

EtherCAT®



The Fastest and Most Accurate MFCs

Enhanced with the Speed of EtherCAT®

Performance Perfected for Semiconductor Processes

- Embedded diagnostics leverage real-time EtherCAT data acquisition capabilities
- Ultra-stable flow sensor ($\leq 0.15\%$ of S.P. drift per year) enables tighter low set point accuracy and reduces maintenance requirements
- Improved valve shutdown ($\leq 0.15\%$ of bin range) reduces valve leak-by to reduce first wafer effects
- Newly enhanced pressure transient insensitivity reduces crosstalk sensitivity for consistent mass flow delivery

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Request a demo device today.
Visit BrooksInstrument.com/EtherCAT

BROOKS®
INSTRUMENT

Beyond Measure

GF100 Series Mass Flow Controllers

Low-flow Models

High-flow Models

SDS Models

	GF100	GF120	GF125	GF101	GF121	GF126	GF120XSL	GF120XSD
PERFORMANCE								
Full Scale Flow Range	3 sccm – 55 slm			55 slm – 300 slm			4 – 25 sccm	>25 sccm – 1 slpm
Flow Accuracy	±1% S.P. >20 – 100%, ±0.2% F.S. 2 – 20%			±1% S.P. >35 – 100%, ±0.35% F.S. 2 – 35%			±1% S.P. >35 – 100%, ±0.35% F.S. 2 – 35%	
Repeatability & Reproducibility	<±0.15% S.P.							
Flow Settling Time ¹	<1 sec	700 ms	300 msec (3 – 860 sccm N2 Eq.) 400 msec (861 – 7200 sccm N2 Eq.) 500 msec (7201 – 30000 sccm N2 Eq.) <700 msec (30001 – 55000 sccm N2 Eq.)	<1 sec			<3 secs	
Pressure Insensitivity	—		<1% S.P. up to 5 psi/sec upstream pressure spike	—		Ability to measure inlet pressure	—	
Control Range	2 – 100% (normally closed valve)			5 – 100% (normally closed valve)			2 – 100% (normally closed valve)	
MultiFlow™ Gas & Range Configurable	Standard			Standard			—	
# of Bins	11 bins			4 bins			—	
Valve Shutdown ¹	≤0.15% of bin range			<2% of F.S. @ 30 N2 psig/atm out			<1% of F.S.	
Zero Stability	≤0.15% F.S. per year			≤0.15% F.S. per year			≤0.6% F.S. per year	
Temperature Coefficient	Span: 0.05% S.P. per °C Zero: 0.005% F.S. per °C			Span: 0.05% S.P. per °C Zero: 0.03% F.S. per °C			Span: 0.05% F.S. per °C Zero: 0.03% F.S. per °C	
RATINGS								
Operating Temperature Range	10 – 50° C			10 – 50° C			—	
Differential Pressure Range ²	3 – 860 sccm = 7 – 45 psid 861 – 7200 sccm = 10 – 45 psid 7201 – 55000 sccm = 15 – 45 psid			30 – 90 psid			10 Torr – 30 psid typical For more details consult factory	
Maximum Operating Pressure	500 psia max		100 psia max	Controller: 75 psig, Meter: 150 psig			Up to 500 psia max	
Leak Integrity (external)	1x10 ⁻¹⁰ atm. cc/sec He							
MECHANICAL								
Valve Type	Normally closed, Normally open, Meter (no valve)			Normally closed, Meter (no valve)			Normally closed	
Wetted Materials	SEMI F20 compliant, 316L VIM/VAR, Hastelloy C-22, 316L Stainless Steel, 304 Stainless Steel, KM-45							
Surface Finish	10μ inch Ra	5μ inch Ra		10μ inch Ra	5μ inch Ra		5μ inch Ra	
DIAGNOSTICS & DISPLAY								
Status Lights	Run, Error, Power, Network Status							
Alarms	Control Valve Output, Network Interruption, Temperature High/Low, Pressure High/Low, Power Surge/Sag							
Display / Units / Resolution	Backlit rotatable LCD display / Flow (%), Temp (°C), Pressure (psia, kPa) / Resolution 0.1 (unit)							
ELECTRICAL								
Electrical Connection	Power via 5-pin M8 Connector, EtherCAT via twin RJ45							
Digital Communication	EtherCAT™							
Diagnostics / Service Port	Micro USB							
Power Supply / Consumption	24Vdc, 7 Watts							

For dimensional drawings and electrical connection options, visit BrooksInstrument.com

¹ Normally open valve option available on GF100, GF120, GF125. Typical flow setting time <1.5 sec, valve shutdown 2% F.S.

² Certain gas applications may require an additional differential pressure. Contact Brooks Technical support for more information.



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