

KDS Gemini Series Dual Rate Syringe Pump



Model 88 Gemini Series... More Than Two Pumps in One

KD Scientific offers the NEW Gemini 88. This unique pump is really two pumps in one. Each side of the Gemini 88 has its own syringe rack, motor and leadscrew. The pump can infuse simultaneously at different rates, or infuse with one syringe and withdraw with the other. When combined with a valve box it provides continuous delivery.

The KDS GEMINI SERIES Syringe Pump offers continuous infusion or withdrawal, 24 hours a day, 365 days a year with the accuracy and low flow of a KD Scientific syringe pump.

The KDS GEMINI SERIES Pump is a breakthrough in pumping technology. The KDS Model 88 has two independent pumping channels linked through hardware and software. When combined with a valve box, it provides the continuous delivery of a peristaltic or piston pump with the accuracy, absence of pulsation and low flow rates of a syringe pump.

The KDS GEMINI SERIES Syringe Pump opens up whole new pumping possibilities. These are some of the applications of this pump:

- The injection of dyes, perfumes and flavoring in industrial applications
- Applications with liquids or viscous materials in micro-manufacturing
- Continuous injections of reactants into reactor vessels
- Simultaneous samplings from two sites
- Continuous injection for long term toxicology testing

Several modes of operation are available to accommodate a range of setups and experimental protocols. A unique movable limit switch mechanism is used to change direction or stop operation of the pump depending on the mode of operation.

- **Reciprocal/Parallel Mode** - Syringe mechanisms can run in the same or opposite directions (i.e. both infusing/withdrawing at the same time or one infusing and the other withdrawing)
- **Proportional Mode** - Different flow rates and syringe diameters can be set for each syringe mechanism
- **AutoStop Mode** - Pump stops operation when a limit switch is activated.
- **Continuous Run Mode** - When a limit switch is activated each syringe mechanism reverses direction.

The pump has high pressure capability and TTL and RS-232 interface for data acquisition and control. The communication ports enable daisy-chaining of up to 100 pumps.

NOTE: KD Scientific syringe pumps are for laboratory use only. They have not been approved by the FDA for clinical use.

Features

- Continuous delivery 24/7
- RS232 computer interface
- Daisy chain up to 100 pumps
- Wide variety of syringes from 0.5 μ l - 140 ml
- High or low pressure
- CE certification
- TTL interface
- 57 lbs of linear force
- 12 month warranty

Benefits

- Accurate fluid delivery
- Consistent delivery of fluids
- Automatic dispensing of small volumes
- Simple set up
- Hands free operation
- Dependability

Applications

- HPLC and LPLC
- Calibrating mass spec
- Controlled drug injections over time
- Simultaneous samplings from two sites

Specifications

# of Syringes	2
Accuracy	0.35 %
Average Linear Force	57 lbs
Communications	RS-232, TTL
Communications Level	2
Depth English	11.25 in
Depth Metric	28.6 cm
Display	LED, 5 digit, numeric
Flow Rate Maximum	106.6 ml/min
Flow Rate Minimum	0.0004 µl/hr
Height English	6 in
Height Metric	15.2 cm
Input Power	
Connection	36 VDC 1.4 Amps
Motor	2 motors, 1/2 to 1/4 microstepping, microprocessor controlled, 0.9° step angle
Motor Stepper 1	1,600 at 1/2 stepping; 3,200 at 1/4 stepping
Revolution of	
Lead Screw	
Net Weight English	15 lb
Net Weight Metric	6.8 kg
Non Volatile Memory	Storage of all settings
Pressure	Standard
Specifications	
Pump Configuration	Standard
Pump Function	Infuse/Withdraw
Pusher Travel Rate	
Maximum	95.25 mm/min
Pusher Travel Rate	
Minimum	0.726699 µm/min
RS-232	RJ11-4 Connector

Specifications (cont'd)

Reproducibility	0.1 %
Step Rate Maximum	416.7 µsec/step
Step Rate Minimum	27.3 sec/step
Step Resolution	0.33 µm/step
Syringe Rack Type	Standard Rack
Syringe Size Maximum	140 ml
Syringe Size Minimum	0.5 µl
TTL	9-pin connector
Type	Microprocessor dual drive, single syringe, infusion/withdrawal
Voltage Range	Selectable, 95 to 130 VAC, 60 Hz or 220 to 260 VAC, 50 Hz
Width English	12.5 in
Width Metric	31.1 cm

Ordering Information

Order No.	Model	Product
78-0388	Gemini 88	Dual Rate Syringe Pump
78-0389	Gemini 88	30 PSI Valve Box
78-0390	Gemini 88	HP Valve Box
78-0392		Foot Switch
78-0393		Daisy Chain
78-0394		RS-232 Connector Cable

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