONS
FOR ADVANCED MATERIALS DELIVERY



MASS FLOW CONTROLLERS & METERS

THERMAL AND PRESSURE BASED SENSOR TECHNOLOGIES

Enabling our customers to bring their products and processes to market faster, more reliably, and more cost effectively is at the heart of our flow measurement and control product design philosophy. MKS offers a wide range of mass flow controllers and meters available in thermal and pressure based sensor technologies, analog and digital communication, and metal or elastomer seals.

- High accuracy
- Quality protection
- Peak performance
- Advanced materials delivery
- Application-specific integration
- Well-suited for a variety of applications



G-SERIES

General Purpose Mass Flow Controllers/Meters

- Flow rates from 5 to 50,000 sccm
- Wide choice of digital (EtherCAT®, DeviceNet™, Profibus®, PROFINET and RS485) or analog (0-5 VDC or 4-20 mA) I/O
- Embedded user interface
- Percent of setpoint accuracy
- Patented thermal sensor
- MFC models include: GE50A, GM50A/GM51A, GV50A, GM100A, GE250A/GE300A
- MFM models include: GM50A/GM51A, GM100A, GE250A/GE300A

P-SERIES

High Performance Mass Flow Controllers/Meters

- Burst pressure of 1500 psig
- Measurement range of 0.1% to 100% of Full Scale
- Resolution of 0.1% of Full Scale
- 10°C to 50°C operating temperature
- Temperature accuracy of ±2°C
- Typical accuracy of ±1% of set point for 20%-100% Full Scale and ±0.2% of Full Scale for 2%-20% Full Scale
- Models include: P4B, P9B

C-SERIES

Compact Ultrafast Mass Flow Controller/Meters

- Ultrafast response time of <100 msec
- Measurement range from 0.1 to 100% of Full Scale
- Accuracy of ±0.8% of set point
- Minimal zero and span drift
- Surface mount interface available for compact gas panel design
- Embedded web browser for setup and diagnostics
- MFC model includes: CMA10B, CMA50A
- MFM model includes: CMA10B

HIGH FLOW

Thermal Mass Flow Controllers/Meters

- For harsh environments where protection from water and dust is critical
- Maximum inlet pressure of 150 psig
- 10°C to 50°C operating temperature
- Seal and valve plug options include Buna, Neoprene®, or Viton™, EPDM
- Models include: IE500A, IE1000A

Mass Flow Technology for Varied Industries

A global leader in MFC technology, MKS offers a variety of MFC models for industries such as semiconductor fabricators, display manufacturers, and photovoltaic cell manufacturers. MKS' line of thermal MFCs are fast and repeatable, providing a cost-effective flow control solution for most industrial and technological applications. These MFCs are available as either elastomer or metal-sealed units with flow ranges up to 300 SLPM and offer a wide choice of digital (RS485, Profibus™, EtherCAT®, Profinet or DeviceNet™) or analog (0–5 VDC or 4–20 mA) I/O options.

Our IP66-rated thermal MFCs, designed specifically for applications in harsh environments where protection against water and dust is critical, are equipped with enclosures that are dust tight and protect against powerful water jets.

Our thermal MFCs are high performance multi-gas, multi-range units designed for critical applications where accuracy, repeatability, and pressure insensitivity are required. They have gas parameters stored in memory that allow user selected gas measurement and control with 1% set point accuracy.

Also available is a compact MFC using a Micro-Electro-Mechanical Systems (MEMS) based flow sensor designed for non-corrosive gas applications.



FLOW RATIO CONTROLLERS

Precise, Multiple Zone Flow Ratio Control

- Wide dynamic ratio control range
- Embedded e-diagnostics
- Analog, EtherCAT or DeviceNet communications
- Control flow proportion independent of the process gas mix
- Models include: DELTA II, DELTA III, DELTA IV

HA-MFV

High Accuracy In-Situ Mass Flow Verifier

- 5 to 3000 sccm measurement range for a wide variety of processes
- 1.0% accuracy for wafer-to-wafer, chamber-to-chamber, & tool-to-tool process matching
- Supports multiple gas panels to reduce implementation costs
- In-situ assessment of MFC flow rate improves process control and avoids unneeded down-time
- Models include: DeviceNet, EtherCAT

PPCMA

High Performance Downstream Pressure Controller with Mass Flow Meter

- Fast response to set point with minimal overshoot
- DeviceNet™ or EtherCAT® communications
- Integral Baratron® capacitance manometer technology
- Integral pressure measurement and control with flow metering in a single package
- Metal-sealed, cleanroom manufactured for high purity applications

MASS FLOW CONTROLLER ACCESSORIES

A complete line of power supplies, readouts, and accessories to compliment our Mass Flow Controller and Meter product lines

- Vacuum system controller
- Power supply and readout
- Single or four channel power supply, readout and set point controller
- Mass Flow Controller modules
- Test diagnostic circuit boards
- DB9, DB15, Y-Type cables

WHY MKS?

CRITICAL TECHNOLOGIES

World-class technology and development capabilities for leading-edge processes



PROVEN PARTNER

Recognized leader delivering innovative, reliable solutions for our customers' most complex problems



OPERATIONAL EXCELLENCE

Consistent execution across all aspects of our business



COMPREHENSIVE PORTFOLIO

Extensive offering of products and services for the markets we serve



MKS Flow, Pressure/Vacuum Measurement, and Valve Solutions

6 Shattuck Road
Andover, MA 01810
+1 978-975-2350

MKS Corporate Headquarters

2 Tech Drive, Suite 201
Andover, MA 01810
+1 978-645-5500
+1 800-227-8766 (in USA)

MKS INSTRUMENTS, INC. enables technologies that transform our world. We deliver foundational technology solutions to leading edge semiconductor manufacturing, electronics and packaging, and specialty industrial applications.

We apply our broad science and engineering capabilities to create instruments, subsystems, systems, process control solutions and specialty chemicals technology that improve process performance, optimize productivity and enable unique innovations for many of the world's leading technology and industrial companies.

Our solutions are critical to addressing the challenges of miniaturization and complexity in advanced device manufacturing by enabling increased power, speed, feature enhancement, and optimized connectivity. Our solutions are also critical to addressing ever-increasing performance requirements across a wide array of specialty industrial applications.

Additional information can be found at www.MKS.com.

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