

Intelligent Syringe Pump

ISPLab02



Introduction

The intelligent syringe pump with infusion/withdrawal mode, stainless steel body, and 4.3" colour LCD screen is easy to operate. It can install and fix different types of injectors or syringes, and it is suitable for transferring micro flow rates with high precision (non-medical).

Features

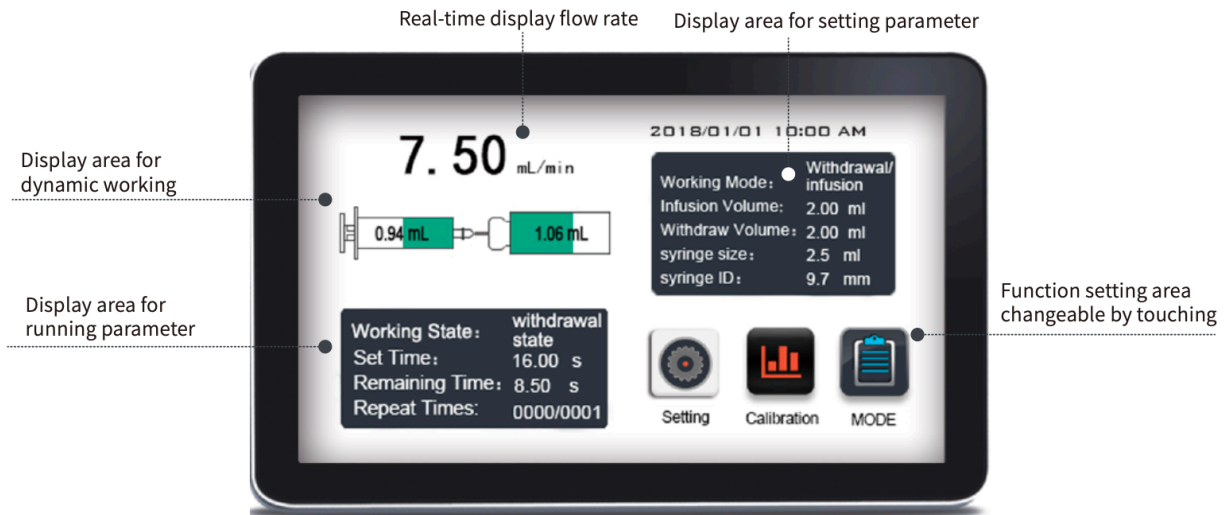
1. Online flow rate modification function: The pump is running, without stopping, adjust the flow rate at any time to meet complex application.
2. Colorful LCD display: Friendly interface, 4.3 inch LCD display every technical parameter in real time.
3. Input syringe inner diameter function: Can choose the injector from the list or input the injector inner diameter directly.
4. Two measurement mode for selection: Infusion volume --- Infusion flow rate, Infusion volume --- Infusion time.
5. 4 different working modes: Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion. The parameters of each working mode saving separately. Each working mode can be changed to continuous mode by setting repeat parameters.
6. Alarm function: The pump will stall and give an alarm when the drive structure of the pump is blocked.

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Interface Display



Technical Specifications

Working mode	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion
Channel number	2
Syringe size	0.5 μ L-150mL
Syringe selection	Syringe size and customized diameter
Linear speed range	1 μ m/min-132mm/min(Flow rate=Linear speed* syringe inner cut area)
Min. linear rate	1 μ m/min
Linear force	8-20kgf, online adjust
Max. stroke	140mm
Stoke resolution	0.078 μ m/ μ step
Accuracy	Error $\leq \pm 0.3\%$ (Stoke $\geq 30\%$ of maximum stroke)
Back distance	0.01-10mm
Stored modes	Can save at most 60 common modes
Display	Industrial grade 4.3"LCD color display
Control method	Touch screen and Mechanical keypad
Power-off memory	Display the previous data parameter after power supply again
Output	OC gate signal output,used to indicate running status and direction

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External control	Start/stop signal, withdrawal and infusion signal, active switch signal: (5-24V)
	Start/stop signal, passive switch signal, such as foot pedal switch
Communication interface	RS232/RS485, Modbus protocol(RTU mode)
Power supply	AC90-240V/65W
Condition temperature	0-40°C
Relative humidity	<80%
IP rate	IP31
Dimension(mm)	282*242*157
Weight	4.62kg

Technical Specifications

Plastic syringe	Inside Diameter(mm)	Flow Rate(μ L/min-mL/min)	
		ISPLab01/ISPLab02	ISPLab04/ISPLab12
1mL	4.70	0.0174-2.29	0.0174-2.29
2.0mL	9.12	0.0653-8.623	0.0653-8.623
5mL	12.48	0.1223-16.147	0.1223-16.147
10mL	15.89	0.1983-26.177	0.1983-26.177
20mL	20.00	0.3142-41.469	_____
30mL	22.50	0.3976-52.484	_____
50mL	28.90	0.6560-86.588	_____
100mL	32.00	0.8042-106.154	_____
150mL	40.00	1.2566-165.871	_____

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Glass syringe	Inside Diameter(mm)	Flow Rate($\mu\text{L}/\text{min}$ - mL/min)
		ISPLab01-G1/ISPLab01-G2/ISPLab02-G1
250 μL	2.30	0.0042-0.5484
500 μL	3.25	0.0083-1.095
1mL	4.60	0.0167-2.2033
2.5mL	7.28	0.0416-5.4944
5mL	10.30	0.0833-10.9986
10mL	14.57	0.1667-22.0081
25mL	23.00	0.4166-54.9859
50mL	32.57	0.8321-109.976
100mL	32.57	0.8321-109.976

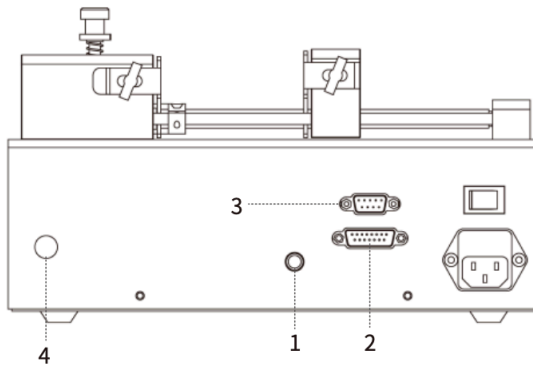
Microsyringe	Inside Diameter(mm)	Flow Rate(nL/min - $\mu\text{L}/\text{min}$)
		ISPLab01/ISPLab02
0.5 μL	0.10	0.008-1.0296
1 μL	0.15	0.018-2.3232
2 μL	0.20	0.031-4.1448
5 μL	0.35	0.096-12.6984
10 μL	0.50	0.2-25.8
25 μL	0.80	0.5-66.4
50 μL	1.10	1-125.4
100 μL	1.60	2-265.4

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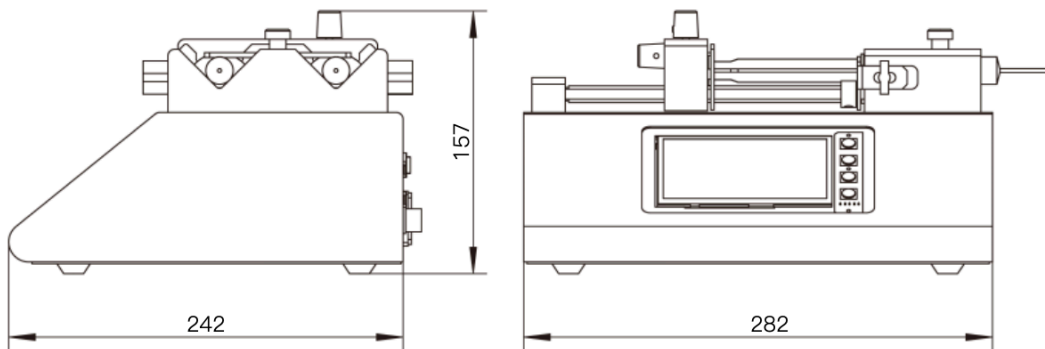
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Syringe Pump External Control Schematic



- 1-Foot pedal connector: Connect with foot pedal switch
- 2-15 Pin connector: External input and output
- 3-9 pin connector: RS232 and RS485
- 4-Ground pole

Dimension Drawing (unit:mm)



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