

Semiconductor Flow & Pressure Selection Guide



CHOOSE THE RIGHT INSTRUMENT FOR YOUR FAB POSITION

Select by fab position

Find your position, then read across for the recommended series, range, connections, communications, and lead time. Every instrument is built to order and configured to your gas, range, fittings, and protocol.

APPLICATION / POSITION	RECOMMENDED SERIES	TYPICAL RANGE	PROCESS CONNECTIONS	COMMUNICATIONS	LEAD TIME
Deposition & etch tool build, process R&D PVD, CVD, ALD, PECVD tools and R&D	MC, MCV	0–2 SCCM to 500 SLPM	VCR, compression, NPT	Analog, Modbus, EtherCAT, EtherNet/IP	3–5 days
Gas-panel & component verification benches Gas sticks, gas boxes, switch test	M, PCD	To 500 SLPM; to 3000 PSI or vacuum	VCR, compression	EtherCAT, EtherNet/IP, analog	3–5 days
Purified nitrogen: purification & distribution High-flow UHP N2 distribution	MCR, M	High-flow, to 500 SLPM and above	VCR, larger fittings	Analog, Modbus, Ethernet	3–5 days
Advanced-packaging bonding Formic-acid vapor into die bonders	MCS, MS	0–20 to 0–50 SLPM	Compression, BSPP	Analog, Modbus, IO-Link	3–5 days
Field & lab MFC calibration / verification Reference & portable standards	M, MW, MB	To 500 SLPM; low-dP via Whisper	VCR, compression	Analog, Modbus, DeviceNet	3–5 days
Non-recipe utility flow Load-port purge, chuck, backside	MC, PC	SCCM to SLPM; vacuum to 10 Torr	VCR, compression, NPT	Analog, Modbus, EtherCAT	3–5 days
Metrology & inspection tool build Purge, carrier, vacuum, humidity	MCV, PC, M	Low-SCCM; vacuum pressure	Compression, VCR	Analog, Modbus, Ethernet	3–5 days
Facilities commissioning & abatement Bulk gas balancing & abatement	M, MC, MW	Mid- to high-flow SLPM	Compression, NPT	Analog, Modbus, Ethernet	3–5 days
Fast drop-in replacement Rebuilds, refurbis, long-lead parts	MC	Matched to the outgoing unit	Footprint-matched	Matched to your system	3–5 days



*3 to 5 business day
FastTrack lead times*

*130+ gases and
mixtures, field-
reselectable*

*$\pm 0.5\%$ of reading high-
accuracy option, NIST-
traceable*

*Under 10 ms signal
response*

Instrument families

The core platforms behind the recommendations. Configure each to your gas, range, fittings, and protocol.

MC-SERIES

Mass Flow Controllers



The workhorse for fab test, R&D, gas delivery, utility flow, and drop-in replacement. Multi-gas, fast control, broad range and protocol options.

MCV-SERIES

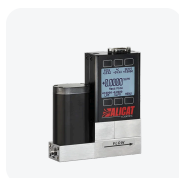
Vacuum Mass Flow Controllers



Low-SCCM precursor and carrier control for deposition, etch, and metrology tools operating under vacuum.

MCS / MS-SERIES

Corrosion-Resistant Flow



Corrosion-resistant controllers and meters that hold accuracy across aggressive, condensable streams such as N₂ carrying formic-acid vapor.

PC / PCD-SERIES

Pressure Controllers



Absolute, gauge, and vacuum pressure control for chambers, purge, backside, and leak-test benches. Dual-valve PCD holds pressure in closed volumes.

M / MCR-SERIES

Mass Flow Meters



Precise multi-gas measurement for verification benches, high-flow N₂ distribution (MCR), facilities balancing, and NIST-traceable calibration.

MW / MB-SERIES

Whisper & Portable



Low-pressure-drop Whisper metering and battery-powered portable meters for field verification, calibration, and facilities work.

Configuration options

- **Gas & mixtures:** onboard library of 130+ gases, reselectable in the field; COMPOSER for custom mixtures.
- **Corrosive & specialty service:** corrosion-resistant S models and configurations for dopant, etch, and formic-acid streams.
- **High-purity gas service:** helium-leak-checked and oxygen-cleaned (OXC) options for purified-nitrogen and high-purity systems.
- **Connections & footprint:** VCR, compression, NPT, BSPP, and footprint-matched builds for drop-in replacement.
- **Communications:** analog, RS-232 / RS-485 Modbus RTU, EtherCAT, EtherNet/IP, DeviceNet, PROFIBUS, PROFINET.
- **Accuracy & calibration:** accuracy to $\pm 0.5\%$ of reading with the high-accuracy option; NIST-traceable multi-point calibration on every unit.

Custom, OEM & lifetime support

Bespoke manifolds & assemblies

Multi-channel gas panels and integrated assemblies built to your drawing when a catalog configuration is not enough.

Engineering design-in

Design-in support from prototype through production, with configurations locked to your spec for the platform's life.

Lifetime support

NIST-traceable recalibration, repair, and footprint-matched replacements that ship in days, not weeks.

How to order

Send us the gas, full-scale range, process connections, communications, and the tool or outgoing part number, and we will confirm a configuration and lead time, usually the same day. Every unit ships with NIST-traceable, multi-point calibration. Other regions: find your local representative at alicat.com/contact.

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Lead times reflect FastTrack stock configurations; specialty builds may take longer. Ranges are representative; each unit is calibrated to your application.