

## **PRODUCT CATALOG**

#### IPS-SERIES SYRINGE PUMP SYSTEMS

2024



## About INOVENSO

Inovenso Co. Ltd. Is a supplier of laboratory equipment since 2010, our aim is to become a bridge company between academia and industry.

Inovenso has gained an exponentially larger market share in the international market of many lab equipment. In 2017 Inovenso opened its branch **Inovenso Inc.** in Boston, MA, as a second operation sales/demo office and laboratory to provide products and services to North American clients, and in 2019 Inovenso opened its branch Inovenso Korea in Incheon, **South Korea.** 

Our team is proud to have made significant contributions to hundreds of scientific projects in collaboration with prestigious organizations. These projects encompass a wide range of applications, such as biomedical research, tissue engineering, pharmaceuticals, energy, filtration, materials science, textiles, agriculture, cosmetics, and other areas of study.

For more info visit: www.microsyringepump.com

## WHAT MAKES US SPECIAL?

#### QUALITY

Our products are developed by a qualified, skilled and experienced staff of engineers and R&D specialists, and the quality of our syringe infusion pump systems are acknowledged and frequently used by our dear customers.

#### PRICING

We know that quality is not the only key requirement to customers' satisfaction, which is why the IPS syringe pumps by Inovenso are sold with affordable prices for easy access to even economically humble budgets.

#### DEDICATION

The IPS team from Inovenso is committed to providing strong service quality to its customers and endeavor every day to offer top-quality, reliable and innovative solutions. Our dedication to listen and our speed of response enable us to build strong and close relationships with our customers.

# Application Areas

The greatest benefit of laboratory syringe pumps (also known as syringe drivers), is that they can be used in nearly every application that involves infusion of specific fluid amounts at a consistent rate.

Particularly in the microscale and the nanoscale. These intricate devices are prominently utilized in many chemical and biomedical research areas.





Electrospinning / Electrospraying Electrospinning and Electrospraying are examples where syringe pumps are used to infuse the chemical solution into a high voltage setup. In most electrospinning laboratory set-ups, the syringe pump is installed to feed the sample solution through an insulating tube. The polymer solution in the tube is extruded towards the collector as it exudes out of the orifice of a charged needle using a high voltage power supply (DC).



**General Chemistry** General Chemistry experiments require dispensing chemical solutions in strict amounts. Laboratories utilize efficient syringe pumps for various experiments. In standard experimental trials, a parameter like flow-rate bears importance. Which is why chemists use varying ranges of solution feeding rate.



Chromatography Chromatography is a common laboratory practice for separating a mixture of liquids into individual components. Liquid chromatography (LC) requires a robust pump system for the infusion of solutions.



Mass Spectrometry Mass Spectrometry is used in analytical chemistry for determining the composition of an unknown sample. Materials of interest are ionized and broken down to fragments.



**Micro-dialysis** The laboratory syringe pump also facilitates the administration of fluids/blood products to very small animals as the traditional means can risk the overdose of fluids to smaller animals.

Others..

Unique **User Interface** 



Saving and Recalling Subsequently Up to 5 Recipes

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The recipe recall function enables users to save the parameters and recall them instantly.

#### **USER-FRIENDLY INTERFACE**

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A user-friendly interface smartly designed to make the user's operations easier.

#### **5 Steps** Operation Mode & Repeating recipes up to **50 Cycles**

1	0.00		CYCLE	0.00	
	V(ml)	ml/hr	]	V(ml)	ml/hr
1. 📗	0.00	0.00	1.=>	0.00	0.00
2. 🔿	0.00	0.00	2.	0.00	0.00
3. 📂	0.00	0.00	3.	0.00	0.00
4. 11	0.00	0.00	4.	0.00	0.00
5. 🖚	0.00	0.00	5.	0.00	0.00

The system operates in five distinct stages or steps. It is capable of repeating a recipe up to 50 times to achieve consistent results in a specific process.

#### Choosing the Right Syringe Type



To ensure precise liquid delivery, it's important to choose the right syringe based on factors such as intended use, volume, and measurement accuracy.

## IPS 12 SERIES

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CAPACITY	1
ТҮРЕ	Glass, plastic, steel
MIN SIZE	Hamilton 0.5 µl (ID:0.103mm)
MAX SIZE	Monoject 140 ml (ID:38mm)
FLOW RATE	
MIN	17,89 pl/min (Hamilton 0.5 µl)
МАХ	121,51 ml/min (140 ml Monoject Syringe)
MOTOR TYPE	Stepper Motor
MOTOR DRIVE CONTROLLER	Microcontroller with Microstep Drive
STEP RESOLUTION (TRAVEL/MICROSTEP)	357 nm/µstep
STEP RATE	
MIN	10 sec/µstep
МАХ	200 µsec/µstep
LINEAR SPEED RATE (PUSHER TRAVEL RATE)	
MIN	2,14 µm/min
МАХ	107,14 µm/min
LINEAR FORCE	20 kg
CONNECTORS	Wi-fi(optional)
RECIPE SAVE-RECALL	No
POWER SUPPLY	12 VDC 1A (110-240 VAC adapter included)
DIMENSIONS	W:200 L:170 H:137 mm
WEIGHT	2.1 kg
ENVIRONMENTAL SPECIFICATIONS	

- 4.3" Resistive Touch TFT LCD screen
- Microcontroller software
- User-friendly interface
- High precise pumping
- Adjustable flow rate even during process

## **IPS**<sup>12</sup>

infusion mode

OPERATING TEMPERATURE	Between -10 and 50 (°C )
STORAGE TEMPERATURE	Between -30 and 85 (°C )
OPERATING HUMIDITY	RH 10% - RH 90% (not condensed)
STORAGE HUMIDITY	RH 10% - RH 90% (not condensed)



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RECIPE SAVE-RECALL	No
POWER SUPPLY	12 VDC 1A (110-240 VAC adapter included)
DIMENSIONS	W:200 L:170 H:137 mm
WEIGHT	2.2 kg

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infusion / withdrawal mode





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**IPS**<sup>12</sup>**S** 

infusion mode

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Saving and Recalling Subsequently Up to 5 Recipes

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LINEAR FORCE	20 kg
CONNECTORS	Wi-fi(optional)
RECIPE SAVE-RECALL	Yes
POWER SUPPLY	12 VDC 1A (110-240 VAC adapter included)
DIMENSIONS	W:211 L:170 H:137 mm
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Saving and Recalling Subsequently Up to 5 Recipes

## IPS 13 SERIES

Programmable Double Channel Pumps

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ТҮРЕ	Glass, plastic, steel
MIN SIZE	Hamilton 0.5 µl (ID:0.103mm)
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FLOW RATE	
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STEP RESOLUTION (TRAVEL/MICROSTEP)	357 nm/µstep
STEP RATE	
MIN	10 sec/µstep
МАХ	200 µsec/µstep

#### LINEAR SPEED RATE (PUSHER TRAVEL RATE)

MIN	2,14 µm/min
МАХ	107,14 µm/min
LINEAR FORCE	20 kg (each syringe: 15 kg)
CONNECTORS	Wi-fi(optional)
RECIPE SAVE-RECALL	No
POWER SUPPLY	12 VDC 1A (110-240 VAC adapter included)
DIMENSIONS	W:200 L:250 H:143 mm
WEIGHT	2.9 kg

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE	Between -10 and 50 (°C )
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OPERATING HUMIDITY	RH 10% - RH 90% (not condensed)
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#### • Double Channel

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IPS 13

infusion mode



STORAGE HUMIDITY

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MOTOR TYPE	Stepper Motor
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STEP RESOLUTION (TRAVEL/MICROSTEP)	357 nm/µstep
STEP RATE	
MIN	10 sec/µstep

10 sec/µstep MAX 200 µsec/µstep LINEAR SPEED RATE (PUSHER TRAVEL RATE) MIN 2,14 µm/min MAX 107,14 µm/min LINEAR FOR CONNECTO

Double Channel

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LINEAR FORCE	20 kg (each syringe: 15 kg)
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RECIPE SAVE-RECALL	No
POWER SUPPLY	12 VDC 1A (110-240 VAC adapter included
DIMENSIONS	W:211 L:250 H:143 mm
WEIGHT	3.2 kg
ENVIRONMENTAL SPECIFICATIONS	
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Saving and Recalling Subsequently Up to 5 Recipes

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STEP RATE	

#### 10 sec/µstep MIN 200 µsec/µstep MAX LINEAR SPEED RATE (PUSHER TRAVEL RATE) 2,14 µm/min MIN MAX 107,14 µm/min 20 kg (each syringe: 15 kg) LINEAR FORCE Wi-fi(optional) CONNECTORS RECIPE SAVE-RECALL

Yes 12 VDC 1A (110-240 VAC adapter included) W:211 L:250 H:143 mm 3.2 kg

#### Double Channel

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#### ENVIRONMENTAL SPECIFICATIONS

POWER SUPPLY DIMENSIONS

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Saving and Recalling Subsequently Up to 5 Recipes

### **IPS 14 SERIES**

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Independent Double Channel Pumps

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LINEAR SPEED RATE (PUSHER TRAVEL RATE)	
MIN	2,14 µm/min
МАХ	107,14 µm/min
LINEAR FORCE	
	20 kg for each syringe
CONNECTORS	20 kg for each syringe Wi-fi(optional)
CONNECTORS RECIPE SAVE-RECALL	20 kg for each syringe Wi-fi(optional) No
CONNECTORS RECIPE SAVE-RECALL POWER SUPPLY	20 kg for each syringe Wi-fi(optional) No 12 VDC 1A (110-240 VAC adapter included)
CONNECTORS RECIPE SAVE-RECALL POWER SUPPLY DIMENSIONS	20 kg for each syringe Wi-fi(optional) No 12 VDC 1A (110-240 VAC adapter included) W:200 L:257 H:137 mm

#### • 2 Independent channels • 4.3" Resistive Touch TFT LCD screen

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STEP RESOLUTION (TRAVEL/MICROSTEP)
STEP RATE
MIN
MAX
LINEAR SPEED RATE (PUSHER TRAVEL RATE)
MIN
МАХ
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IPS



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MIN	10 sec/µstep
МАХ	200 µsec/µstep
MAX LINEAR SPEED RATE (PUSHER TRAVEL RATE)	200 μsec/μstep
MAX LINEAR SPEED RATE (PUSHER TRAVEL RATE) MIN	200 μsec/μstep 2,14 μm/min
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MAX LINEAR SPEED RATE (PUSHER TRAVEL RATE) MIN MAX LINEAR FORCE	200 μsec/μstep 2,14 μm/min 107,14 μm/min 20 kg for each syringe
MAX LINEAR SPEED RATE (PUSHER TRAVEL RATE) MIN MAX LINEAR FORCE CONNECTORS	200 μsec/μstep 2,14 μm/min 107,14 μm/min 20 kg for each syringe Wi-fi(optional)
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MAX LINEAR SPEED RATE (PUSHER TRAVEL RATE) MIN MAX LINEAR FORCE CONNECTORS RECIPE SAVE-RECALL POWER SUPPLY DIMENSIONS WEIGHT	200 μsec/μstep 2,14 μm/min 107,14 μm/min 20 kg for each syringe Wi-fi(optional) No 12 VDC 1A (110-240 VAC adapter included) W:211 L:257 H:137 mm 3.6 kg

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WEIGHT	
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Saving and Recalling Subsequently Up to 5 Recipes

## **Excellent linearity**.

# Excellent (\*\*\*



## **PRODUCT CATALOG**

**IPS-SERIES SYRINGE PUMP SYSTEMS** 

**Contact us** 

#### **UNITED STATES**

#### TURKEY

#### **SOUTH KOREA**

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