



Micro Dosing Pump MDP-7777

Features

- MICRO-INJECTION
- MICRO-SUCTION
- CONTINUOUS FLOW
- RAPID SAMPLING

Description

The new Malema Micro Dosing Pump represents a quantum leap in design of small size high-precision fluid delivery systems. Injection-molded using extremely durable, but light weight engineered reinforced thermoplastics, the Malema Micro Dosing Pump provides economical cost with superior performance and precision and ultrafast response/start-stop characteristics. Highly energy efficient, the Malema Micro Dosing Pump consumes zero power in hold position.

Operation

Malema Micro Dosing Pump based on a novel piezoelectric motor (piezo-motor) technology. At the heart of the new Malema Micro Dosing Pump is a precise miniature rotary piezomotor, integrated with an optical encoder (32,000 PPR), that is directly coupled to a peristaltic pump head providing a direct-drive mechanism. The end result is an economical Micro Dosing Pump system that eliminates the drawbacks of traditional systems and provides unsurpassed dynamic range of flow rate with ultra-smooth delivery and single nanoliter droplet dispensing capability. The new Malema Micro Dosing Pump can be used in micro-injection, micro-suction, rapid sampling, scanning microflow and continuous flow mode applications. Furthermore, the exceptional dynamic properties of the underlying piezoelectric motor enable the Micro Dosing Pump to operate precisely at high frequency (i.e. >100 Hz).

Unique Multifunctional Control

The Malema Micro Dosing Pump can be manually programmed via the LCD interface. The unique properties of the underlying piezo-motor control enables the Malema Micro Dosing Pump to perform in three operational modes:

Continuous mode: Micro Dosing Pump functions in a similar manner as a traditional peristaltic pump.

Pulse mode:

Micro Dosing Pump functions as a micro-injection/micro-suction device.

Custom mode:

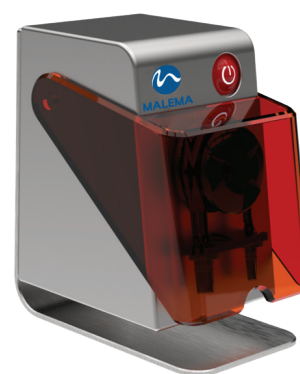
Provides unlimited programmable control of all pump functions utilizing freely available Python API*.

*Python is an interpreted high-level programming language for general purpose programming and is compatible with a range of economical third-party hardware (e.g. Raspberry Pi). See <https://github.com/dti-motors> for more information and to download the API and sample

The Malema Micro Dosing Pump is available as a standalone unit with programmable LCD display (as shown), or as a pump-head module with controller pcb and software for OEM developers.



MDP-7777 with Plastic housing



MDP-7777 with Stainless Steel housing



MDP-7777 Monitor.

Micropump Specifications

Mode of Operation	Micro-injection/suction & continuous flow
Minimum Flow Rate	30 µl/hr
Maximum Flow Rate	300 ml/hr
Volume per 360° rotation	50 µl
Minimum delivered volume*	1.6 nL (1.6 x10 ⁻⁹ L)
Reverse time of flow	< 1ms
Maximum Pressure	48 kPa (7.0 psi)
Tubing Type	silicone
Tubing Dimensions	3.0 (O.D.) X 1.5 mm (I.D.) X 75 (L)
Power	0.5 to 4.5 W 12V DC
Pump Dimensions	66.2 X 52.0 X 55.2 (mm)
Weight	<100g

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