

Programmable Syringe Pumps

NEW!!

Single Position Syringe Pump



Expanded flow rate range:
15 nanoliters/min to 200 ml/min

- Syringe automatically refills to deliver any volume from any syringe size
- PC control and data logging with KEM-Pump software
- Closed system for reactive and pyrophoric reagents

Dual Position Syringe Pump

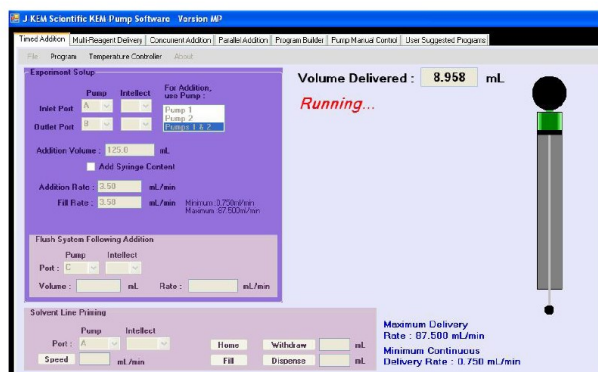


The **SYR-1200** is the most versatile syringe pump available for research. Available in both a single and dual pump configurations, the SYR-1200 dispenses fluids with sub-microliter precision as either a single injection or continuous flow. KEM-Pump software, included with each pump, implements seven syringe pump programs that meet virtually any fluid delivery need.

Key features of the syringe pump include:

- Multi-port distribution valve delivers 14 reagents to one reactor, or 1 reagent to 14 reactors, or any combination in between.
- 100% glass and Teflon fluid path stable to acids, bases, and organic solvents.

KEM-Pump Software implements nine fluid delivery programs that automate virtually any reagent delivery or sampling application.



Program 1 - Timed Addition

Continuous delivery of any volume at a user entered flow rate.

Program 2 - Sequential Addition

Sixteen step program sequentially delivers up to 14 different reagents to multiple reactors. Independent volume and flow rates for each step.

Program 3 - Parallel Addition

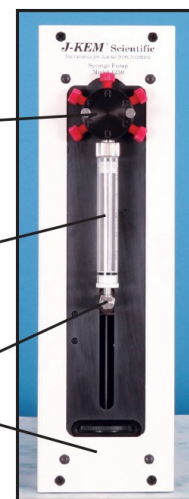
Adds a single reagent to multiple reactors (up to 7) in parallel with independent volume and flow rates.

Automated distribution valve fills and dispenses from up to 8 ports

Glass and Teflon syringe

Delivery rates from 15 nL/min to 200 mL/min

Up to 32 pumps can be combined into a single system



Program 4 - Concurrent Addition

Simultaneously adds two reagents to a single reactor at independent rates and volumes. Twelve step addition program. Dual syringe pump systems only.

Program 5 - pH Stat and Constant Pressure Addition

When the optional pH feature is ordered, solutions can be titrated and then maintained at a constant pH. The optional pressure transducer adds reagents at a constant pressure.

Program 6 - Program Builder

Drag-and-drop any sequence of pump commands to perform virtually any fluid delivery program. Includes I/O and temperature control methods. Remove control from PC or LabView.

Program 7 - Manual Control

Allows manual control of the pump in a point-and-click interface.

Program 8 - Autosampler

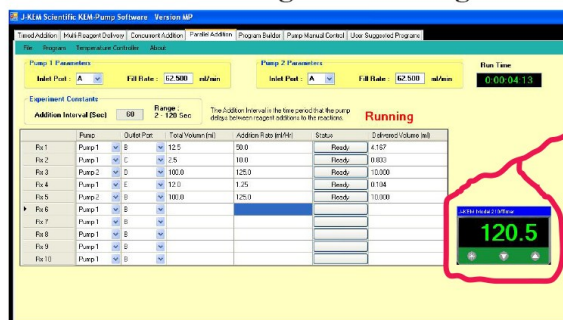
Aspirate samples at user set times to sample vials.

Program 9 - Custom

J-KEM provides one custom program, written to accomplish your unique task at no charge. Contact J-KEM for details.

Fill
Port(2)
Speed(3.75)
Loop(96)
Dispense(0.2500)
Delay_Seconds(1)
Close_Loop
Port(3)
Home

J-KEM's Technologies Work Together



Connect a J-KEM temperature controller into the PC running KEM-Pump and the controller becomes part of the syringe pump program.

Control additions based on time, temperature, pressure, or pH. See p 14.

Programmable Syringe Pumps with Netbook PC Controller

Includes the syringe pump and a netbook PC with KEM-Pump pre-loaded and ready to run

Single position syringe pump with netbook PC controller.

Requires the selection of one syringe and valve for operation (below).

Input: **120 Vac**

KEMV6-1200

Input: **230Vac**, CE approved

KEMV6-1240

Dual position syringe pump with netbook PC controller.

Requires the selection of two syringes and valves, one for each pump (below).

Input: **120 Vac**

KEMV6-2200

Input: **230Vac**, CE approved

KEMV6-2240

Programmable Syringe Pumps with Software

Netbook controller not included. KEM-Pump software supplied

Single position syringe pump with KEM-Pump software.

Requires the selection of one syringe and valve for operation (below).

Input: **120 Vac**

KEMV6-1200-PC

Input: **230Vac**, CE approved

KEMV6-1240-PC

Dual position syringe pump with KEM-Pump software.

Requires the selection of two syringes and valves, one for each pump (below).

Input: **120 Vac**

KEMV6-2200-PC

Input: **230Vac**, CE approved

KEMV6-2240-PC

Syringe Pump Options

I/O Package. Includes 3 high current outputs (170 mA, 24 Vdc), 3 digital TTL inputs, 1 analog input (8 bits, 0-5 Vdc).

SYR-I/O

Control solenoid valves or read input sensors, all under program control. Includes internal power supply.

Programmable 120 V outlet. Turns equipment On/Off under program control. 3 amps @ 120 Vac (12 amp available)

SYR-120V

Custom Syringe Pumps

Four Position Temperature and pH Controller



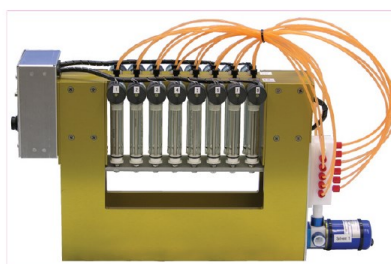
Pump with 4 independent temperature controllers. Maintains the temperature and pH in 4 independent reactions. Custom software with data logging, program storage and recall.

Pump with connections to 22 reagents and reactors.



16-Position with half-sized pumps

Sixteen pump system provides continuous delivery of 8 reagents at independent rates.



Custom pump drives 96 syringes in parallel.



Microfluidic reaction system delivers 24 reagents to a heated reactor. PC control automates 1000 reaction combinations

Syringes (one needed for each syringe module)

Description	Cat #
25 μ L glass syringe with Teflon plunger	SPGS-25
50 μ L glass syringe with Teflon plunger	SPGS-50
100 μ L glass syringe with Teflon plunger	SPGS-100
250 μ L glass syringe with Teflon plunger	SPGS-250
500 μ L glass syringe with Teflon plunger	SPGS-500
1.0 mL glass syringe with Teflon plunger	SPGS-1000
1.25 mL glass syringe with Teflon plunger	SPGS-1250
2.5 mL glass syringe with Teflon plunger	SPGS-2500
5 mL glass syringe with Teflon plunger	SPGS-5000
10 mL glass syringe with Teflon plunger	SPGS-10000
25 mL glass syringe with Teflon plunger	SPGS-25000
50 mL glass syringe with Teflon plunger	SPGS-50000
Shatterproof plastic coating on glass syringe barrel	SPGS-CMS

Teflon Distribution Valves (one needed for each syringe module)

3-Port distribution valve (syringe + 3 addressable ports)	SPDV-3
4-Port distribution valve (syringe + 4 addressable ports)	SPDV-4
6-Port distribution valve (syringe + 6 addressable ports)	SPDV-6
8-Port distribution valve (syringe + 8 addressable ports)	SPDV-8

Teflon Tubing & Fittings

Startup Kit. 20 feet 1/8" OD tubing, 12 nuts & ferrules	SP-SK1
Startup Kit. 100 feet 1/8" OD tubing, 24 nuts & ferrules	SP-SK2
Startup Kit. 20 feet 1/16" OD tubing, 12 nuts & ferrules	SP-SK3
Startup Kit. 100 feet 1/16" OD tubing, 24 nuts & ferrules	SP-SK4
Startup Kit. 20 ft of 1/16" & 1/8" tubing, 24 nuts & ferrules	SP-SK5

Dimensions: SYR1200 12"x3.5"x13" (HxWxD)

Flow rates: 15 nl/min to 200 mL/min

SYR2200 12"x7"x13" (HxWxD)

Accuracy: 0.33% CV, full stroke

Pressure Limit: 60 psi

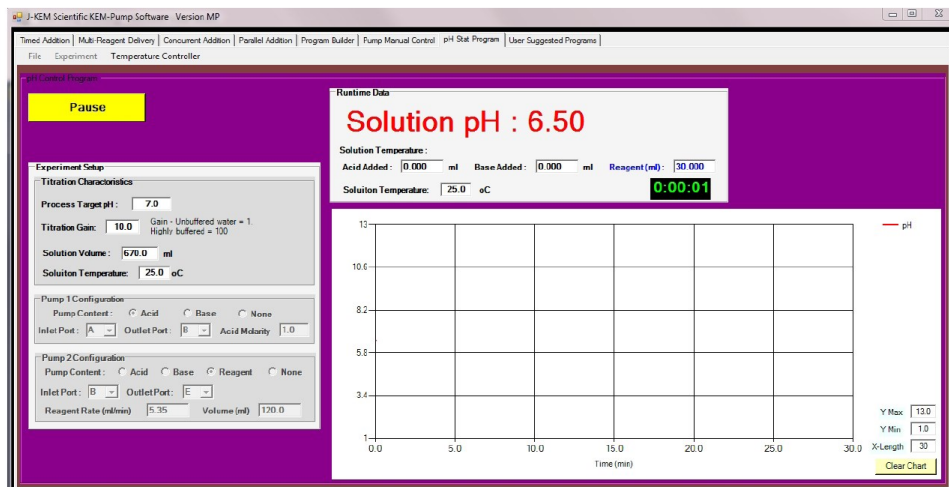
Precision: 0.007% full stroke

Weight: 12 lb (single position), 20 lb (dual position)

New Syringe Pump Features

pH Stat Feature

With the optional pH stat feature your pump can titrate and then maintain a constant solution pH to within 0.02 pH units. Data logging and real time charting. Dual position syringe pumps can use Pump 1 to continuously add a reagent while Pump 2 performs the pH stat function.



Catalog # KEMV6-pH

Pressure Control Feature

The pressure control option dispenses solutions at a constant flow rate or constant pressure. A highly valuable experiment to study filter characteristics or any process that needs to regulate flow rate as a function of pressure. Can be combined with an analytical balance to record the weight of fluid output.

Catalog # KEMV6-Xducer

Contact J-KEM regarding information about compatible pressure transducers.

Real-time graphics, Charting, and Data logging.

Add Solutions at a Constant Rate While Logging System Pressure - Program the pump to add reagents at a constant flow rate while logging the system pressure. Perfect for filtration studies or any experiment requiring logging system pressure as a function of flow rate.

Add Solutions at a Constant Pressure - In this experiment the pump continuously varies the flow rate of the pump in order to maintain a constant system pressure. Useful for filtration studies or any experiment whose design is to study the flow characteristics of a filter or other material over time.