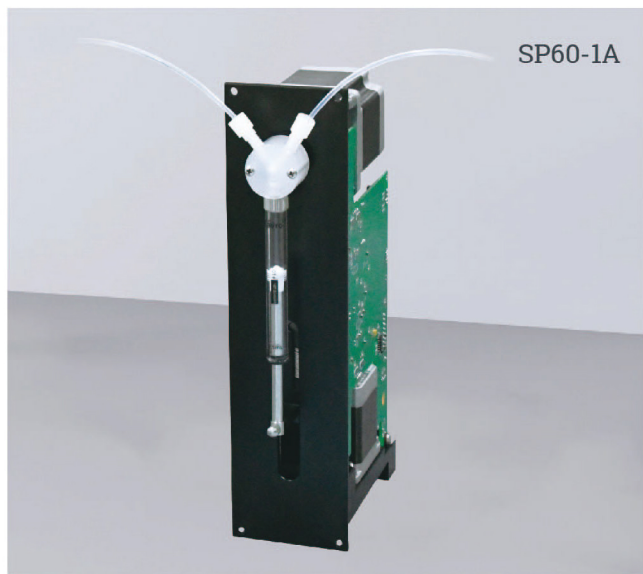


# Industrial Syringe Pump

## SP60-1A



### Introduction

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

### 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;

| Straight forward integration:

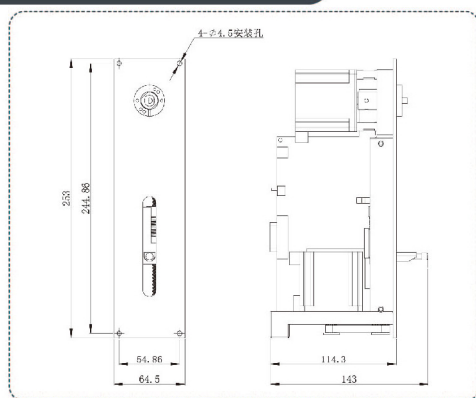
RS-232/RS-485 communication interfaces;

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. Planned maintenance replacement of valves and syringes.

### Dimension Drawing (Unit: mm)



### Technical Specifications

Accuracy	Error $\pm 0.1\%$ (stroke $\geq 30\%$ maximum stroke)	Syringe material	Barrel material: Borosilicate glass
Plunger drive	Stepper motor driven lead screw with optical encoder for step loss detection and home flag		Plunger rod material: Stainless steel
			Plunger seal material: PTFE
Max. stroke(Steps)	60mm(6000 steps or 48000 steps)	Power supply	DC24V $\pm 10\%$ /2.0A(Peak value)
Linear speed range	0.01mm/s-60mm/s	Communication interface	RS232/RS485
Run time per stroke	1.25s-100min	Baud rate	9600 or 38400
Speed resolution	0.01mm/s	Addressing	UP to 15 individual addresses available(BCD switch)
Stroke resolution	0.01mm or 0.00125mm	Input	Two TTL level signal inputs, for restart the paused instruct
Valve switch time	$\leq 250$ ms between adjacent ports	Output	Three TTL level signal outputs, for synchronous external devices
Valves type	3-port 120°(Standard)	Condition temperature	15°C-40°C
Valve material	Valve body: PCTFE	Storage temperature	-20°C -65°C
	Valve element: PTFE	Max. pressure	0.68Mpa
Tubing fittings	1/4"-28 or M6	Dimension(mm)	143*64.5*253 (mm)
Syringe fittings	1/4"-28	Weight	2.20kg
Syringes	50 $\mu$ L, 100 $\mu$ L, 250 $\mu$ L, 500 $\mu$ L, 1.0mL, 2.5mL, 5.0m, 10mL, 25mL		