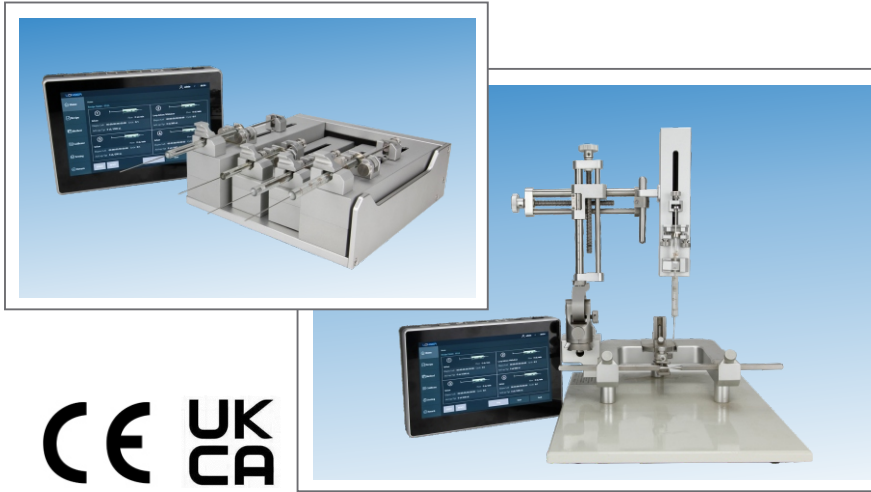


# Digital Split-type Syringe Pump

**LONGER**

A Halma company

## dLSP 501S/ dLSP 501L



- 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 touch screen with intuitive graphic interface for fantastic interactive experience
- Dedicated PC software for parameter programming, enabling complex flow profiles for four drive units

|                                   |   |   |           |
|-----------------------------------|---|---|-----------|
| Product model                     | Drive unit  | dLSP 501S   | dLSP 501L |
|                                   | Controller  | dLSP uC   |           |
| Work mode                         | Infusion only, withdrawal only, infusion/withdrawal, withdrawal/infusion, programming (on PC software)      |   |           |
| Display                           | 7 inch HD LCD   |   |           |
| Control mode                      | Touch screen controller   | Control 1-4 separated drive units with preset parameters through touch screen controller  |           |
|                                   | PLC/ Computer   | RS485 communication interface, Modbus RTU, 1 group consists of up to 8 drive units, 1 computer can independently control up to 5 groups |           |
| Stroke of the drive unit          | 70mm  |   |           |
| Pusher advance per microstep      | 0.095um/ustep   | 0.099um/ustep   |           |
| Linear speed                      | 0.6096um/min-182.88mm/min   | 0.635um/min-190.5mm/min   |           |
| Linear speed resolution           | 0.6096um/min  | 0.635um/min   |           |
| Linear travel accuracy            | ≤ ±0.35% (when travel ≥ 30% of the stroke)  |   |           |
| Linear travel CV                  | 0.03% (rated travel)  |   |           |
| Linear force (Rated)              | 15N (the force can be set 20%-100%)   | 30N (the force can be set 20%-100%)   |           |
| Syringe                           | 0.5uL-250uL (built-in manufacturer, or user-defined)  | 0.5uL-1000uL (built-in manufacturer, or user-defined)   |           |
| 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 work flow on PC software: infusion, withdrawal, delay, repeat, up to 16 steps |   |           |
| 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 signature on the log record for FDA 21CFR Part11 compliance                            |   |           |
| Pump state when power 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 (L X W X H) | 187mm*123mm*39mm  |   |           |
| Controller weight                 | 0.6kg   |   |           |
| Drive unit dimensions (L X W X H) | 170mm*35mm*58mm   | 180mm*45mm*74mm   |           |
| Drive unit weight                 | 0.31kg  | 0.51kg  |           |
| Power Supply                      | AC 90V-260V/10W   |   |           |

| Product model |                | dLSP 501S                  | dLSP 501L                    |
|---------------|----------------|----------------------------|------------------------------|
| Syringe (uL)  | Syringe ID(mm) | Flow rate for reference    |                              |
| 0.5           | 0.10           | 0.0048nL/min-1.435uL/min   | 0.0050nL/min-1.495uL/min     |
| 1             | 0.15           | 0.0108nL/min-3.230uL/min   | 0.0112nL/min-3.365uL/min     |
| 2             | 0.20           | 0.0191nL/min-5.742uL/min   | 0.0199nL/min-5.982uL/min     |
| 5             | 0.35           | 0.0586nL/min-17.586uL/min  | 0.0611nL/min-18.319uL/min    |
| 10            | 0.50           | 0.1196nL/min-35.890uL/min  | 0.1246nL/min-37.386uL/min    |
| 25            | 0.80           | 0.3063nL/min-91.879uL/min  | 0.3190nL/min-95.707uL/min    |
| 50            | 1.10           | 0.5790nL/min-173.709uL/min | 0.6032nL/min-180.946uL/min   |
| 100           | 1.46           | 1.0200nL/min-306.014uL/min | 1.0625nL/min-318.765uL/min   |
| 250           | 2.30           | 2.5315nL/min-759.437uL/min | 2.6369nL/min-791.080uL/min   |
| 500           | 3.25           | -                          | 5.2651nL/min-1579.543uL/min  |
| 1000          | 4.61           | -                          | 10.5936nL/min-3178.092uL/min |