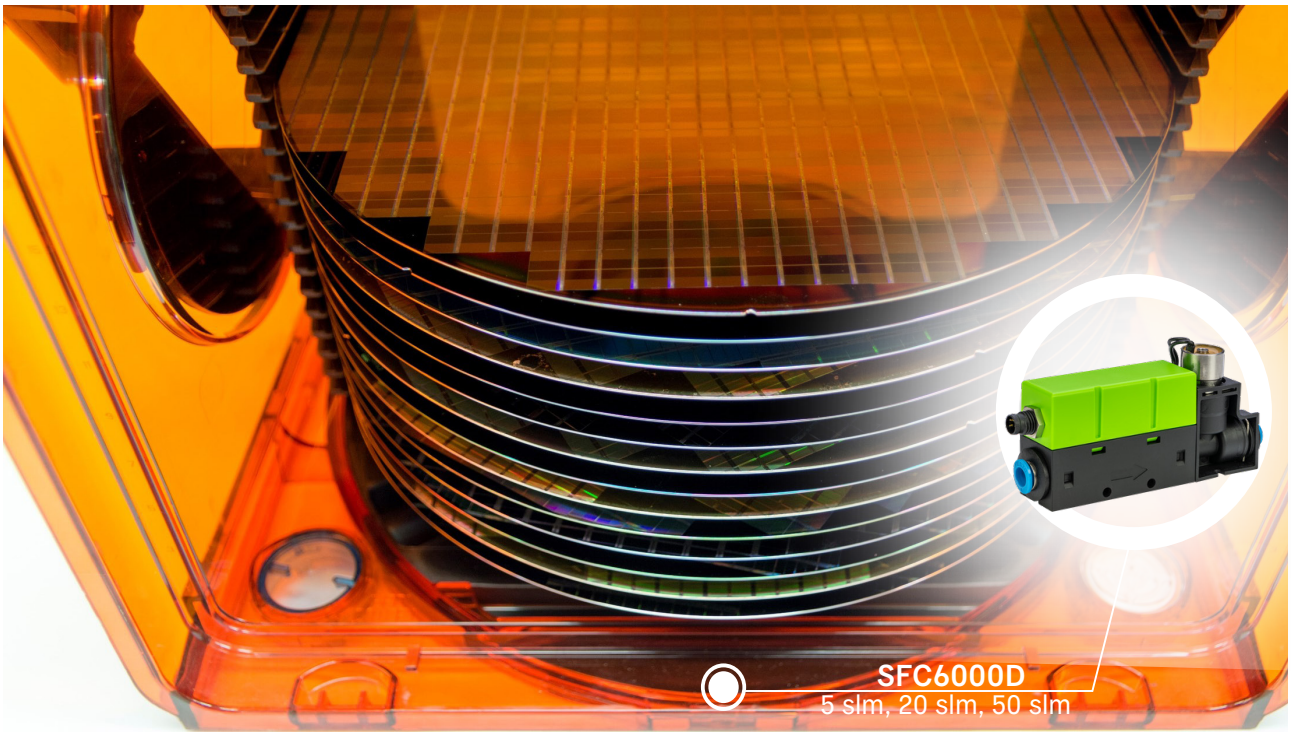
Front opening unified pods (FOUP)

High accuracy and reliable gas purging control for wafer handling

Semiconductor fabrication processes involve hundreds of steps and take up to months. The need for integration and memory capacity has led to the development of 3-dimensional micro-structures with extreme aspect ratios. FOUPs, automated wafer-handling cabinets, are used to safely carry wafers in cleanrooms. Sensirion‘s products offer high accuracy and repeatability, and can be easily integrated into wafer carrier systems, enhancing reliability and performance while saving purging gas and reducing costs.



Application challenges

1. Dispense the correct amount of protective inert gas
2. Too high flow may damage structures with high aspect ratios
3. Homogeneous and repeatable increases in process control and yields in production
4. Reduced costs and optimized high-volume sourcing and manufacturing

Sensirion’s solutions

1. Precise, stable, and fast regulation of the purged gas
2. Accurate, steady, and fast control of inert gas
3. CMOSens® Technology offers unmatched repeatability
4. The calibrated digital sensor actuates the valve without the need of an additional micro-controller

SENSIRION

Sensirion sensor solution:

SFC6000D Mass Flow Controller with best price-performance ratio:

Size (LxWxH): 102 x 45 x 20 mm³

Additional sensor features

- Available as mass flow controller or mass flow meter

Other applications

- Analytical instruments, process controls, thin film deposition

FAQs

- **Which fittings are available?**
  Downmount, push-in
- **Which communication interfaces are available?**
  Analog voltage, RS485, Modbus RTU, I²C
- **Do I need to periodically calibrate the mass flow controller?**
  No, due to the excellent long-term stability of CMOS technology, recalibration is never required in Sensirion‘s mass flow controllers.
- **Can humidity damage the mass flow controller?**
  The mass flow controller is fully operational when dealing with non-condensing humidity levels.
- **At which pressure range can the SFC6000 operate?**
  The operational pressure ranges are determined by the flow range of the mass flow controllers.

  The maximum allowed differential pres sure between the inlet and outlet is 7 bar for the 5 slm version, 5.5 bar for the 20 slm version, and 4.0 bar for the 50 slm version. In all cases, the maximum all owed inlet overpressure is 10 bar

Getting started

EK-F5x

Useful documents

Datasheets, application notes handling instructions, samples codes, step files, certificates

Related sensors

- SFC54xx mass flow controller
- SFC53xx mass flow controller
- SFM5xxx gas flow sensor
- SFM6xxx gas flow sensors

SENSIRION