

# Industrial Syringe Pump

## SP60-1A



### Product Introduction

The SP60-1A Pump is a fully programmable, open frame, precision liquid handling pump module, designed for applications in the 5 uL to 25 mL range. It is controlled by an external computer or microprocessor and automates pipetting, diluting, and dispensing functions.

### Model Number

| SP60-1A

### Features

#### | Unmatched application flexibility:

- Fully programmable;
- Can be controlled by an external computer or microprocessor;
- Available with a range of syringe sizes and valve configurations.

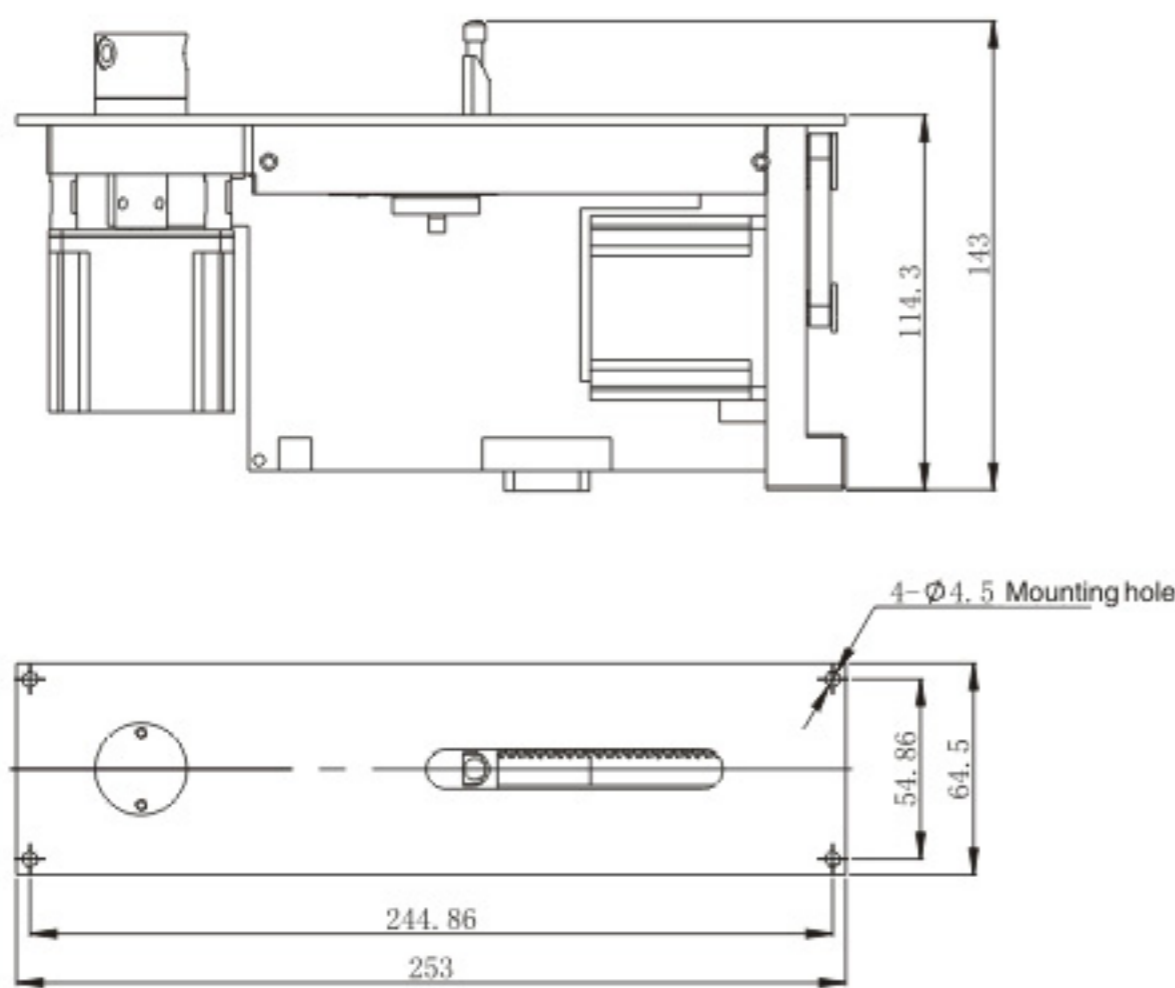
#### | Faster product development:

- Can speed up and simplify validation of your instruments;
- Robust performance: optical encoder for step loss detection;
- full control of start speed, top speed and cut-off speeds;
- Programmable ramp-up and ramp-down rates;
- Planned maintenance replacement of valves and syringes.

#### | Straight forward integration:

- RS-232/RS-485 communication interfaces;
- Up to fifteen SP60-1A pumps can be connected together;
- Two digital inputs and three outputs for TTL level signals;
- Used for synchronization with external devices.

### Dimension Drawing (Unit: mm)



### Technical Specifications

Precision	Repetition error $\leq 0.05\%$ CV at full stroke (500 uL syringe and above), (DI water at room temperature)	Valve switch time	$\leq 250$ ms between adjacent ports
	Accuracy	Error $\leq 0.5\%$ at full stroke (DI water at room temperature)	Valves type
Plunger drive		Stepper motor driven lead screw with optical encoder for step loss detection and home flag	Tubing fittings
	Syringe fittings		1/4 - 28"
Plunger travel	60 mm(6000 steps or 48000 steps)	Power requirements	24 VDC $\pm 10\%$ /2.0 A (peak)
Plunger speed	0.00625mm/s--50mm/s	Communication interface	RS-232, RS-485
Run time per stroke	1.2 seconds-160 minutes	Baud rate	9600 or 38400 (RS-232 and RS-485)
Speed resolution	0.01mm or 0.00125mm	Addressing	Up to 15 individual addresses available (DIP switch)
Syringes	Sizes 50uL, 100uL, 250uL, 500uL, 1.0mL, 2.5mL, 5.0mL, 10mL, 25mL	Input	Two inputs with 4.7k pull-ups, 5V HCMOS. For restart the paused instruct
	Barrel material Borosilicate glass	Output	Three outputs, 5V HCMOS, For synchronous external devices
	Plunger rod material Stainless steel	Operating temperature	15°C--40°C
	Plunger seal material PTFE or UHMWPE (most sizes)	Operating humidity	20-80 % RH at 40°C
		Storage temperature	-20°C--65°C

