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Data Sheet

August 15, 2026

BROOKS INSTRUMENT

Brooks Instrument 5850i Carbon Dioxide Mass Flow Controller

The Brooks 5850i is an elastomer-sealed thermal mass-flow controller. OEM installation manual X-TMF-5850i-MFC-eng (541B108AAG, December 2008) lists standard ranges 3 sccm to slpm nitrogen equivalent, accuracy $\pm 1\%$ full scale including linearity at calibrated conditions ($\pm 1.5\%$ FS including linearity above 20 slpm), repeatability 0.25 % of rate, response less than 6 seconds to within 2 % of full scale on a 0–100 % command step, power +15 to +28 Vdc (245 mA at +15 Vdc to 370 mA at +28 Vdc), operating 5 to 65 °C, working pressure 1500 psi (10.342 MPa) max, differential 5 psi min / 50 psi max, output 0–5 Vdc into $\geq 2000\ \Omega$ with 3 mV max ripple or jumper-selectable 4–20 / 0–20 mA, and 5 V reference $\pm 0.2\%$ into 1 k Ω max. Zero TC is less than $\pm 0.075\%$ FS/°C; span shift less than $\pm 1.0\%$ FS over 10–50 °C. Semiconductor and industrial gas delivery where thermal MFC with valve and 0–5 V / 4–20 mA command is required. Zero Temperature Sensitivity: less than $\pm 0.075\%$ full scale per °C Span Temperature Sensitivity: less than $\pm 1.0\%$ full scale shift over 10 to 50 °C Setpoint Potentiometer: precision 5 V reference allows 2 k Ω ten-turn pot for 0 to 5 V command Literature: Brooks 5850i installation and operation manual 541B108AAG December 2008



MODEL

**Brooks Instrument
5850i**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

5850i

LISTING

<https://aumictechlabs.com/products/5850i-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Brooks Instrument 5850i is a mass flow controller engineered for precise, repeatable control of carbon dioxide gas flow in demanding industrial manufacturing environments. It delivers stable measurement and control through a unique flow sensor technology and maintains mechanical and electrical compatibility with other mass flow controllers for seamless system integration.

Technical Specifications
Flow Performance Flow range: 3 sccm to 1000 SLPM (CO₂ specific ranges include 5 SLPM and 12 SLPM) Accuracy: $\pm 1\%$ of full scale (≤ 20 SLPM); $\pm 1.5\%$ of full scale (> 20 SLPM) Repeatability: 0.25% of rate Control range: 50:1 turndown ratio Response time: < 6 seconds to within 2% of full scale with 0–100% step command Stability & Environmental Zero stability: $< 0.2\%$ of full scale per year; temperature coefficient $< \pm 0.075\%$ per °C Span stability: temperature coefficient $< \pm 1.0\%$ over 10–50°C range Mounting attitude sensitivity: $\pm 0.5\%$ maximum full scale deviation after re-zeroing Pressure coefficient: $\pm 0.03\%$ per psi (up to 200 psig, N₂ equivalent) Operating Pressures Maximum working pressure: 1500 psi (10.342 MPa) Allowable differential pressure: 5–50 psi minimum–maximum Leak integrity (outboard): 1×10^{-10} atmosphere cc/sec (helium) Electrical Power supply: +15 to +28 Vdc Power consumption: 2.5 SLPM)
Typical Applications Critical gas delivery in semiconductor manufacturing, analytical instrumentation, laboratory research, and precision industrial processes requiring CO₂ flow regulation. **Compatibility & Integration** Mechanically and electrically compatible with existing mass flow controller installations, supporting standard analog control interfaces and reducing integration complexity.

5850I Characteristics / Specifications

PARAMETER	VALUE
Model	5850i
Instrument Type	Thermal mass flow controller
Standard Ranges	3 sccm to slpm nitrogen equivalent
Accuracy	±1 % full scale including linearity at calibrated conditions
Accuracy High Flow	±1.5 % full scale including linearity for ranges greater than 20 slpm
Repeatability	0.25 % of rate
Response Time	less than 6 seconds to within 2 % of full scale final value, 0 to 100 % command step
Power	+15 to +28 Vdc, 245 mA at +15 Vdc to 370 mA at +28 Vdc
Operating Temperature	5 to 65 °C (40 to 150 °F)
Non Operating Temperature	-25 to 100 °C
Working Pressure	1500 psi (10.342 MPa) maximum
Differential Pressure	5 psi minimum, 50 psi maximum
Output Voltage	0 to 5 Vdc into 2000 ohms or greater, maximum ripple 3 mV
Output Current	jumper selectable 4 to 20 mA or 0 to 20 mA
Reference Output	5 V ±0.2 %, maximum load 1 kΩ
Zero Temperature Sensitivity	less than ±0.075 % full scale per °C
Span Temperature Sensitivity	less than ±1.0 % full scale shift over 10 to 50 °C
Setpoint Potentiometer	precision 5 V reference allows 2 kΩ ten-turn pot for 0 to 5 V command
Manufacturer	Brooks Instrument
Literature	Brooks 5850i installation and operation manual 541B108AAG December 2008
Family	Brooks 5800 elastomer sealed MFCs
Brand Lineage	Brooks Instrument
Form Factor	thermal MFC with integral valve
System Role	gas mass flow control

PARAMETER	VALUE
Use Case	semiconductor and industrial gas delivery
Documentation Type	OEM 5850i manual
Year Class	Brooks 5850i
Application Class	mass flow control
Vendor Path	Brooks Instrument
Sensor Class	thermal mass flow sensor plus solenoid valve

General Specifications & Supplementary Characteristics

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Use Case	semiconductor and industrial gas delivery
Documentation Type	OEM 5850i manual
Year Class	Brooks 5850i
Application Class	mass flow control
Vendor Path	Brooks Instrument
Sensor Class	thermal mass flow sensor plus solenoid valve Notes From Brooks 5850i manual 541B108AAG (3 sccm–slpm N2, $\pm$ 1 % FS, 0.25 % repeatability, <6 s, +15 to +28 Vdc, 1500 psi). Attitude sensitivity and valve orifice tables are in section 1-3 of that manual.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Sensor Class	thermal mass flow sensor plus solenoid valve

Notes

From Brooks 5850i manual 541B108AAG (3 sccm-slp_m N₂, ±1 % FS, 0.25 % repeatability, <6 s, +15 to +28 Vdc, 1500 psi). Attitude sensitivity and valve orifice tables are in section 1-3 of that manual.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.