Fast Response Liquid Flow Controller
- < 1 second Response Time
- ±1% of Reading Accuracy
- Piezoelectric Control Valve
- Metal Seal Construction
- Compact Size
- 1/8" Face Seal or Compression Fitting

The Porter D2000i Series Liquid Mass Flow Controller is designed to address the need for fast, precise control of liquid precursors in semiconductor manufacturing processes, as well as various applications in the biotechnology, pharmaceutical, chemical, petrochemical and surface treatment industries. Closed-loop digital control circuitry, combined with the integral proportional piezoelectric-actuated control valve, offer response times of less than one second and stable control at low flows. Clean room assembly and all metal seal construction ensure high purity and leak integrity. A unique laminar bypass and sensor assembly provide accurate measurement with only a 5°C rise in fluid temperature. The compact package size of the D2000i Series simplifies system integration. A D2000i Series Liquid Mass Flowmeter is available for applications requiring flow monitoring only.

Specifications
Response Time: <1 second to within 5% of rate (up to 6 stored valve jump voltages)
Accuracy and Linearity: ± 1% of reading
Repeatability: ±0.2% of rate at any constant temperature within operating temperature range
Rangeability (Control Range): 20:1 (5%-100% full scale) (accuracy & control)
Ambient and Operating Temperature Range: -10 to 40°C (+14 to 104°F)
Maximum Allowable Operating Pressure: 125 psig
Temperature Coefficient: < 0.1%/°C
Setpoint Input/Flow Signal Output: 0-5 Vdc (2k ohm minimum load resistance for flow output signal)
Power Supply Requirements: Current Consumption < 200 mAdc: +15 (±10%) Vdc

Flow Capacity:
Following are the available flow ranges based on isopropyl alcohol (IPA). To determine the flow range for process fluids other than IPA, multiply the IPA flow range by the appropriate correction factor.

<table>
<thead>
<tr>
<th>IPA Flow Ranges (in ml/min):</th>
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<tbody>
<tr>
<td>.007 - .14</td>
<td>Liquid</td>
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<tr>
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Leak Integrity: 1 x 10⁻⁹ atm. cc/sec.He
Warm-up Time: 20 minutes
Materials of Construction (wetted surfaces):
- Body – 316L stainless steel
- Sensor Assembly – 316L stainless steel
- Valve Components – 316L stainless steel
- O-rings – 316L stainless steel

Control Valve: Normally open piezoelectric-actuated
External Electrical Connector:
Nine (9)-pin D-connector
Process Connections: 1/8” male metal gasket face seal or 1/8” compression fitting
Internal Volume: < 1 ml
Mounting Orientation: Horizontal (±5°)
Weight: <1.5 lbs.

Contact Porter to size fluids not listed or when operating parameters are questionable.
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D2000i Series
Mass Flow Controller

Ordering Information
Model Number and Description
Example: D2000iCA A3E A

- Basic Model
  D2000iC (Flow Controller)
  D2000iM (Flowmeter)

- Model Revision
  A - Production Release

- Input/Output Signal
  A - 0-5 Vdc/0-5 Vdc

- Fitting Size & Type
  2 - 1/8” Compression Fitting
  3 - 1/8” Male Metal Gasket Face Seal

- Flow Designator
  ml/min Isopropyl Alcohol
  A - 0.14
  B - 0.40
  C - 1.00
  D - 3.50
  E - 7.50
  G - 13.0

- Assembly/Test Procedures
  A - Factory Standard

Example:
Model D 2 0 0 0 i C A A 3 E A
D2000iC = Model D2000i Flow Controller
A = Production Release
A = 0-5 Vdc/0-5 Vdc
3 = 1/8” Male Face Seal
E = 7.50 ml/min Isopropyl Alcohol Flow Designator
A = Factory Standard
Assembly/Test Procedures

To order, specify:
- Model Number
- Fitting Type
- Flow Capacity
- Liquid Type - Include: Density, Heat Capacity, Thermal Conductivity, Viscosity, and Boiling Point
- Operating Temperature
- Upstream Pressure
- Downstream Pressure (not required for flowmeters)
- Additional Accessories Required

Specifications subject to change

1/8” Male Metal Gasket Face Seal

1/8” Compression Fitting

Mounting Holes M6 x 0.7 Threads .17 Deep 2 Plcs.

Dimensions shown in inches
Specifications subject to change

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Hatfield, PA 19440-0907 USA
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Fax (215)723-2199
www.porterinstrument.com