



FRC | Flow Ratio Controller

A NEW LEVEL OF GAS CONTROL

Pivotal is now introducing a flow ratio controller that uses Pivotal's proprietary control valve to improve wafer uniformity and wafer to wafer uniformity.

It's the industry's fastest flow ratio controller, with a settling time under one second.

Benefits of FRC

- Ratio control at $\pm 1\%$ setpoint
- Channel flow control 0 or 2 to 100%
- Repeatability is $\pm 0.2\%$ setpoint
- Input ratio range 0 or 1 to 100% of total flow

Key Features

- Based on patented position-control valve design
- ECAT
- 3 or 4 channels

PIVOTAL
SYSTEMS

FRC Specifications

Performance	Full Scale Range (each channel, N2 Equivalent)	1,000 sccm
	Percentage Accuracy	±1.0% of setpoint (Flow ≥ 5% of Channel Full Scale)
	Channel Flow Control Range	0 or 2 to 100% F.S.
	Input Ratio Range	0 or 1 to 100% of total flow within channel flow control range
	Percentage Repeatability	±0.2% of setpoint
	Leak Integrity	≤ 1E-9 atm • cc/sec (He)
	Leak By Rate Through Closed Valve	≤ 1% F.S.
	Percentage Settling Time	<500 ms
	Settling Time – Fully Developed Flow	< 1 sec
Operating Conditions	Downstream Pressure	0–50 Torr
	Upstream Pressure	≥200 Torr
	Normal Operating Pressure Differential	≤200 Torr
	Maximum Over Pressure	150 psig
	Warm Up Time	60 min
	Normal Operating Temperature	10 to 50°C
Materials	Wetted Surface Finish	5 µin Ra, Semi F19 compliant
	Wetted Surface Materials	SUS 316L UHP, Semi F20 compliant
	Fittings	1/4" VCR
	– Inlet	Male (non-rotatable)
	– Outlet	Male (non-rotatable)
Electrical (ECAT)	Seals	Metal
	Input Power Required	+24 VDC ± 10% (13 Watts)
	Connector	2x RJ45 (comm.) male, M8 male 5 pin (power)