



116 and 126 Programmable Solvent Modules



Packaging – Processing

Bid on Equipment

1-847-683-7720

www.bid-on-equipment.com

BECKMAN



The State-Of-The-Art In Solvent Delivery Technology

Intelligent, Single-Piston Solvent Delivery.

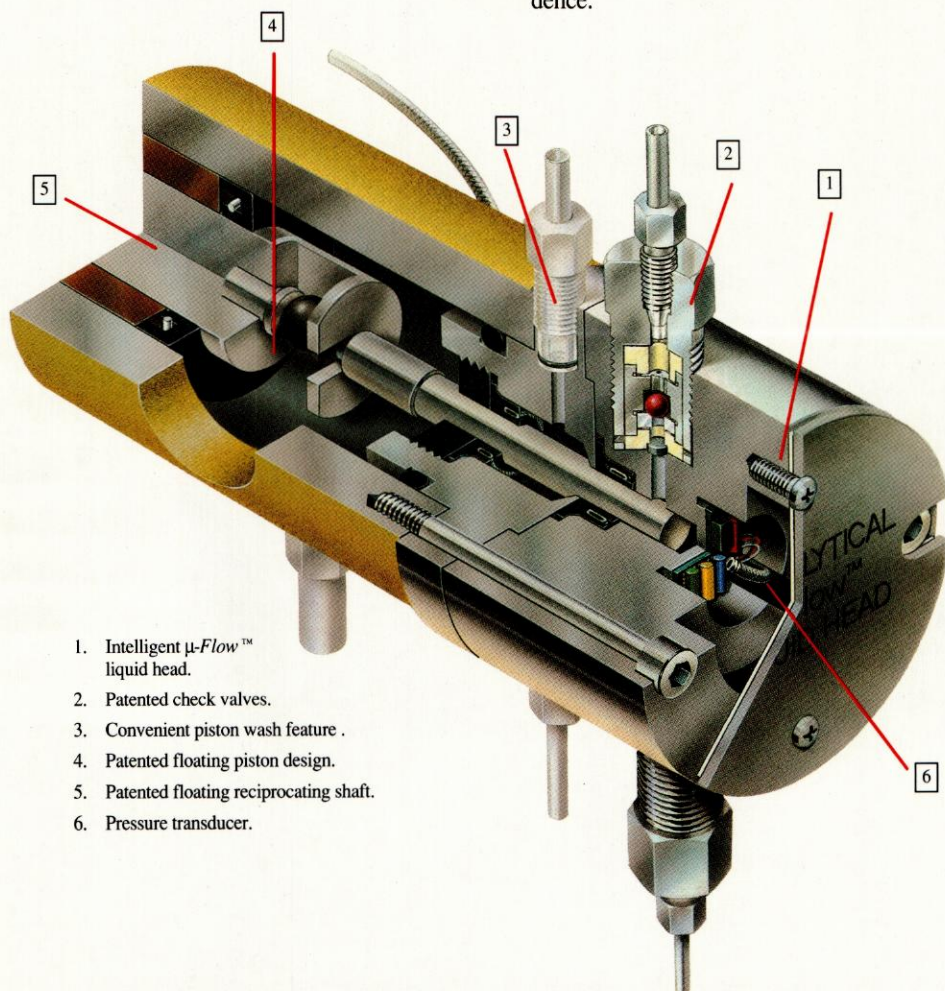
- **Micro-to-macro flow rates:** performance from 1 $\mu\text{L}/\text{min}$ to 60 mL/min.
- **Intelligent $\mu\text{-Flow}^{\text{TM}}$ liquid heads:** electronically compensate for solvent compressibility and backpressure changes.
- **Dual-stage dynamic high pressure mixing:** for even steps, accurate composition and precise gradient formation.
- **Patented floating piston and reciprocating shaft assembly:** increases reliability of pumping mechanism and extends seal lifetime — **5-year seal guarantee.**
- **Patented rapid-refill design:** accurate and smooth flow at all settings for all solvents.

- **Programmable solvent selection:** fully automated solvent switching for any binary combination of 8 different solvents.

System Gold® offers the world's smartest and most advanced solvent delivery modules available. Choose the *116 module* for isocratic and automated step-gradient operation, or the *126 module* for full binary gradient chromatography.

Both the 116 and 126 modules feature all-digital electronics and a simple, intuitive "point-and-click" computer interface that lets you control solvent delivery and download methods easily and efficiently, right from your System Gold PC.

Combine this with our simply designed, smooth operating and time-tested single-piston pumping technology with patented deficit flow compensation and you have an HPLC smart enough to give you more than results — it gives you absolute confidence.



1. Intelligent $\mu\text{-Flow}^{\text{TM}}$ liquid head.
2. Patented check valves.
3. Convenient piston wash feature.
4. Patented floating piston design.
5. Patented floating reciprocating shaft.
6. Pressure transducer.

Packaging - Processing
Bid on Equipment

1-847-683-7720

www.bid-on-equipment.com

Micro-To-Macro Responsiveness.

A simple "click" of a mouse allows you to select flow rates from 1 $\mu\text{L}/\text{min}$ to 10 mL/min. A quick liquid head change extends the flow range to 30 mL/min per pump head.

Our intelligent liquid heads feature real-time electronic compressibility compensation to assure you a consistently uniform and pulse-free flow, even when you're faced with widely variable solvent and backpressure conditions. In fact, flow rate reproducibility is better than $\pm 0.1\%$.

Built-In Reliability.

Each solvent delivery module is equipped with a handy piston wash function that prevents the build-up of crystallized salts that can damage the piston and piston seals. This along with our patented floating piston design allows us to unconditionally guarantee System Gold piston seals for up to 5 years. Especially important when working with high salt buffers.

Unparalleled Gradient Accuracy.

The single-piston rapid-refill pump design helps in other ways, too.

Patented check valves ensure dependable operation even at low flow rates, and pressures. Unlike static and low-pressure mixing systems, dynamic high-pressure mixing delivers superior gradients over the *full dynamic range* of mobile phase compositions and flow rates. This eliminates the need for expensive solvent degassing systems.

Programmable Solvent Selection.

Whichever module you choose, you can program the selection of multiple solvents — up to 4 per liquid head.

So you can automate everything from step gradients to fast affinity chromatography to column clean-up. And because you can automate system equilibration, start-up and shutdown, you save a great deal of time and effort.

116 and 126 Programmable Solvent Module

Specifications

T · H · E

BECKMAN

Plus

SCIENCE

SUPPORT

SOLUTIONS



I.S./ISO 9000/EN 29000
QUALITY SYSTEM

Flow Rate

Flow Rate Reproducibility

Composition

Piston Displacement

Operating Pressure

High-Pressure Limit

Low-Pressure Limit

Pressure Readout Accuracy

Compressibility Compensation

Solvent Selection

Wetted Surfaces

Maximum Solvent Temperature

Ambient Operating Temperature

External Inputs

External Outputs

Alarm

Memory Protection

Time Programming Files

Display

Electrical

Dimensions

Weight

Specifications subject to change without notice.

Ordering Information

116 Programmable Solvent Module

Analytical: 0.001 to 10.0 mL/min; 0.001 mL increments.
Preparative: 0.003 to 30.0 mL/min with optional preparative liquid heads.

± 0.1% or 0.003 mL/min, whichever is greater.

Selectable from 1 of 4 solvent inlets.

Analytical: 90 µL.
Preparative: 243 µL.

Analytical: 0 to 6000 psi.
Preparative: 0 to 2000 psi.
Units: user-selectable (kPSI or MPa), displayed at controller.

Selectable, from 20 to 6000 psi.

Selectable, from 0 to 6000 psi.

± 2% or ± 10 psi, whichever is greater.

Fully automatic, real-time.

Time-programmable four-way solvent selection valve.

316 stainless steel, Teflon®, sapphire, ruby.

75°C.

4°C to 40°C.

Start File, Hold File, Continue File and Stop Flow by contact closures.

Ready for injection; contact closure for pressure limit status; six time-programmable relays.

Time-programmable audible alarm.

Battery memory backup maintains parameters for minimum of one week.

Up to 150 timed steps per method with the 'System Gold' PC workstation. 5 files of up to 32 steps, each with "loop" capability with the NEC® controller.

Selectable items include: Flow Rate, Solvent Inlet, Pressure, HI/LO Limits, Relays ON/OFF, Units (kPSI or MPa), Diagnostics; updated every 1 sec.

Voltage: 90-130 or 198-264 VAC; 50 or 60 Hz.
Power: 160 Watts.

Length: 15.5" (39.5 cm).
Width: 11.0" (27.9 cm).
Height: 8.0" (20.3 cm).

42 lbs (19 kg).

238616 116 Programmable Solvent Module.
238703 116P Preparative Programmable Solvent Module.
239350 Solvent Reservoir Kit.
239400 Pump Maintenance Kit.

126 Programmable Solvent Module

Analytical: 0.001 to 10.0 mL/min for each pumping mechanism; 0.001 mL increments; max isocratic flow rate 20 mL/min.
Preparative: 0.01 to 30.0 mL/min with optional preparative liquid head for each pumping mechanism. Max isocratic flow rate 60 mL/min.

± 0.1% or 0.003 mL/min, whichever is greater.

0 to 100% in 1% increments. Selectable from 1 of 4 solvent inlets per pump head.

Analytical: 90 µL.
Preparative: 243 µL.

Analytical: 0 to 6000 psi.
Preparative: 0 to 2000 psi.
Units: user-selectable (kPSI or MPa), displayed at controller.

Selectable, from 20 to 6000 psi.

Selectable, from 0 to 6000 psi.

± 2% or ± 10 psi, whichever is greater.

Fully automatic, real-time.

Two time-programmable four-way solvent selection valves.

316 stainless steel, Teflon®, sapphire, ruby.

75°C.

4°C to 40°C.

Start File, Hold File, Continue File and Stop Flow by contact closures.

Ready for injection; contact closure for pressure limit status; six-time programmable relays.

Time-programmable audible alarm.

Battery memory backup maintains parameters for minimum of one week.

Up to 150 timed steps per method with the 'System Gold' PC workstation. 5 files of up to 32 steps, each with "loop" capability with the NEC® controller.

Selectable items include: Flow Rate, Mobile-phase Composition, Gradient Curve, Solvent A, Solvent B, Pressure, Units (kPSI or MPa), HI/LO Limits, Relays ON/OFF, Diagnostics; updated every 1 sec.

Voltage: 90-130 or 198-264 VAC; 50 or 60 Hz.
Power: 160 Watts.

Length: 15.5" (39.5 cm).
Width: 11.0" (27.9 cm).
Height: 15.0" (38.1 cm).

66 lbs (30 kg).

238626 126 Programmable Solvent Module.
238704 126P Preparative Programmable Solvent Module.
239350 Solvent Reservoir Kit.
239400 Pump Maintenance Kit.

Worldwide Sales Offices: Africa, Middle East (Switzerland, Nyon) (22) 994 07 07. Australia, Gladesville (61) 02 816-5288. Austria, Vienna (2243) 85656-0. Canada, Mississauga (800) 387-6799. France, Gagny (33) 1 43 01 70 00. Germany, Munich (49) 89-38871. Hong Kong, Aberdeen (852) 814 7431. Italy, Milan (39) 2-953921. Japan, Tokyo 3-3221-5831. Mexico, Mexico City (52) 5 264 0667. Netherlands, Mijdrecht 02979-85651. Poland, Warszawa 408822,408833. Singapore (65) 339 3633. South Africa, Johannesburg (27) 11-805-2014/5. Spain, Madrid (1) 358-0051. Sweden, Bromma (8) 98-5320. Switzerland, Nyon (22) 994 07 07. Taiwan, Taipei (886) 02 378-8000. U.K., High Wycombe (0494) 441181. U.S.A. 1-800-742-2345.

BECKMAN

Packaging - Processing

Bid on Equipment

1-847-683-7720

www.bid-on-equipment.com

• 2500 Harbor Boulevard, Box 3100 • Fullerton, California 92634-3100
• TWX: 910-592-1260 • Telex: 678413 • Fax: 1-800-643-4366

Printed in U.S.A. on recycled paper. System Gold® and µ-Flow™ are trademarks of Beckman Instruments, Inc.