

micrux

TECHNOLOGIES



Pumping Systems
-.- SP series -.-

Peristaltic Pumps



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Flow Rates Peristaltic Pumps

» Lab2015-MCX (Intelligent Type)

Intelligent type flow rate multi-channel (up to 8) peristaltic pump, with 4.3" LCD touch screen display. **Speed range** is 0.1 - 100 rpm and **flow rate range** is 0.000166 - 32 mL/min. Support RS232 and RS485 interface, standard MODBUS communication protocol.



» **Dynamic display transferring status.** Flow rate data, setting parameters and system configuration display in the same screen.

» **3 kinds of working modes:** fixed volume metering, fixed time and volume, timer start and stop, meet different transferring and dispensing request.

» **Intelligent calibration and online micro adjusting functions,** can be in the case of not stop, adjust the flow, eliminate the error.

» **Streamlined body design,** with ABS Engineering Plastic Shell and add UV Spray Coating.

» LabV1-MCX

Intelligent type flow rate multi-channel (up to 12) peristaltic pump with **speed range** of 0.1 - 150 rpm and **flow rate range** of 0.000166 - 49 mL/min. Support RS232 and RS485 interface, standard MODBUS communication protocol. Achieve external control under different industrial conditions. It is the ideal for laboratory and industrial production.



» Industrial grade 4.3" true color **LCD display** with touch screen control.

» **Dynamic display transferring status.** Flow rate data, setting parameters and system configuration display in the same screen.

» **3 kinds of working modes:** fixed volume metering, fixed time and volume, timer start and stop, meet different transferring and dispensing request.

» **Intelligent calibration function** and online micro adjusting function.

Peristaltic Pumps



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Basic Peristaltic Pumps

» LabM1-MCX

The second generation of basic type **multi-channel (up to 12)** peristaltic pump, with **speed range** of 0.5 - 150 rpm and **flow rate range** is 0.000829 – 49 mL/min. It is suitable for University laboratories, ion chromatography and titrator, industrial production.



- » **3 digital LED display motor speed.** Mechanical keypad control, multiple external control for selection. Support RS232 and RS485 communication mode.
- » **Timing function**, the time range of 0.5 s – 999 s can be used as a simple dispensing.
- » **Full speed button:** with full filling and emptying function.
- » **Streamlined body design**, with ABS Engineering Plastic Shell and add UV Spray Coating.

» Standard Peristaltic Pumps

» LabN1-MCX

Standard multi-channel (up to 12) peristaltic pump with **speed range** of 0.1 - 150 rpm and **flow rate range** of 0.000166 – 49 mL/min. Support RS232/RS485 communication, standard MODBUS protocol (RTU mode) meeting different industrial sites equipment request.



- » **Friendly interface.** 3.2" big screen LCD display working parameters in real time.
- » **Super silent drive setting**, precise control, low vibration and low noise.
- » **Timing function**, the time range of 0.1 s – 9999 hours can be used for simple dispensing function.
- » **Streamlined body design**, with ABS Engineering Plastic Shell and add UV Spray Coating.
- » **Power down memory function**, store parameters in time, safe and reliable.

Peristaltic Pumps



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Multi-channel Peristaltic Pumps Specifications

	Lab2015-MCX	LabV1-MCX	LabN1-MCX	LabM1-MCX
» Channels (MC Series*):	1-8	1-12		
» Flow rate range:	0.000166 – 32 mL/min	0.000166 – 49 mL/min		0.000829 – 49 mL/min
» Speed range:	0.1-100 rpm	0.1-150 rpm		0.5-150 rpm
» Speed resolution:	0.01 rpm			
» Flow rate resolution:	0.01 µL			
» Flow rate accuracy:	<± 0,5 %			
» Back suction angle:	0-360°			
» Outlet pressure:	0.1 – 0.27 MPa (depending on wall thickness tubing)			
» Motor type:	Stepper motor			
» Display:	4.3" true color LCD screen	3.2" color LCD screen display		3 digital LED
» Control method:	Touch screen / Mechanical keypad	Mechanical keypad + Rotatory encoded switch		Mechanical keypad
» Keypad lifetime:	300.000 times			
» External speed control signal:	0-5 V, 0-10 V, 4-20 mA for option			
» Start/stop, direction signal:	Passive switch signal, such as foot pedal switch. Active switch signal: 5V, 12V and 24V for option			
» Communication interface:	RS232/RS485 support MODBUS protocol (RTU mode)			
» Output interface:	Output motor working status (Open-collector output)			
» Power supply:	220V±10% 50Hz/60Hz (standard), 110V±10% 50Hz/60Hz (optional)			
» Dimensions (L x W x H):	261x157x237 mm			
» Drive weight:	4,4 Kg			
» Power consumption:	< 50W			
» Operating temperature:	0 – 40°C			
» Relative humidity:	< 80%			
» IP rate:	IP31			

Other options (with different channels, precision, flow rate...) are available on demand depending on the specific requirements.

Note: Specifications subject to change without prior notice



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Multi-channel Pump Head – MC Series



MC series new generation **multichannel pump head** with unique multi-functional cam structure not only be used for fine adjusting pressing pipe gap, but also for opening the cartridge from the top.

It is designed with **304/316 stainless steel 10-rollers** assembly for high precision small flow rates and multichannel liquid transfer.

*Reference	Pump head		Tubing	Max. pressure	Flow rate
	# Rollers (material)	# Channels			
» MC1	10 (stainless steel)	1	ID < 3.17 mm Wall thickness 0.8-1 mm	0.1 MPa	0.000166 – 49 mL/min
» MC2		2			
» MC3		3			
» MC4		4			
» MC5		5			
» MC6		6			
» MC8		8			
» MC10		10			
» MC12		12			

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Peristaltic pumps and pump heads provided by MicruX are commercialized by Baoding Shenchen Precision Pump Co., Ltd.
www.good-pump.com

Syringe Pumps



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Single & Dual-channel Syringe Pumps

Syringe pumps offer a suitable solution for transferring micro flow with high precision (non-medical).

» SP Intelligent Syringe Pump (Touch Screen)

» ISPLab01 / ISPLab02



ISPLab01/02 single- & dual-channel syringe pumps with infusion/withdrawal mode, stainless steel body, and *touch screen* chromatic LCD are easy to operate. They can install and fix different types of injectors or syringes in the same time, and they are suitable for transferring micro flow rates.

» SP Single-channel Syringe Pump

» SPLab01



SPLab01 is a single-channel syringe pump with infusion / withdrawal mode, stainless steel housing. Large colorful LCD screen display, friendly operation interface. Can load different size syringes and injectors. Suitable for micro flow rate, high precision liquid transferring.

» SP Dual-channel Syringe Pump

» SPLab02



SPLab02 is a dual-channel syringe pump with infusion / withdrawal mode, stainless steel housing and large colorful LCD screen display with friendly operation interface. It can load different size syringes and injectors and it is suitable for micro flow rate, high precision liquid transferring.

Syringe Pumps



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Multi-channel Syringe Pumps

Multi-channel Syringe pumps offer a suitable solution for transferring micro flow with high precision (non-medical).

SPLab04



SPLab06 / SPLab08 / SPLab10 / SPLab12



- Multi-channel syringe pumps with infusion / withdrawal mode, stainless steel housing.
- SPLab04 holds 4 syringes up to 140 mL . SPLab06/08/10/12 holds 6, 8, 10 or 12 syringes up to 10 mL.
- Colorful LCD display: Friendly interface, large-screen LCD display every technical parameter in real time.
- Input injector inner diameter function: Select the injector from the list or input the injector inner diameter directly.
- Two measurement modes: Infusion volume / Infusion rate or Infusion volume / Infusion time.
- Six different working modes: Infusion, withdrawal, infusion / withdrawal, withdrawal / infusion, continuous and additional mode (infusion / withdrawal, then exclude bubble). The parameters of each working mode saving separately.
- Protection function: The pump will stall and give an alarm when drive structure of the pump is blocked.

Syringe Pumps



Different **pumping systems** are available for the use of **microfluidic** and **electrochemical solutions** offered by **MicruX** or any other supplier.

» Single & Multi-channel Syringe Pumps

» Syringe pump specifications

	SPLab01	SPLab02	SPLab04	SPLab06	SPLab08	SPLab10	SPLab12
» Working Mode:	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous, additional mode (infusion / withdrawal, then exclude bubble)						
» Channels:	1	2	4	6	8	10	12
» Syringe size:	10 μ L – 140 mL			10 μ L – 10 mL			
» Flow rate:	0,001 μ L/min – 127 mL/min			0,001 μ L/min – 22 mL/min			
» Advance per microstep:	0.078 μ m						
» Max. linear rate:	132 mm/min						
» Min. linear rate:	5 μ m/min						
» Max. step rate:	0.937 s/microstep						
» Min. step rate:	0.035 ms/microstep						
» Max. linear force:	16 KgF						
» Accuracy:	$\leq \pm 0,5 \%$						
» Operating mode:	Rotatory encoded switch and imported membrane keypad						
» Display mode:	320 x 240 TFT-LCD						
» Power-off memory:	Display the previous data parameter after power supply again						
» Power supply:	AC 220V \pm 10% (standard), AC 110V \pm 10% (optional)						
» Operating temperature:	0 – 40°C						
» Relative humidity:	< 80%						
» Dimensions (D x W x H):	282x209x 161 mm	282x236x 158 mm	278x221x 175 mm	280x288x175 mm			
» Weight:	< 4 Kg						

Other options (with different channels, precision, flow rate...) are available on demand depending on the specific requirements.

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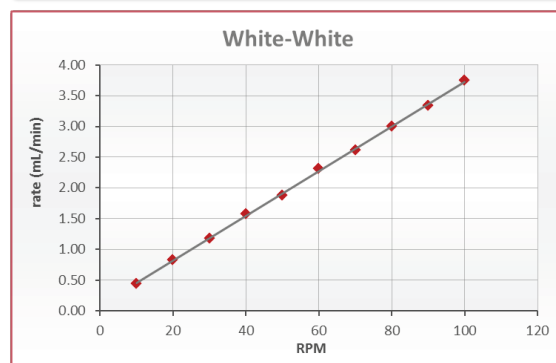
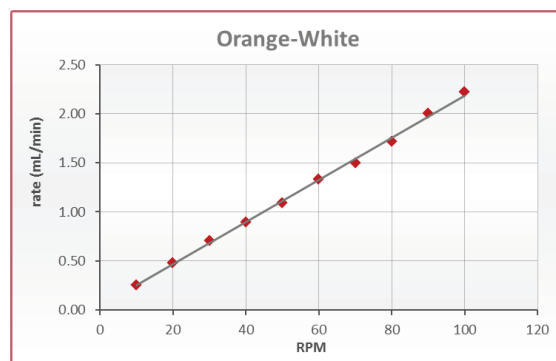


Different tubing and syringes are compatible with the pumping systems (peristaltic or syringe pumps).

» Peristaltic Pump Tubing

3 bridge PVC pump tubing offers an inexpensive all-round tubing for general laboratory use, compatible with the peristaltic pump (MC pump head series).

Color Code	Inner Diameter (mm)	Outer Diameter (mm)
» orange/black	0.127	2.007
» orange/red	0.191	2.032
» orange/blue	0.254	2.083
» orange/green	0.381	2.209
» orange/yellow	0.508	2.337
» orange/white	0.635	2.464
» black/black	0.762	2.438
» orange/orange	0.889	2.565
» white/white	1.016	2.692
» red/red	1.143	2.819
» grey/grey	1.295	2.972
» yellow/yellow	1.422	3.099
» yellow/blue	1.524	3.200
» blue/blue	1.651	3.327
» blue/green	1.750	3.430
» green/green	1.854	3.531
» purple/purple	2.057	3.734
» purple/black	2.286	3.962
» purple/orange	2.540	4.216
» purple/white	2.794	4.470
» black/white	3.175	4.851



Flow rate will depend on tubing selection

» Syringes

Syringe	Syringe ID (mm)	SPLab01/02	SPLab04/06/08/10/12
		Flow rate (µL/min – mL/min)	
50 µL	1.03	0.004 – 0.110	0.004 – 0.110
1 mL	4.70	0.087 – 2.290	0.087 – 2.290
2.5 mL	9.70	0.208 – 5.492	0.208 – 5.492
5 mL	12.48	0.417 – 10.993	0.417 – 10.993
10 mL	15.89	0.834 – 21.997	0.834 – 21.997
20 mL	20.00	1.571 – 41.469	--
30 mL	22.50	1.988 – 52.484	--
50 mL	28.90	3.280 – 86.588	--
60 mL	32.57	4.166 – 108.310	--

The selection of the syringe size will affect to the range of the flow rate.



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