

KDS Model Pico Syringe Pump



Revision B All specifications subject to change at anytime.



KD Scientific is proud to offer our new Pico Pump. It has infusion and withdrawal capabilities with accurate deliveries of picoliter, nanoliter, microliter and milliliter flow. It is especially designed to hold microliter syringes ranging from 0.5ul to 10ml. Applications include cellular injection, micro flow for drug infusion, capillary liquid chromatography and micro reaction deliveries.

The KDS Pico pump combines smoother flow and updated features to create a high performance pump at affordable prices. The Pico has a bright display and easy to use interface. A new two line 16 character fluorescent display and 6 membrane keys for ease of use and require only two entries to start pumping. Select syringe diameter and flow rate. The flow rate can be changed while the pump is running.

The KDS Pico pump will operate continuously in "rate" mode or accurately dispense a specific amount of fluid in "volume" mode. The micro-stepping pump delivers very smooth and constant flow over the entire flow range. The Pico pump feature non-volatile memory. The pump remembers its last syringe size, flow rate and configuration settings. It meets all the relevant European EMC and Safety requirements for laboratory use.

KD Scientific also offers a family of syringe pumps to meet all applications. The full line of KDS pumps include a simple syringe dispense only pump, a multi-syringe infuse and withdrawal pump, push and pull pumps, continuous pumps for uninterrupted fluid delivery, nanoliter pumps, emulsifier, high pressure and custom OEM pumps.

NOTE: KD Scientific syringes are for laboratory use only.

Benefits

- Inexpensive low volume pump
- Dispense fluid and refill syringe
- No calculations necessary
- Hands-free control of pump
- Dependability

Key Features

- High accuracy low volume delivery
- Infusion/Withdrawal
- Direct unit of flow programming at keyboard
- Footswitch
- 1 year warranty

Applications

- Cellular injections
- Micro reactor delivery
- Microdialysis
- Stereotaxic delivery

Markets

- Academic Institutions
- Pharmaceutical
- Biotech
- Government

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Specifications

Performance

Accuracy	± 0.5%
Reproducibility	± 0.1%
Syringe Type	Plastic or glass
Syringe Size	0.5 µl to 10 ml
Flow Rate	1.3 pl/min (using 0.5 µl syringe) to 0.8788 ml/min (using 2 x 10 ml syringes, combined output)

Force

Average Linear Force	25 lbs***
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Electrical and Mechanical

Non Volatile Memory	Storage of all settings
RS-232 Serial Port*	Yes
TTL Port**	Footswitch control only
Input Power	12 VDC 1.5 Amps
Drive Motor	1.8° step angle geared 36:1 motor
Motor Drive Control	1/4 microstepping
Motor Step per one revolution of the lead screw	14,400 steps
Step Resolution	0.0184 µm/step
Step Rate	1 pulse in 27.6 sec to 200 steps/sec
Pusher Travel Rate	0.0388 µm/min to 0.8333 mm/min

Physical

Dimensions (H x W x D)	11.4 x 22.9 x 11.4 cm (4.5 x 9 x 4.5 in)
Weight	2.3 kg (5 lbs)

* Using a computer to control single or multiple pumps (daisy-chain)

** Using voltage to control the pump (ex. Footswitch control, external valve control)

*** Actual force is higher. Not recommended for applications more than 25 lbs of force

Flow Chart

Syringe Size	Inside Diameter, mm	Minimum	Maximum
0.5 µl	0.10	1.3 pl/min	20.00 nl/min
1 µl	0.15	3.0 pl/min	46.00 nl/min
10 µl	0.46	27.0 pl/min	400.00 nl/min
100 µl	1.46	270.0 pl/min	0.004 ml/min
1000 µl	4.61	2,690.0 pl/min	0.043 ml/min
10 ml	14.57	27.0 nl/min	0.439 ml/min