

Technical Spec

Product model	Drive unit	dLSP 501S	dLSP 501L	dLSP 501W
	Controller	dLSP uC		
Control mode	Touch screen controller	Control 1-4 separated drive units with preset parameters through touch screen controller		
	Computer	Dedicated PC control software can control 10 drive units independently		
	PLC/ other controller	RS485 interface, Modbus RTU, can control 40 drive units independently		
Display	7 inch HD LCD			
Work mode	Infusion only, withdrawal only, infusion/withdrawal, withdrawal/infusion, programming (on PC software)			
Stroke of the drive unit	70mm	70mm	95mm	
Pusher advance per microstep	0.095um/ustep	0.099um/ustep	0.098um/ustep	
Linear speed	0.6096um/min-182.88mm/min	0.635um/min-190.5mm/min	0.625um/min-143.75mm/min	
Linear speed resolution	0.6096um/min	0.635um/min	0.625um/min	
Linear travel accuracy	≤ ±0.35%(when travel ≥ 30% of the stroke)			
Linear travel CV	0.03% (rated travel)			
Linear force (Max.)	15N (can be set 20%-100%)	30N (can be set 20%-100%)	100N (can be set 20%-100%)	
Syringe(built-in manufacturer, or user-defined)	0.5uL-250uL	0.5uL-1000uL	5uL-60mL	
Flow rate calibrate	Calibrate the user-defined syringe for better flow rate /dispensing volume accuracy and precision			
Parameter method	Up to 100 parameter methods can be stored on the controller, and can be imported/exported to USB flash drive			
Programming function	Parameter configured based on workflow on PC. PC method programmer: infusion, withdrawal, delay, repeat. PC control software: constant flow rate, ramp up/down, delay, repeat.			
Screen lock	Prevent misoperation			
User access control	Three levels of user access (administrator, developer, operator), each user can have an exclusive password			
Log record	Record the pump operation history, and can be exported to a USB flash drive			
Electronic signature	There are electronic signatures on the log record for FDA 21CFR Part11 compliance			
Pump state when powered up	The default state is stop, can be set to continue to run through communication commands			
Fast forward/backward	Infuse or withdraw liquid at full speed			
Controller dimensions (LxWxH)	187mm*123mm*39mm			
Controller weight	0.6kg			
Power supply for controller	AC 90V-260V/30W			
Drive unit dimensions (LxWxH)	170mm*35mm*58mm	180mm*45mm*74mm	235mm*103mm*91mm	
Drive unit weight	0.31kg	0.51kg	1.65kg	
Power supply for drive unit	DC 24V/2W	DC 24V/3.6W	DC 24V/7.5W	

Flow rate for reference

Syringe (uL)	Syringe ID(mm)	dLSP 501S	dLSP 501L	dLSP 501W
0.5uL	0.10	0.0048nL/min-1.435uL/min	0.0050nL/min-1.495uL/min	-
1uL	0.15	0.0108nL/min-3.230uL/min	0.0112nL/min-3.365uL/min	-
2uL	0.20	0.0191nL/min-5.742uL/min	0.0199nL/min-5.982uL/min	-
5uL	0.35	0.0586nL/min-17.59uL/min	0.0611nL/min-18.32uL/min	0.0601nL/min-13.82uL/min
10uL	0.50	0.1196nL/min-35.89uL/min	0.1246nL/min-37.39uL/min	0.1227nL/min-28.21uL/min
25uL	0.80	0.3063nL/min-91.88uL/min	0.3190nL/min-95.71uL/min	0.3140nL/min-72.22uL/min
50uL	1.10	0.5790nL/min-173.7uL/min	0.6032nL/min-180.9uL/min	0.5937nL/min-136.5uL/min
100uL	1.46	1.020nL/min-306.0uL/min	1.063nL/min-318.8uL/min	1.046nL/min-240.5uL/min
250uL	2.30	2.531nL/min-759.4uL/min	2.637nL/min-791.1uL/min	2.595nL/min-596.9uL/min
500uL	3.25	-	5.265nL/min-1580uL/min	5.182nL/min-1192uL/min
1000uL	4.61	-	10.594nL/min-3178uL/min	10.43nL/min-2398uL/min
2mL	9.00	-	-	39.74nL/min-9.140mL/min
5mL	13.10	-	-	84.20nL/min-19.37mL/min
10mL	16.60	-	-	135.2nL/min-31.10mL/min
20mL	19.00	-	-	177.1nL/min-40.74mL/min
30mL	23.00	-	-	259.5nL/min-59.69mL/min
60mL	29.14	-	-	416.6nL/min-95.82mL/min

LONGER
A Halma company



Flow rate can be adjusted during aspirating and dispensing

dLSP 501X Series Digital Split-type Syringe Pump

- Remote pump drive unit with compact structure and small footprint, ideal for hand-held or clamping devices
- High precision and pulseless delivery, suitable for small liquid volume transfer and handling

- 7 inch high-definition LCD touchscreen, easily constructs a multi-function system with up to 4 drive units, and each drive unit could have independent parameters.

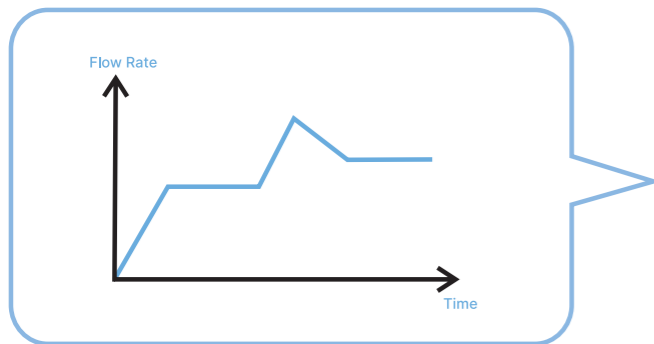


The 4-channel base provides a magnetic charging interface, easy for integrating multi-channel systems.

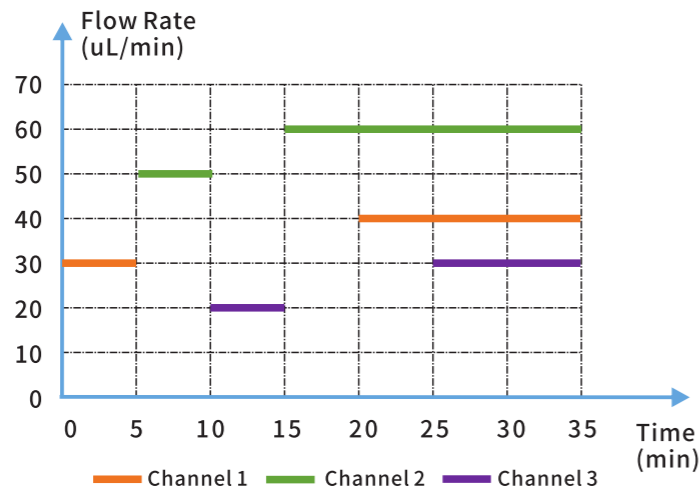


dLSP 501W could be used with 5uL-60mL syringe, achieving 0.06nL/min-95mL/min flow rate range.

- Adjust the flow rate in real-time (during aspirating and dispensing) according to the experimental conditions, improve experimental efficiency, and reduce the cost

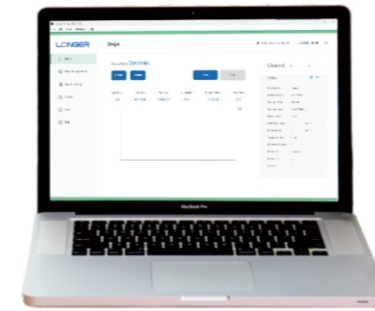


- Multiple work modes, including infusion only, withdrawal only, infusion/ withdrawal, withdrawal/ infusion, and programmable modes, for various applications.

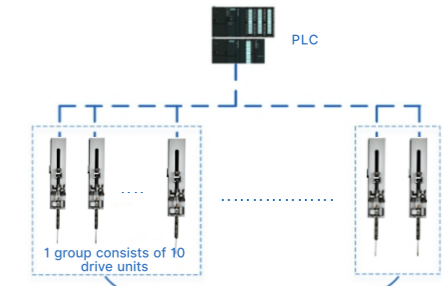


Parameters programming through dedicated PC software can achieve complex flow profiles for multiple drive units

- The computer can control the drive units through dedicated PC software. PLC or other controller can control the drive units through RS485/ Modbus RTU. Each drive unit can be controlled independently with individual parameters.



Computer Control



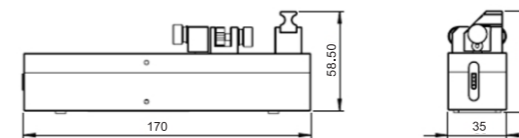
1 computer can independently control up to 4 groups

RS485 Communication Control

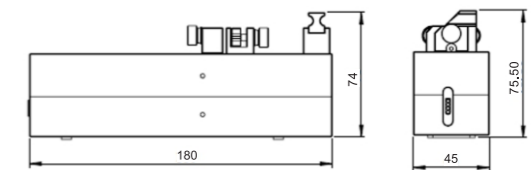
- Parameters can be saved as a method, which can be stored on the controller and imported/exported to a USB flash drive, simplifying the parameter configuration and facilitating parameter sharing between different drive units.
- Powerful features, including the lock screen function, three-level access management with password protection, log recording, and electronic signatures, ensure the safety, accuracy, and compliance of operations.

Dimension:

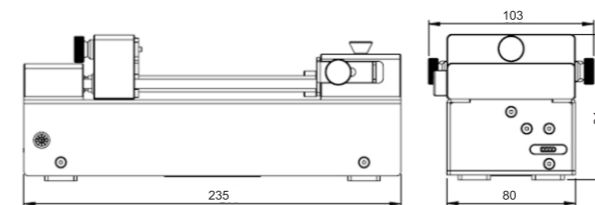
dLSP 501S



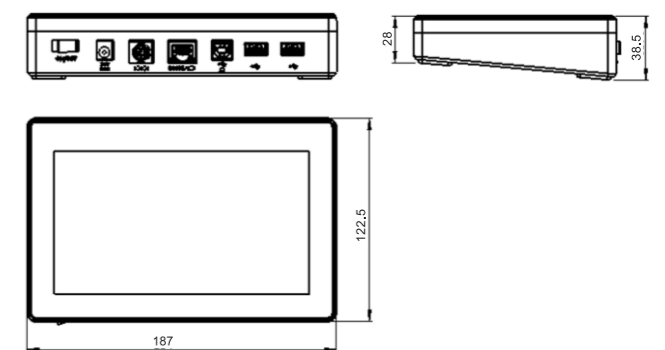
dLSP 501L



dLSP 501W



dLSP uC Controller



Extensive Applications:

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|----------------------------------|---------------------------|-------------------|
| Electrospinning | Capillary Electrophoresis | Catalyzer |
| Microfluidics/Microfluidic Chips | Drug Discovery | Neuroscience |
| Animal Experiment | Cell Injections | Organic Synthesis |
| Toxicology Studies | Microcapsule | Nutrition Science |