

# 0250-Series

Secondary Electronics

## Four Channel Power Supply, Readout and Set Point Controller



Model 0254  
Secondary Electronics

### Overview

The Brooks 0254 is a four-channel power supply, readout, and set point controller. This innovative, reliable microcomputer-based controller provides power for up to four Brooks thermal mass flow, Quantim Coriolis mass flow, and/or pressure devices; all in a new compact design. Additionally, the 0254 can be used to generate flow setpoint commands, display flow rate, totalize flow, for blending multiple flow streams, and more. This fully RoHS compliant device has a very user-friendly operation and is offered with multiple mounting capabilities such as rack mount, panel mount, and table-top mount.

### Product Description

#### Four Channel Display

The process variable and setpoint for each of the four channels are displayed simultaneously for quick reading and adjustment. The value displayed on each channel can be independently set for percent full scale or engineering units to display flow rate, pressure, density, or temperature.

#### Backlit Graphic Display

The 0254 features a large, high contrast, backlit graphic display which allows the user to view real-time process variables and the programmed setpoint for each connected device right on the home screen. This enables the user to rapidly identify and make in-process adjustments in seconds. The display and audio indicators provide the user immediate status quantities, rates, and diagnostic operating status.

#### Communication

Every 0254 comes with a RS-232 port, giving users serial communication capability. The RS-232 port provides remote readout, setpoint, control, and data acquisition.

#### Diagnostics

Powerful automatic built-in diagnostic tests support easy installation and assist in ensuring a long, trouble-free operating life. These tests include overall system operating status, memory conditions, communication adapter status, display functionality, and keypad operation.

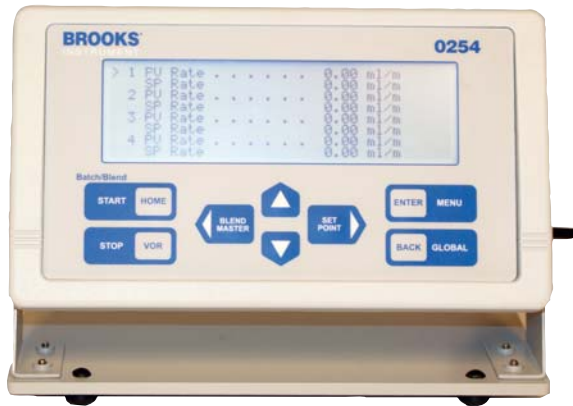
#### Sensor Factor

A gas sensor factor dropdown list is a standard menu feature, allowing the user to adapt the 0254 to any non-calibrated fluid.

#### Approvals and Certifications

The 0254 is fully RoHS compliant to EU 2002/95, CE certified to EN61326-1, FCC certified to Part 15 Class A and Part 68. UL USA and Canada general purpose approval to UL61010.

## Product Description



Brooks Model 0254 Table Top Front View



Brooks Model 0254 Table Top Back View



Brooks Model 0254 Rack Mount Assembly

## Features and Benefits

Features	Benefits
Variety of mechanical configurations (panel, desktop, rack mount)	Makes installation easy for users specific application.
Self diagnostics on every power-up	Ensures device is fully functional.
Large graphic high contrast eight (8) line backlit display	East to read. Displays all process variables and setpoints for quick reading and adjustment.
Totalization	Can be used for inventory management.
Batch control	Allow single or multi channel batch recipes.
Blending	Supports master slave blending configuration and operation.
Valve Override Control (VOR) open, closed or normal	Valve open allows rapid purge or chamber flooding.
RS-232 serial port	Allow remote control, data logging, and remote alarms.
Brooks Smart DDE Software	Simplifies data exchange between the 0254 and commonly used programs such as Microsoft® Excel, Test Point™ and LabView™.
Gas factor scaling	Adapts 0254 to any non-calibrated fluid.

## Product Applications

### Catalyst Research

The challenge is scaling up the catalyst process from the laboratory to the pilot plant and, ultimately, to production levels. It is imperative that the amount of feed flowing through the research catalyst bed be precisely measured so that the conversion rate and selectivity can be accurately calculated and scaled-up successfully.

Brooks' Quantim Series Coriolis mass flow controllers and SLA Series thermal mass flow controllers have been selected by many companies involved in catalyst research because these instruments provide exceptional flow control precision, wide dynamic range, and super stability. The Quantim Series utilizes coriolis technology making them extremely well suited for critical measurement where the composition or thermal properties of feeds vary. Both series are available for extremely high pressure service, have appropriate area classifications, and are offered with a variety of wetted materials. The 0254 secondary electronics may be used to provide power, set point, and local display. The 0254 can easily share data with a PC via the RS-232 port and DDE software.

### Heat treating, cutting/welding, and other thermal processes

The thermal process market is diverse, but the application demands are similar: reliable, accurate control of inert shielding gases and excellent control of O<sub>2</sub> to ensure that the desired outcome is achieved time after time.

Brooks Model 1350 and 1355 Sho-Rate VA meters are examples of simple, reliable flow meters optimized for applications requiring 2-5% gas flow accuracy for CO<sub>2</sub> lasers, for example. Both can be supplied with Model 8800 flow controllers that hold flow constant despite changes in feed pressure. The new Model 4850 provides economical thermal mass flow control at flows up to 40 slpm and a convenient local operator interface for changing flow parameters and setpoint. Leading thermal spray equipment suppliers often select MF Series mass flow controllers because their NEMA 4X/IP66 ingress protection prevents damage from dust and water.

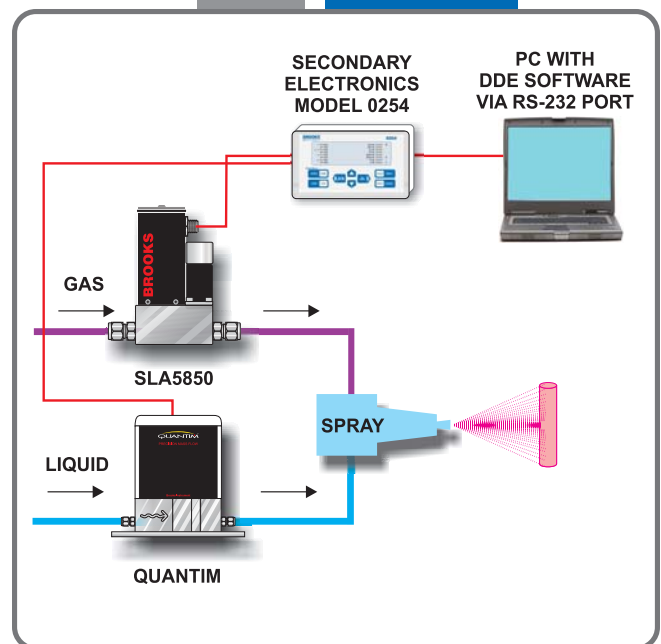
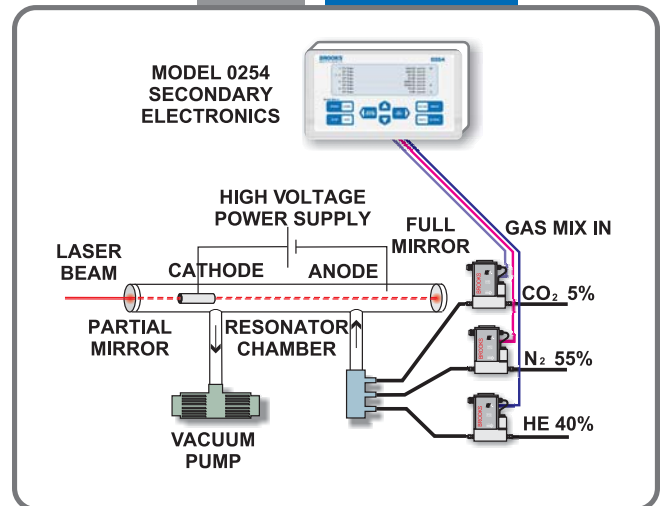
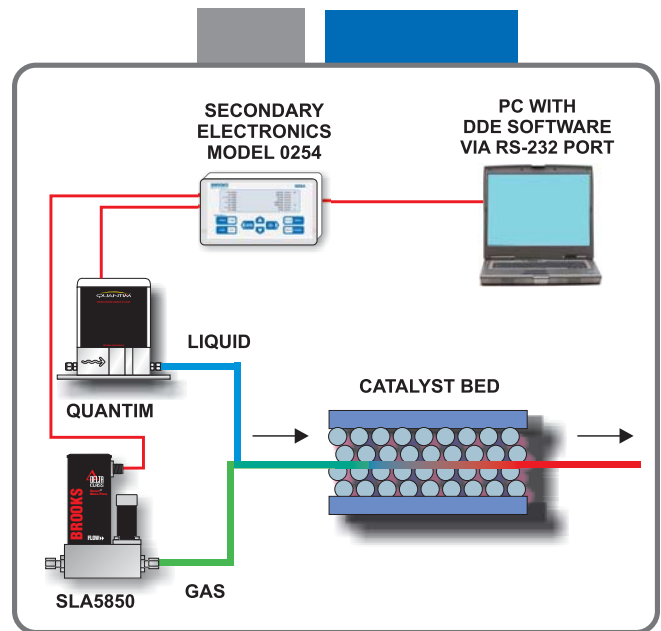
The 0254 Secondary Electronics is being used to provide power, readout and setpoint functionality. The user is also taking advantage of the built in blending capability.

### Precision Coatings

Many coating processes use liquids that are sprayed onto substrates. The liquid delivery rate to the spray nozzle controls the film thickness on the substrate, while gas flow determines droplet size and spray pattern.

The Quantim Series Coriolis mass flow controller is perfect for controlling the liquid flow rate to the nozzle. In addition, the instantaneous density output available from the Quantim Series can be employed diagnostically to detect the presence of gas bubbles in the liquid stream. The SLA Series gas flow controller is often selected for this application because of its very fast response and highly accurate, repeatable flow control.

The 0254 Secondary Electronics may be used to provide power, local display and setpoint for both devices. The liquid density measurement, used for quality control, is also displayed. A totalizer function may be used to track liquid inventory to ensure that the process supply does not run low. All of this can be easily integrated with a PC via the RS-232 port and DDE software.

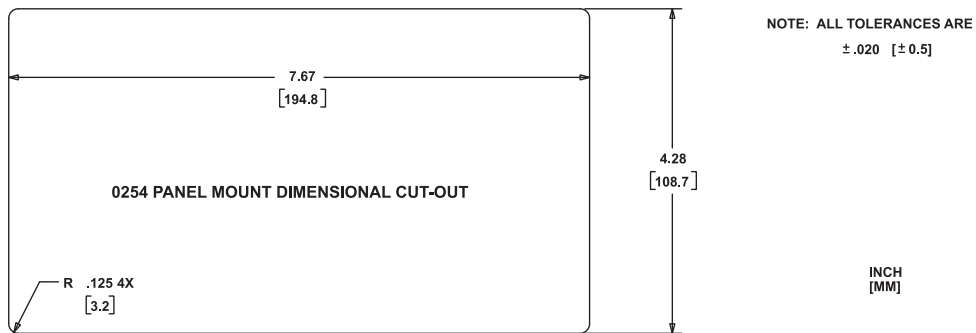
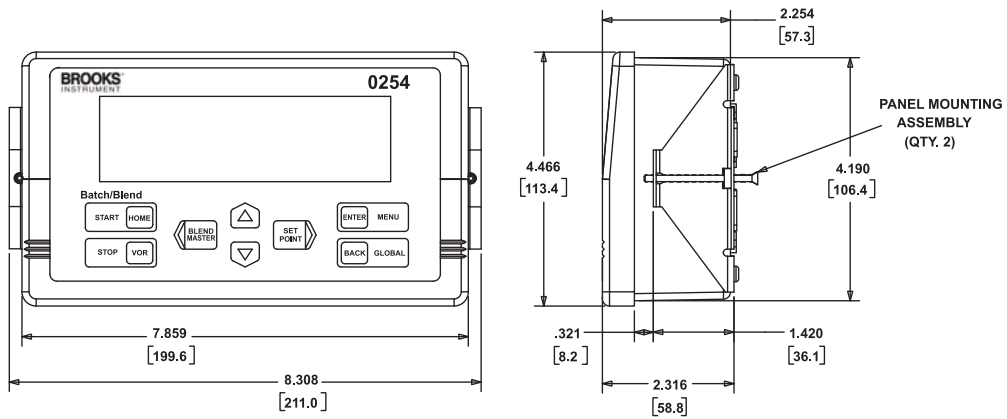


## Product Specifications

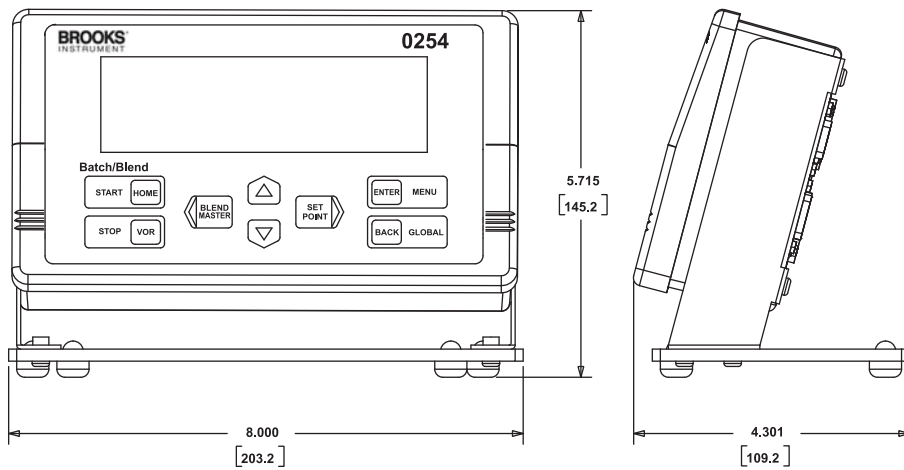
### Performance

<b>Display</b>	8 line x 40 character back-lit LCD display.								
<b>Controls</b>	Keypad: 8-Key metal dome tactile push buttons with selectable audio beep for setpoint (rate, batch, blend), VOR, emergency stop, full operation and programming.								
<b>Date Retention</b>	Non-volatile ram/rom, 100 year retention.								
<b>Power Input</b>	Voltage: 12-24Vdc required, -15Vdc permitted. Current: 400mA max. current draw per channel. Instrument power draw: 0.8 Watts. Optional power module: 100-240Vac, 47-63Hz.								
<b>Power Output</b>	+15V/2.0A, -15V/1.0A or 12-24Vdc/2.0A.								
<b>Signal Input</b>	0(1)-5 Volts, 0(2)-10 Volts, 0(4)-20mA.								
<b>Signal Output</b>	0(1)-5 Volts, 0(2)-10 Volts, 0(4)-20mA.								
<b>Communications</b>	Full communications capability for remote readout, setpoint, control, programming and data acquisition. via RS232.								
<b>Enclosure</b>	ABS cyclac resin.								
<b>Mounting Options</b>	Panel mount kit, table top kit, rack mount kit, rack mount kit with 19" sub-rack. Retrofit applications for 0152/54.								
<b>Dimensions</b>	See product dimensions on page 6 and 7.								
<b>Temperature/Humidity</b>	Operating: 32-122°F (0-50°C), 0-95% non-condensing. Ship/Storage: (-)40-85°C (-)40-185°F, 0-95% non-condensing.								
<b>Certifications</b>	<table border="0"> <tr> <td>CE Mark</td> <td>EN61326-1</td> </tr> <tr> <td>FCC</td> <td>Part 15 Class A, part 68</td> </tr> <tr> <td>RoHS</td> <td>EPD 2002/95/EC, 01Jul2006</td> </tr> <tr> <td>UL-USA &amp; Canada</td> <td>UL 61010 Electrical Safety for General Purpose Indoor Use.</td> </tr> </table>	CE Mark	EN61326-1	FCC	Part 15 Class A, part 68	RoHS	EPD 2002/95/EC, 01Jul2006	UL-USA & Canada	UL 61010 Electrical Safety for General Purpose Indoor Use.
CE Mark	EN61326-1								
FCC	Part 15 Class A, part 68								
RoHS	EPD 2002/95/EC, 01Jul2006								
UL-USA & Canada	UL 61010 Electrical Safety for General Purpose Indoor Use.								

# Product Dimensions



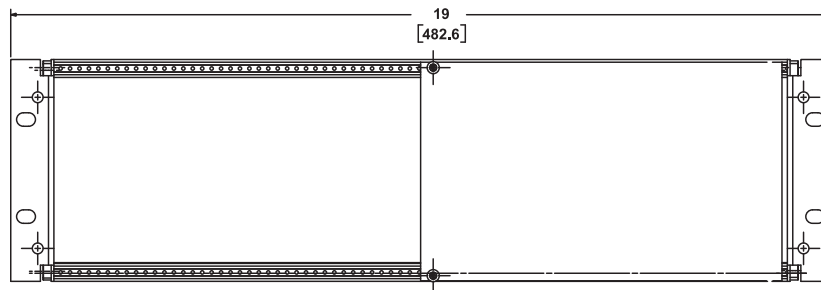
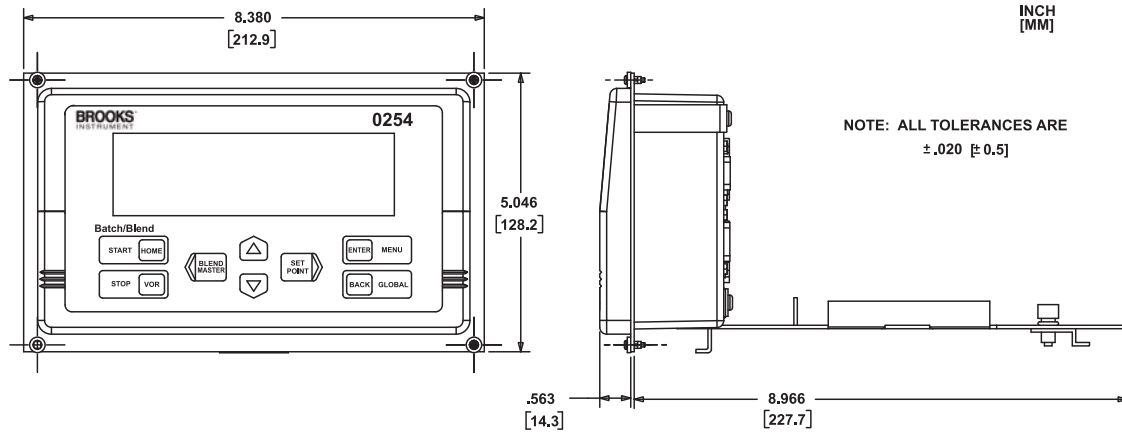
Panel Mount Dimensions



NOTE: ALL TOLERANCES ARE  
± .020 [± 0.5]  
INCH [MM]

Table Top Dimensions

# Product Dimensions



*Rack Mount Dimensions*

## Model Code

Code Description	Code Option	Option Description
I. Base Model Code	<b>0254A</b>	Four channel secondary electronics
II. Mounting	<b>A</b>	Panel mount kit
	<b>B</b>	Table top kit
	<b>C</b>	Rack mount kit (can be used to retrofit 0254 into 0152/54 Installations)
	<b>D</b>	Rack mount kit with 19" rack
III. Power Cord for Power Supply Module 100-240 VDC	<b>1</b>	North american power cord for 120 VAC
	<b>2</b>	European power cord for 220 VAC
	<b>3</b>	None
IV. Power Supply Output Voltage	<b>A</b>	+/- 15 VDC
	<b>B</b>	+ 24 VDC
	<b>C</b>	No power supply
V. Input / Output Pinout and Signal Adapters	<b>1</b>	Current pinout (pin compatible with standard Brooks 0(4)-20 mA cables)
	<b>2</b>	Current pinout / Voltage Pinout Adapter Set ( four adapters for use with standard Brooks 0(1)-5 VDC cables)
VI. Options	<b>1</b>	None
	<b>3</b>	RS-232 communication cable (3m 10ft., 9 pin female 'D' to 9 pin female 'D')
	<b>4</b>	Communication software (Smart DDE)
	<b>5</b>	RS-232 communication cable (3m 10ft., 9 pin female 'D' to 9 pin female 'D') and Communication software (Smart DDE)
	<b>5</b>	RS-232 communication cable (3m 10ft., 9 pin female 'D' to 9 pin female 'D') and Communication software (Smart DDE)
VII. OEM Code	<b>A</b>	Standard Brooks Labeling

### Sample Model Code

I	II	III	IV	V	VI	VII
<b>0254A</b>	<b>B</b>	<b>1</b>	<b>B</b>	<b>2</b>	<b>5</b>	<b>A</b>