



Inscinstech

■ Automated Pilot Scale Crossflow System **Unique AutoTFF Pilot10**

For process scale-up and small-scale production



Innovation for BioProcess

AutoTFF Pilot 10 is a flexible and automated crossflow filtration system. It's widely used in ultrafiltration, microfiltration, and diafiltration of biological product such as antibodies, recombinant proteins, mRNA, nucleic acids, and viral vectors. Its flexible configuration allows for manual operation and highly automated process control. Combined with a comprehensive management system, it is suitable for process scale-up and small-scale production. With flexible connections, it can be used with both hollow fibers or cassette filters.

Product Features

- High-precision low-pulse diaphragm pump, with a maximum flow rate of 10L/min, suitable for filtration areas ranging from 0.1m² to 2.5m².
- Automatic TMP control, weighing, feeding, precise control of concentration ratio and diafiltration volume.
- User friendly control software offers easily recipe setup, operation control, data recording and user management.
- High automation with pre-defined method modules, recipe and recipe sequence.
- Optional conductivity sensor, pH, UV, for comprehensive process monitoring.

Product Introduction

AutoTFF Pilot 10 system consists of buffer transfer module, recirculation vessel module, feed module, retentate module, permeate module, filter holder, control software, etc. The system can be configured according to different process requirement to realize different levels of automation.

Recirculation vessel

- The system comes with a 10L circulation vessel that complies with USP Class VI, with weighing module at the bottom. The weight is monitored in real time, and achieve automatic concentration endpoint control and continuous dialysis. The vessel can be easily emptied with conical bottom design. The bottom of the tank is equipped with an anti-vortex design to prevent the formation of whirlpools during the circulation of the liquid, thereby avoiding any impact on the activity of the product.

Feed pump

- The feed pump utilizes a Quattroflow diaphragm pump, capable of achieving a flow rate of up to 10,000ml/min. The flow rate can be automatically controlled through software, thereby managing the inlet pressure, differential pressure, and other parameters.

Buffer transfer module

- The system can be optionally equipped with one or two transfer pumps for automatic filling of the circulation vessel.

Detectors

- The system is equipped with three pressure sensors: inlet, retentate, and permeate, to achieve pressure monitoring and calculation of differential pressure and TMP. Conductivity, pH, UV detectors are optional. The permeate is equipped with a non-contact flow meter, allowing real-time monitoring of the permeate rate.

PCV

- The retentate is equipped with an automatic regulating valve, which can automatically control the retentate pressure and TMP.

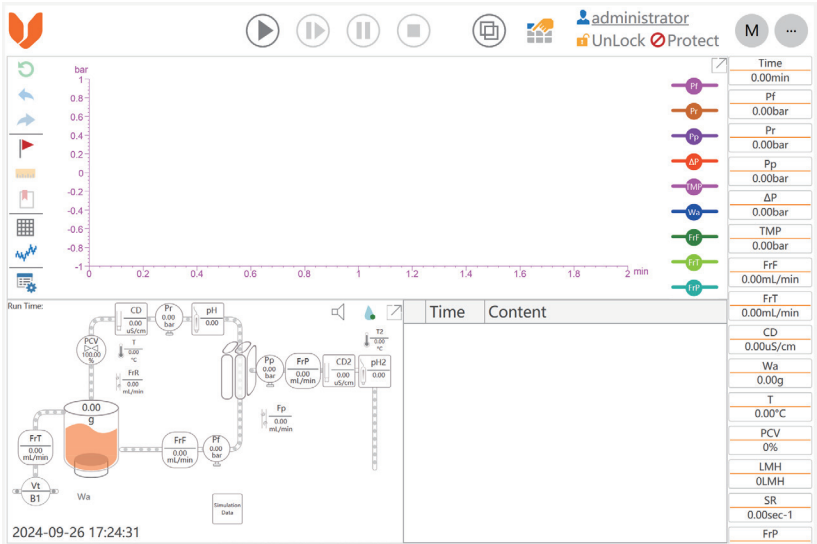
Control software

- The control software can be used for system control, method editing, data recording, user management, equipment calibration, etc.

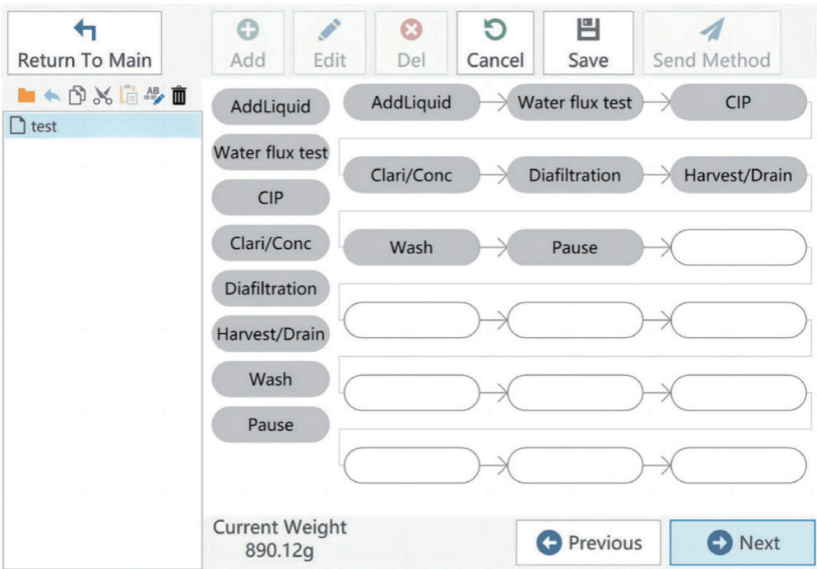
System Components Predefined Method Modules

Method Module	Discription
Filling	Add a certain amount of liquid to the circulation vessel
Water flux test	Can automatically test water flux based on defined pressure/crossflow conditions
Clarification/Concentration	Concentrate the feed liquid to the defined volume or concentration factor
Diafiltration	Constant volume diafiltration with continuouse feed entill predefined endpoint, eg. Diltiltration volume, conductivity, pH
Harvest/Drain	Harvest the liquid through the outlet valve
CIP	Used for system cleaning
Flush	Flush the system with water, buffer or other solutions

Users can combine different method modules into a method sequence (Recipe) to achieve a more automatedoperation.



AutoTFF Pilot10 control software



Method editing and recipe creation

Specification

Dimensions(LXDxH,mm)	945 x 570 x 750 (filter holder not included) 0.5m ² filter holder: 420 X 242 X 420
Electrical requirements	240VAC, 50-60Hz
Weight	86kg(include 0.1m ² filter holder); 0.1m ² filter holder: 9kg; 0.5m ² filter holder: 31kg
Power	300W
System language	Chinese, English
Ambient temperature	4-50°C

System Configurations

Filtration area	0.1m ² - 2.5m ² (the specific filtration area can be varied with different filters)
Maximum feed pressure	4bar
Minimum recirculation volume	300ml
Recirculation pump flow rate	0-10L/min
Transfer pump flow rate	0-3000ml/min
Recirculation vessel volume	10L
Pressure sensor	Detection range: 0-5Bar
Inline flow meter	non-contact ultrasonic flow meter, accuracy $\pm 2\%$, maximum flow rate 3000 ml/min
Conductivity sensor(Optional)	Detection range: 0-300ms/cm Temperature detection range: 0-140°C
pH(Optional)	Detection range: 1-14
Retentate and filtration weighing	0-20kg, accuracy: $\pm 10g$
Filter holder	Optional 0.1m ² filter holder (capable of holding 1-5 pieces of 0.1m ² cassette filters), 316L stainless steel with an inner surface $Ra \leq 0.4\mu m$. Optional 0.5m ² filter holder (capable of holding 1-5 pieces of 0.5m ² cassette filters), 316L stainless steel with an inner surface $Ra \leq 0.4\mu m$. Optional hollow fiber holder (capable of holding hollow fibers with diameters ranging from 1-5cm)
Tube&Connector	Tri Clamp (1/2")
Tube	316L Stainless Steel Silicone Silicone Braided Hose PEEK
Control system	13.3" Touchscreen IPC Windows 10 Operating System

System Configurations/Options

Components	AutoTFF Pilot10
Feed pump	√
Recirculation vessel	√
Recirculating vessel balance	√
Feed pressure sensors	√
Retentate pressure sensors	√
Permeate pressure sensor	√
Retentate automatic diaphragm valve	√
Permeate manual valve	√
Permeate flow meter	√
Computer+Control fystem	√
Transfer pump1	○
Transfer pump2	○
0.1m² filter holder	○
0.5m² filter holder	○
Retentate conductivity detector	○
Permeate conductivity detector	○
Retentate pH detector	○
Permeate pH detector	○
Qualification services	○

Note: "√" standard configuration item; "O" optional configuration



Website



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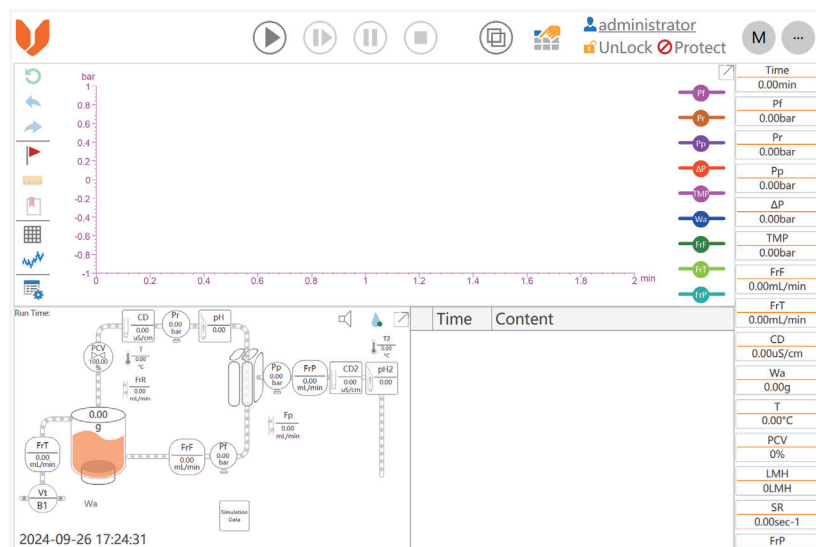
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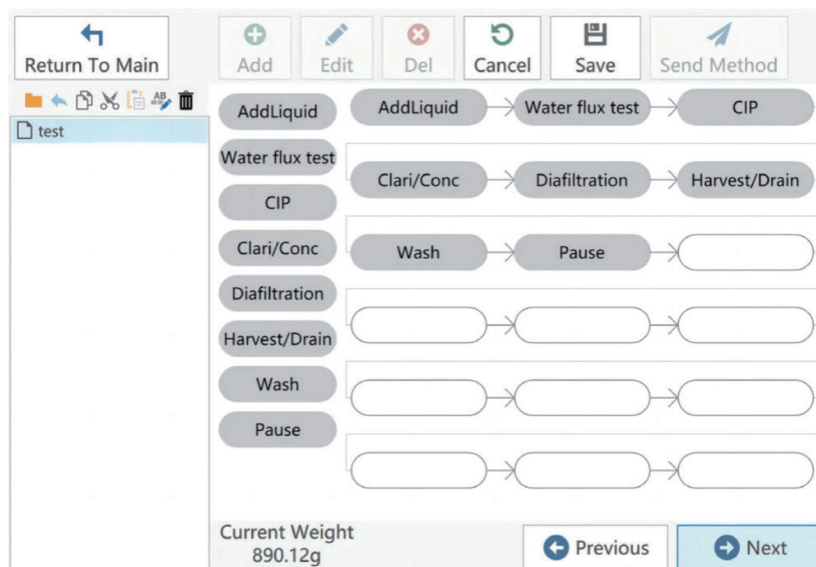
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