



Prefluid

Delivering Comprehensive, Professional,
and Reliable Fluid Management Solutions.

ONE-STOP
BIOPROCESSING PLATFORM

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Shanghai Duoning Biotechnology Co., Ltd. is a one-stop bioprocessing solutions provider serving the biopharmaceutical industry, dedicated to delivering comprehensive products and services that support the entire drug development lifecycle—from research and development and pilot-scale studies to commercial manufacturing.

Built around a robust bioprocessing framework, Duoning Biotech has established a comprehensive business portfolio encompassing reagents and consumables, instruments and equipment, as well as professional services. Through this integrated approach, the company helps its partners achieve efficient, stable, quality-controlled, and cost-effective drug development and manufacturing.

At the core of its business, Duoning Biotech leverages its group platform to offer a systematic bioprocessing product portfolio centered on single-use products, bioreactors, cell culture media, and process equipment. Its single-use bioprocessing products are widely applied across critical steps such as preparation, transfer, storage, and use, providing flexible and reliable fluid management solutions. The bioreactor portfolio supports a wide range of process scenarios and scales, addressing diverse biopharmaceutical applications. The cell culture media platform, built on in-depth research into cell metabolism and physiology, delivers high-quality, customizable serum-free media for mammalian cell culture, serving areas including antibodies, cell and gene therapies, and vaccines. In addition, complementary process equipment, reagents, and

consumables provide robust support for process scale-up and stable operation.

Meanwhile, Duoning Biotech continues to expand its bioprocessing ecosystem through its subsidiaries and partner companies. Our subsidiary ATS Engineering Inc specializes in high-pressure homogenization and related mechanical equipment, supporting applications such as liposomes, nanomedicines, and vaccines. Prefuild focuses on peristaltic pump solutions, offering reliable support for fluid transfer and process control. Bogen is dedicated to chromatography resins, enhancing efficiency and robustness in downstream purification processes. RephiLe Bioscience provides laboratory water purification systems to meet stringent requirements for research and quality control, while CMA specializes in laboratory and equipment validation services, supporting customers in compliance and quality system development.

Guided by a customer-centric philosophy, Duoning Biotech is committed to integrating high-quality products, professional technical capabilities, and industry best practices into a unified bioprocessing platform. Driven by the mission of advancing biotechnology and improving human health, the company strives to be a trusted long-term partner, continuously supporting the high-quality development of the global biopharmaceutical industry.

Basic Variable-Speed Peristaltic Pump LP101-YZ15

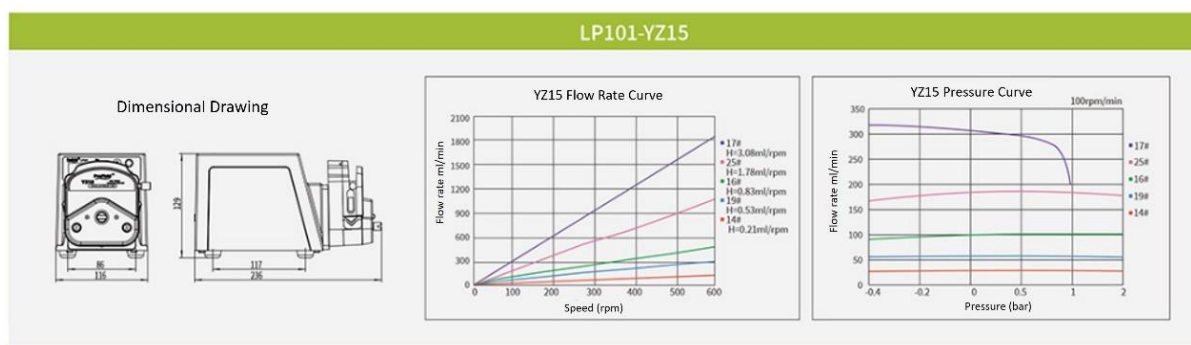
The LP101-YZ15 is a basic variable-speed peristaltic pump designed for fundamental laboratory applications. It is primarily used for continuous material transfer. The speed is adjustable within the range of 1 to 200 rpm. Featuring a compact design, low noise level, and smooth motor operation, it supports RS485 communication and analog signal control (4–20 mA, 0–10 V), offering multiple control modes.

Typical Applications:

- Laboratory liquid transfer
- Reagent dosing
- Acid/base addition in bioreactors

Compatible Tubing:

14#, 19#, 16#, 25#, 17#



Advantages:

- Compact structure with a small, aesthetically pleasing design
- Lightweight and highly portable
- Integrated stepper motor ensures stable, low-noise operation
- Die-cast aluminum housing with special surface coating for corrosion resistance and easy cleaning
- Supports RS485 communication and analog signal control (4–20 mA, 0–10 V) for versatile control options

Specification:

Item	Description
Speed Range	1~200 rpm
Speed Resolution	0.1 rpm
Motor Type	Integrated stepper motor
Noise Level	≤65 dB (measured 30 cm in front of the device)
Power Supply	24 VDC
Power Consumption	≤50 W
Drive Weight	3.4 KG
Display Mode	4-digit LED display showing speed, parameters, and other information; three LED indicators for forward/reverse direction and start/stop status
Operation Mode	Four tactile buttons for adjusting pump parameters and controlling start/stop functions
External Control Mode	Start/stop and direction controlled via dry contact signals; Speed controlled via analog signals (4–20 mA / 0–10 V); Start/stop, direction, and speed controlled via RS485 or RS232 communication protocols
Protection Rating	IP54

Basic Variable Speed Peristaltic Pump LP121-YZ15

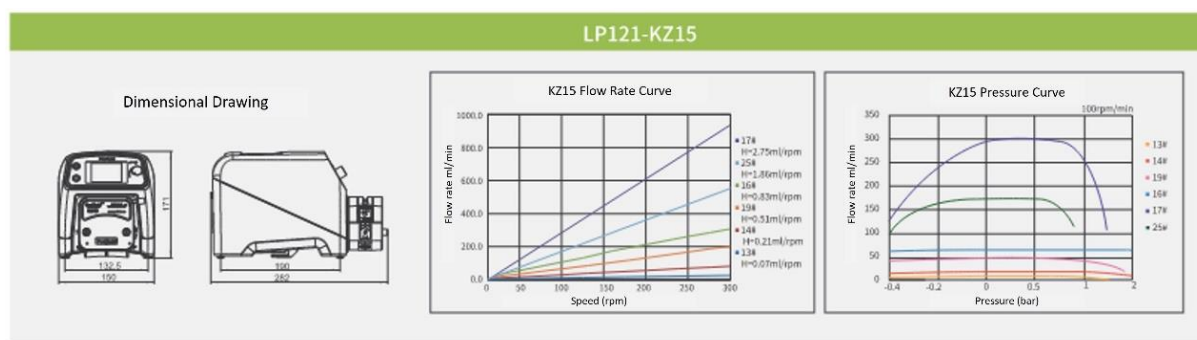
The LP121-YZ15 is a basic variable-speed peristaltic pump. Its upper housing is made of UV-resistant engineering plastic, allowing disinfection with organic solvents, ethylene oxide, and other agents. The lower housing is made of aluminum alloy, offering durability and strong resistance to electromagnetic interference. Driven by a stepper motor, it ensures smooth operation with low noise. Equipped with a cooling fan, it prevents the housing from overheating during long-term, high-load operation. In the event of a power outage, the pump automatically saves the last running parameters, eliminating the need for reset after restart. It supports multiple control modes, including speed adjustment via 0–5V, 0–10V, and 4–20mA analog signals, as well as RS485 communication. A rotary knob allows easy speed and flow rate control, while two dedicated buttons control start/stop and direction of rotation, making operation simple and intuitive. The pump also features a calibration function and tubing selection capability. When used with different pump heads and tubing sizes, the calibration function ensures more accurate flow rates.

Typical Applications

- Laboratory liquid transfer
- Reagent dosing
- Acid/base addition in bioreactors

Compatible Tubing

14#, 19#, 16#, 25#, 17#



Advantages:

- Compact, attractive design with easy operation
- Stepper motor drive ensures smooth, low-noise performance
- Compatible with multiple pump heads; features calibration and tubing selection functions; supports stacking use
- Power-off memory function automatically saves parameter settings during unexpected power loss
- Multiple control modes supported, including 0–5V / 0–10V / 4–20mA analog speed control and RS485 communication

Specification:

Item	Description
Speed Range	1~300 rpm
Speed Resolution	0.1 rpm
Motor Type	Integrated stepper motor
Noise Level	≤55 dB (measured 30 cm in front of the device)
Power Supply	100-240 VAC 50/60 HZ
Power Consumption	≤50 W
Drive Weight	2.4 KG
Display Mode	Color screen display
Operation Mode	Four tactile buttons for adjusting pump parameters and controlling start/stop functions
External Control Mode	Two tactile buttons for start/stop and direction control; multifunction rotary knob for adjusting other pump parameters
Protection Rating	IP33

Flow Metering Peristaltic Pump TP201-KZ15

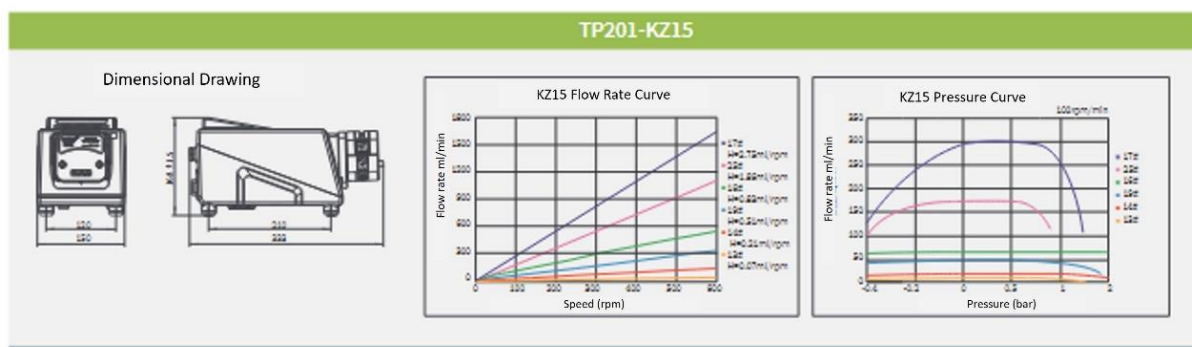
The TP201-KZ15 is a flow metering peristaltic pump featuring a streamlined metal-formed housing with a special surface coating for easy cleaning and corrosion resistance. It is driven by an integrated stepper motor for quiet operation. The pump supports multi-head serial connection, enabling higher delivery pressure. Key functions include tubing selection and flow calibration, power-off memory, quick priming and draining, and a key lock function.

Typical Applications

- Laboratory fluid dosing and metered reagent feeding in chemical reactions
- Transfer pumping in harsh environments

Compatible Tubing

13#, 14#, 19#, 16#, 25#, 17#



Advantages:

- Compact size, space-saving design, highly portable
- Large LCD display for clear and intuitive operation
- Aluminum alloy housing with special coating for corrosion resistance and easy cleaning
- Two working modes: quantitative filling and continuous working, offering flexibility for various scenarios
- Integrated stepper motor ensures smooth, low-noise operation
- High-torque motor supports multiple pump head types
- Power-off memory function can store up to 16 parameter sets for quick recall and improved efficiency

Specification:

Item	Description
Speed Range	1-600 rpm
Speed Resolution	0.1 rpm
Motor Type	Integrated stepper motor
Noise Level	≤65 dB (measured 30 cm in front of the device)
Power Supply	100-240 VAC 50/60 HZ
Power Consumption	≤50 W
Drive Weight	52 KG
Display Mode	LCD screen displays operating parameters and working status; Chinese/English menu optional
Operation Mode	Panel buttons for parameter setting and adjustment; buzzer for alerts
External Control Mode	Compatible with round 9-pin aviation connector; supports multiple control modes including RS485 interface (Modbus RTU protocol)
Protection Rating	IP54

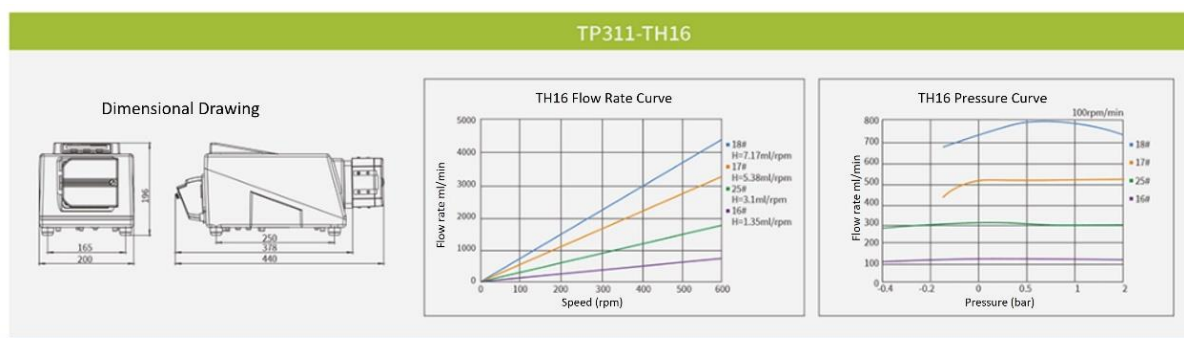
High-Flow Spring-Type Peristaltic Pump TP311-TH16

The TP311-TH16 is a high-flow, spring-loaded peristaltic pump. The driver features a streamlined, metal-formed housing with a compact and attractive design. Its specially coated surface is easy to clean and well-suited for disinfection and sterilization in pharmaceutical environments. The pump uses a maintenance-free brushless DC motor for quiet and stable operation. It is equipped with a large LCD screen that clearly displays various parameters, with optional Chinese/English menu settings. It offers two operating modes—quantitative filling and continuous working — for maximum flexibility. The TH16 pump head is a high-flow, dual-rotor spring-loaded head. Its spring-driven dual-roller assembly significantly reduces shear force, thereby extending the lifespan of the tubing and minimizing damage to sensitive fluids like cell cultures. This model is part of a flow-metering peristaltic pump series with features like tubing selection, flow calibration, power-off memory, fast priming/draining, and a key lock function. It also supports multi-head series connection for higher delivery pressure.



Typical Applications: Biologics / Vaccines

Compatible Tubing: 18#, 16#, 25#, 17#



Advantages:

- Streamlined metal housing with a sleek and modern appearance
- Special surface coating for corrosion resistance and easy cleaning
- Large LCD screen for clear display of parameters; includes power-off memory function
- Two working modes: quantitative filling and continuous working, suitable for various scenarios
- Brushless servo motor with closed-loop control ensures smooth and stable operation
- Spring-loaded pump head design significantly reduces shear force, protecting cells and prolonging tubing life

Specification:

Item	Description
Speed Range	0.1-600 rpm
Speed Resolution	0.1 rpm
Motor Type	Brushless DC motor
Noise Level	≤65 dB (measured 30 cm in front of the device)
Power Supply	100-240 VAC 50/60 HZ
Power Consumption	≤150 W
Display Mode	LCD screen displays operating parameters and working status; Chinese/English menu optional
Operation Mode	Panel buttons for parameter adjustment; buzzer for audible alerts
External Control Mode	DB15 external control interface; Dry contact signals for start/stop and direction control; Analog signals: current (4–20 mA) or voltage (0–10 V) for speed control; RS485 interface with Modbus RTU protocol for control of start/stop, direction, and speed
Protection Rating	IP54
Operating Environment	Temperature 0–40°C; Relative humidity <80%

Explosion-Proof Motor Peristaltic Pump EP411-YZ35

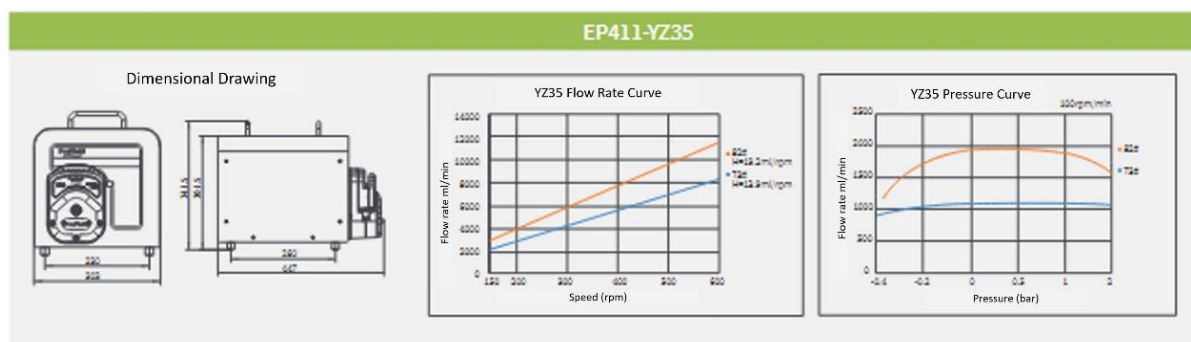
The EP411-YZ35 is an explosion-proof motor-driven peristaltic pump, equipped with a powerful explosion-proof motor. The pump housing is made of metal with a corrosion-resistant coating and meets IP55 protection and ExdIIBT4 explosion-proof standards. It features stepless speed regulation and reversible rotation. The pump supports multiple remote-control modes, including 4–20 mA, 0–5 V, and Modbus/Profinet communication, enabling seamless integration into customer automation systems.

Typical Applications

- Hazardous fluid transfer
- Filtration membrane feeding
- Electroplating chemicals

Compatible Tubing

73#, 82#



Advantages:

- Powered by an explosion-proof motor, delivering strong and reliable performance
- Metal housing with corrosion-resistant coating; IP55 protection rating and ExdIIBT4 explosion-proof certification
- Stepless speed control and reversible rotation
- Designed for use in flammable and explosive industrial environments

Specification:

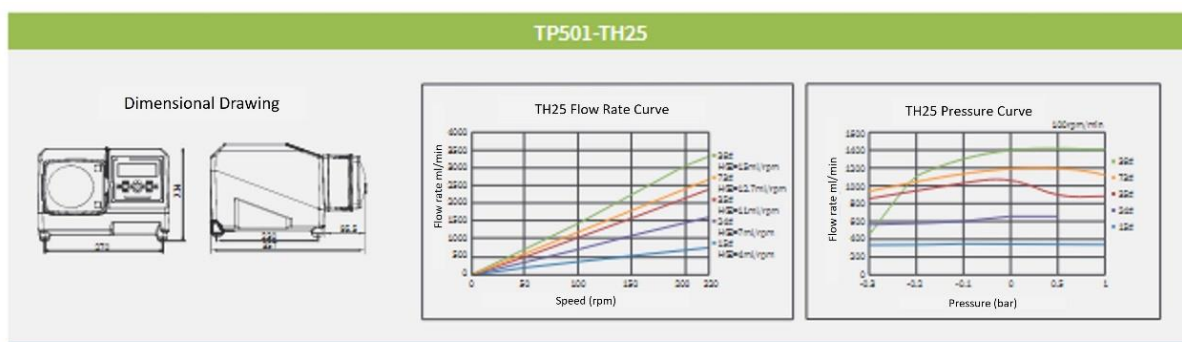
Item	Description
Operation Mode	Control panel rotary knob for setting adjustments
External Control Mode	manual control / communication control (MODBUS RTU)
Protection Rating	IP55
Operating Environment	Temperature 0–40°C; relative humidity <80%

High-Precision Filling Peristaltic Pump TP501-TH25

The TP501-TH25 is a high-precision filling-type peristaltic pump designed for large-volume filling. It uses a maintenance-free brushless DC servo motor with closed-loop control. The housing is made of metal with a special coating for easy cleaning and corrosion resistance. This pump features settings for volume, time, back-suction angle, volume calibration, liquid draining, output recording, power-off memory, no-bottle stop function, and batch filling. The menu supports both Chinese and English languages. Anti-splash and anti-foam functions can be selected by adjusting acceleration and deceleration curves, and drip prevention can be set via back-suction angle selection. The TH25 pump head is a newly developed dual-rotor spring-type design that reduces shear forces and extends tubing life. The transparent engineering plastic pump cover allows easy observation of operation. This pump head is specifically designed for tangential flow filtration (TFF), virus filtration (VF), and high-performance liquid chromatography (HPLC) applications. It can maintain linear flow within 1.5 bar pressure and achieve a maximum flow rate of 3300 ml/min.

Typical Applications: Biologics / Vaccines

Compatible Tubing: 15#, 24#, 35#, 36#, 73#



Advantages:

- Special surface coating for easy cleaning and corrosion resistance
- Maintenance-free brushless servo motor with closed-loop control for smooth operation
- Large LCD display with Chinese/English menu, featuring calibration and step-count functions
- Relay dry contact control for start; no-bottle stop function included
- Dual-rotor spring-type pump head reduces shear force, prolonging tubing lifespan
- Stable linear flow up to 1.5 bar, suitable for bioprocessing applications

Specification:

Item	Description
Speed Range	0.1-600 rpm
Speed Resolution	0.1 rpm
Motor Type	Brushless DC motor
Noise Level	≤65 dB (measured 30 cm in front of the product)
Power Supply	100~240 VAC 50/60 HZ
Power Consumption	≤150 W
Display Mode	LCD screen showing operating parameters and status; Chinese/English menu optional
Operation Mode	Panel buttons for setting and adjusting parameters; buzzer for audible alerts
External Control Mode	DB15 external control interface, Supports dry contact signals for start/stop and direction control; Analog signals (current: 4–20 mA, voltage: 0–10 V) for speed control; RS485 interface with Modbus RTU protocol for start/stop, direction, and speed control.
Protection Rating	IP54
Operating Environment	Temperature: 0–40 °C; Relative Humidity: <80%

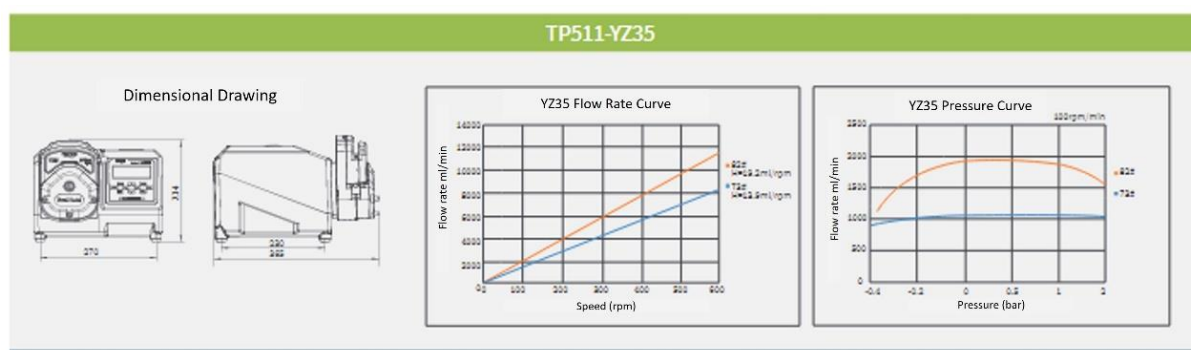
High-Precision Filling Peristaltic Pump TP511-YZ35

The TP511-YZ35 is a high-precision filling peristaltic pump, ideal for high-volume filling applications. It features a maintenance-free DC brushless servo motor with closed-loop control. The housing is made of metal with a special surface coating for easy cleaning and corrosion resistance. The pump supports volume setting, time setting, suction angle adjustment, volume calibration, priming, batch counting, power-off memory, no-bottle-no-filling, and batch filling. The user interface offers a bilingual menu (Chinese and English) and allows users to select acceleration/deceleration curves to prevent splashing and foaming, and to set suction angles to prevent dripping.

Typical Applications

- High-volume liquid transfer
- Lyophilized powder injection filling
- Diagnostic reagent dispensing

Compatible Tubing: 73#, 82#



Advantages:

- Special surface coating for easy cleaning and corrosion resistance
- Maintenance-free high-torque DC brushless servo motor with closed-loop control for smooth operation
- Large LCD display with bilingual menu, calibration software, and step-counting operation
- Relay trigger control for filling and startup, with no-bottle-no-filling functionality
- High-precision dispensing with accuracy $\leq \pm 0.5\%$
- Multiple control modes with built-in RS485 interface

Specification:

Item	Description
Speed Range	0.1-600 rpm
Speed Resolution	0.1 rpm
Motor Type	Brushless DC Servo Motor
Noise Level	≤ 70 dB (measured 30 cm in front of the product)
Power Supply	100~240 VAC 50/60 HZ
Power Consumption	≤ 300 W
Driver Weight	11 kg
Display Type	LCD screen displaying operating parameters and status; bilingual menu (Chinese/English) available
Control Method	Front panel buttons for parameter adjustment, with buzzer sound prompts
External Control Interface	Speed control via 4-20 mA current or 0-10 V voltage signals; RS485 interface with Modbus RTU communication protocol
Protection Rating	IP66
Operating Environment	Temperature 0-40 °C; Relative Humidity <80%

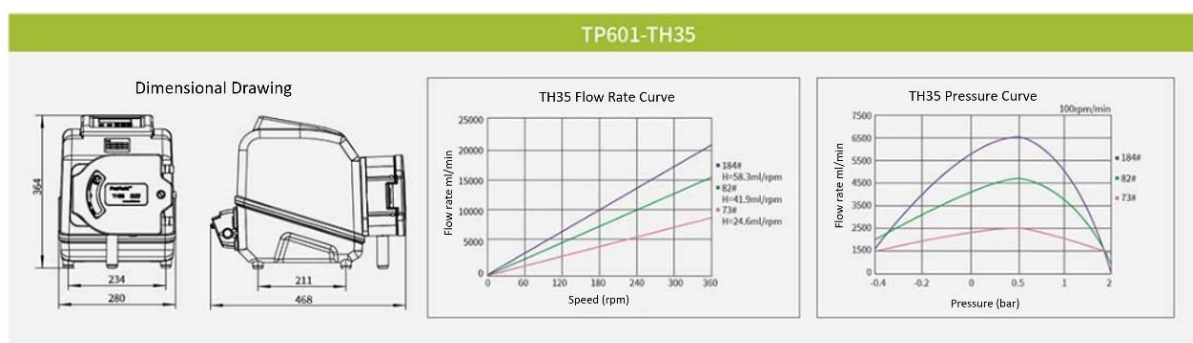
Batch Transfer Peristaltic Pump TP601-TH35

TP601-TH35 is a batch transfer type peristaltic pump. The chassis is made of aluminum alloy with a special surface coating, which is corrosion-resistant and easy to clean. It uses an AC servo motor and driver, offering high speed accuracy, precise positioning, automatic torque adjustment, and strong power. The pump is equipped with large-diameter thick-walled tubing. It features external control interfaces with multiple control modes, flow display function, capable of metering and quantitative dispensing. The TH35 pump head is a dual-roller spring peristaltic design, which reduces shear force on the tubing and extends tubing life. The pump head is made of aluminum alloy with a special surface coating suitable for pharmaceutical sterilization.

Typical Applications

- Large-volume pharmaceutical liquid transfer
- High lift feeding in chemical processes

Compatible Tubing: 73#, 82#, 184#



Advantages:

- Chassis with special surface coating for corrosion resistance and easy cleaning
- Dual-roller spring pump head design reduces shear force and extends tubing life
- Driven by AC servo motor with high precision, accurate positioning, self-adjusting torque, and strong power,
- Suitable for large-diameter thick-walled tubing
- Two modes: quantitative filling or continuous working, offering strong flexibility
- Large LCD screen with Chinese and English menus, calibration software, full step counting operation, and three-level access control management

Specification:

Item	Description
Speed range	1-360 rpm
Speed resolution	0.1 rpm
Motor type	Brushless DC servo motor
Applicable power supply	100~240 VAC 50/60 HZ
Power	≤500 W
Driver weight	18.9 KG
Display method	LED LCD display
Operation method	Button adjustment
External control method	Control start/stop, direction, and speed via RS232 and RS485; dry contact signal controls start/stop; analog signals (current 4-20 mA, voltage 0-5 V, 0-10 V)
Protection level	IP66
Working environment	Temperature: 0~40°C; Relative humidity: <80%

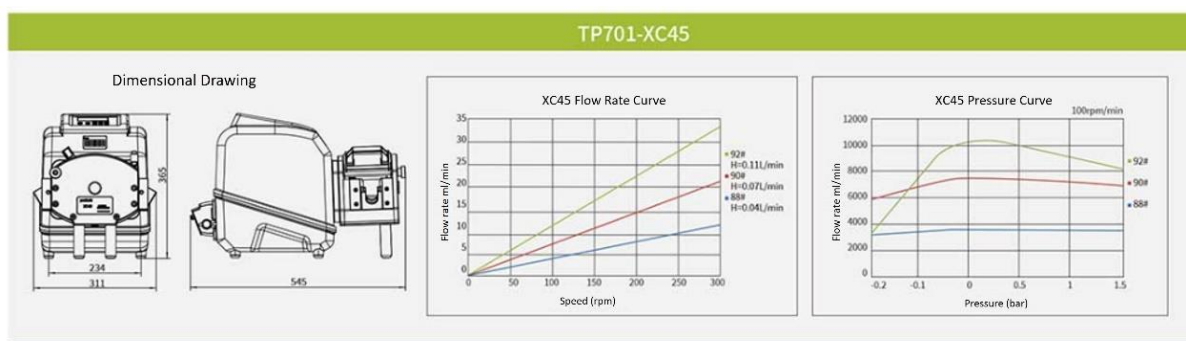
Batch Transfer Peristaltic Pump TP701-XC45

TP701-XC45 is a batch transfer type peristaltic pump, driven by an AC servo motor and driver, featuring high speed accuracy, precise positioning, automatic torque adjustment, and strong power. It is equipped with large-diameter thick-wall tubing, capable of conveying high-viscosity materials and delivering high lifts. The pump includes external control interfaces with multiple control modes, flow display functionality, and supports metering, quantitative, and timed filling. It is equipped with the XC45 planetary gear pump head, where the pump rollers self-rotate with power, reducing rolling friction between rollers and tubing, thereby extending tubing life by 2.5 times.

Typical Applications

- Large-volume pharmaceutical liquid transfer
- High lift feeding in chemical processes

Compatible Tubing: 88#, 90#, 92#



Advantages:

- Housing with special surface coating for corrosion resistance and easy cleaning
- Driven by AC servo motor with high speed accuracy, precise positioning, automatic torque adjustment, and strong power; suitable for large-diameter thick-wall tubing
- Multiple working modes, supporting quantitative filling or regular continuous operation, highly flexible and suitable for various scenarios
- Large LCD screen with Chinese and English menus, calibration software, full process step counting, and three-level authorization management

Specification:

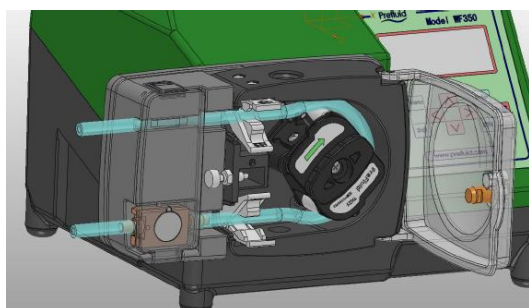
Item	Description
Speed Range	1~300 rpm
Speed Resolution	0.1 rpm
Motor Type	Brushless DC servo motor
Power Supply	100~240 VAC 50/60 HZ
Power	≤500 W
Driver Weight	24 KG
Display Method	LED LCD display
Operation Method	Button adjustment
External Control Method	RS232, RS485, analog voltage (0-10V, 0-5V), current (4-20 mA), dry contact signals control start/stop, direction, and speed
Working Environment	Temperature: 0~40°C; Relative humidity: <80%

Constant Flow & Constant Pressure Peristaltic Pump

Precision Flow Control • Stable Pressure Protection

Based on the original TP501-TH25 Constant Flow Pump, this upgraded series integrates flow rate detection and pressure sensor monitoring to create a "Three-in-One" fluid transport solution featuring precise flow control, stable pressure output, and real-time parameter monitoring.

- **Performance Stability:** Maintains both constant flow and stable pressure even under complex operating conditions, such as changing pipeline resistance or fluctuations in media viscosity.
- **Risk Mitigation:** Real-time monitoring of flow and pressure parameters prevents risks such as pipeline leakage, sample contamination, and equipment damage.
- **High-End Applications:** Perfectly suited for demanding scenarios including ultrafiltration systems, upstream bioreactors in biopharmaceuticals, and flow chemistry reactions.



Design Details

- **Non-Contact Detection Module:** The flow and pressure sensors feature an external layout. By avoiding direct contact with the fluid, the system eliminates contamination risks while simplifying cleaning and maintenance.
- **Visual Protective Cover:** The transparent cover protects core components while allowing operators to monitor tubing status in real-time and detect abnormalities instantly.

Product Advantages

- **Flow Feedback:** Real-time monitoring of fluid flow with dynamic adjustments to ensure a constant flow rate.
- **Pressure Feedback:** Real-time sensing of output pressure with automatic regulation to maintain pressure stability.
- **Contamination-Free Protection:** Since both flow and pressure detection are non-contact, the system prevents cross-contamination, meeting the stringent requirements of high-cleanliness environments like biopharmaceuticals and medical applications.
- **Stable Output:** Designed with no clogging points or dead zones to minimize fluid pressure loss. The system ensures a stable output even when facing complex variables such as changes in pipeline resistance or fluctuations in media viscosity.
- **User-Friendly Operation:** Equipped with a large LCD screen and multilingual menus (Chinese/English), making parameter settings and operating status clear at a glance.

Technical Parameters

Parameter	Specifications
Speed Range	0.1~220 rpm
Flow Rate Range	0.4~3300 ml/min
Accuracy	≤ ±2%
Compatible Tubing	15#, 24#, 35#, 36#
Power Supply	100~240VAC 50Hz/60Hz
Power Consumption	≤300 W
Protection Rating	IP66
Added Features	Non-contact flow detection, Non-contact pressure sensing detection, Dual closed-loop control system

EP430 Series Explosion-Proof Pumps

Explosion-Proof · Smart · Efficient | Suitable for High-Risk Scenarios Across Industries

EP430 Series: Explosion-Proof Pumps Designed for High-Risk Environments

The EP430 series is a category of peristaltic pumps built to explosion-proof standards. It is specifically designed for handling flammable, explosive, toxic, or hazardous media, while also providing intelligent control and durability. It is a reliable choice for safe transfer in high-risk environments.

Three Core Advantages Define the Standard for High-Risk Transfer

High-Level Explosion Protection for Maximum Safety

- Full machine explosion-proof rating: ExdIIBT4Gb / ExdIICT130°C Db, suitable for Class I/II hazardous explosive environments.
- Full machine protection: IP67 rating, offering “triple protection” against explosion, dust, and water, capable of withstanding harsh conditions.

Smart Control for Efficient Operation

- Integrated control system combining AC servo motor + intelligent control algorithms.

Materials + Structure: Dual Assurance for Safety and Durability

- Drive housing / pump head: Aluminum alloy + anti-corrosion coating (corrosion-resistant).
- Rotor / bearings: Stainless steel (high strength, wear-resistant).
- Integrated explosion-proof joints to avoid exposed wiring risks.
- High-sealing design, compatible with IP67 protection level.



- TFT color display + convenient buttons (start/stop, direction change, speed adjustment, etc.) for intuitive operation.

Durable Construction for Industrial Environments

- Pump head designed for high cleanliness and low maintenance, compatible with multiple tubing types.
- Core components reinforced with durable materials (e.g., stainless steel rotor/ bearings) to extend service life.

Fully Adapted to High-Risk Scenarios Across Industries

- Petrochemical: Transfer of flammable and explosive raw materials or solvents.
- Mining: Safe handling of toxic or hazardous media underground.
- Pharmaceutical: Precise filling of hazardous liquids containing alcohol or organic solvents.
- Other applications: Hazardous chemical storage, high-risk laboratories, and similar environments.

Product Selection Recommendation Table

Model	Image	Product Number	Compatible Pump Head	Compatible Tubing Size	Number of Rotors	Number of Channels	Reference Flow Range (ml/min)
EP430-TH35		101080071	TH35	73#, 82#, 84#	2	1	23.2~15449.5
EP430-TH25		101030057	TH25	15#, 24#, 35#, 36#	2	1	2.5~3975
EP430-YZ35		101030053	YZ35	73#, 82#	3	1	13.9~11520

Materials of Construction

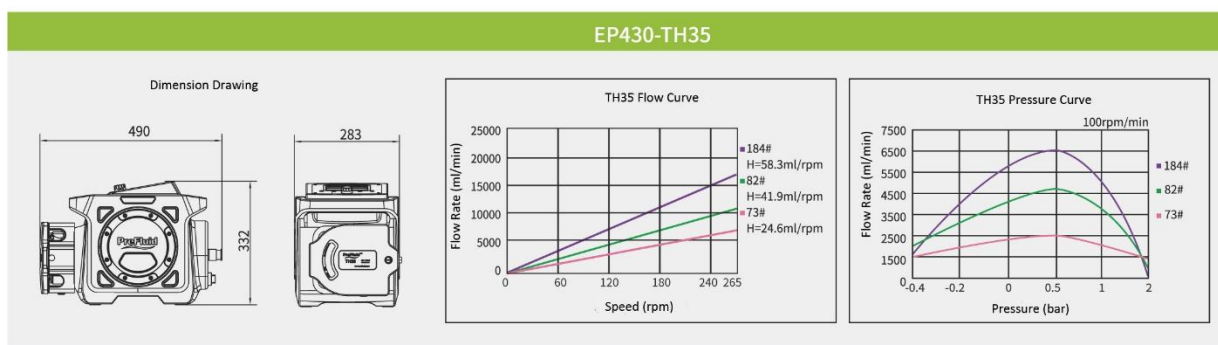
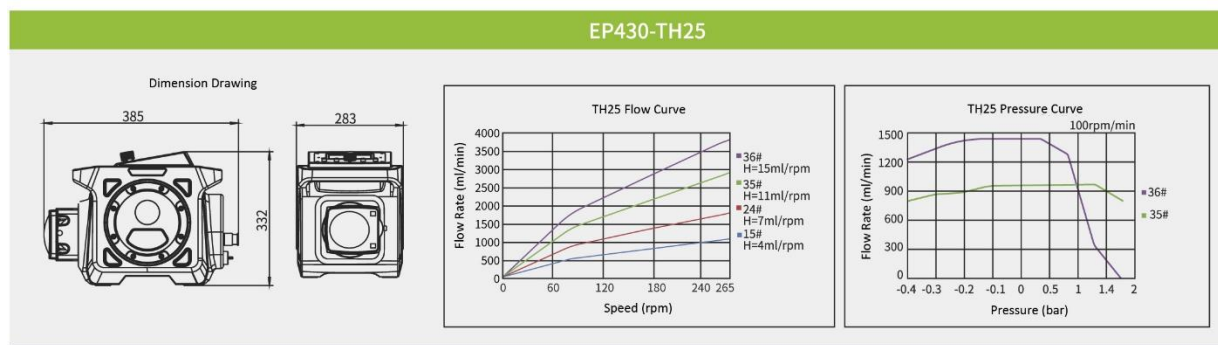
Component	EP430-TH35	EP430-TH25	EP430-YZ35
Drive Housing	Aluminum Alloy		
Drive Housing Surface	Anti-Corrosion Coating		
Pump Head Body	Aluminum Alloy	Engineering Plastic	Aluminum Alloy
Pump Head Body Surface	Anti-Corrosion Coating	Engineering Plastic	Anti-Corrosion Coating
Rotor Bracket	Aluminum Alloy	Engineering Plastic	Stainless Steel
Rotor	Stainless Steel	Molybdenum Disulfide	Stainless Steel
Bearing	Stainless Steel		

EP430 Series Explosion-Proof Pumps

Technical Specifications

Parameters	EP430-TH35	EP430-TH25	EP430-YZ35
Speed Range	1-265 rpm	1-265 rpm	1-600 rpm
Speed Resolution	0.1 rpm		
Drive Mode	Servo Motor Driven		
Power Supply	100~240VAC 50/60Hz		
Power	≤500 W		
Operating Environment	Temperature 0~40°C, Relative Humidity <80%		
Total Weight	18.9 kg		
Adjustment Method	Knob Adjustment		
Display	TFT Color Screen		
External Control Interface	RS485 control for start/stop, direction, and speed; dry contact for start/stop; analog signals (current 4-20 mA, voltage 0-5V, 0-10V)		
Communication Method	RS485 Interface, ModBus RTU Protocol		
Protection Level	IP67		

Overall Dimensions & Flow/Pressure Curve



TP810 Series Quaternary Diaphragm Pump

The uniqueness of the quaternary diaphragm pump lies in its operation mode, which mimics the human heart. It safely, reliably, and efficiently transfers biotechnological materials. With low friction, low shear, and low pulsation characteristics, it is an ideal choice for critical applications in biopharmaceutical production. The TP Fluid quaternary diaphragm pump addresses key challenges in biopharmaceutical and semiconductor industries—such as shear damage, contamination risk, and integration difficulties—offering sterile transfer, full flow adaptability, and flexible integration through a complete product matrix.

Core Advantages

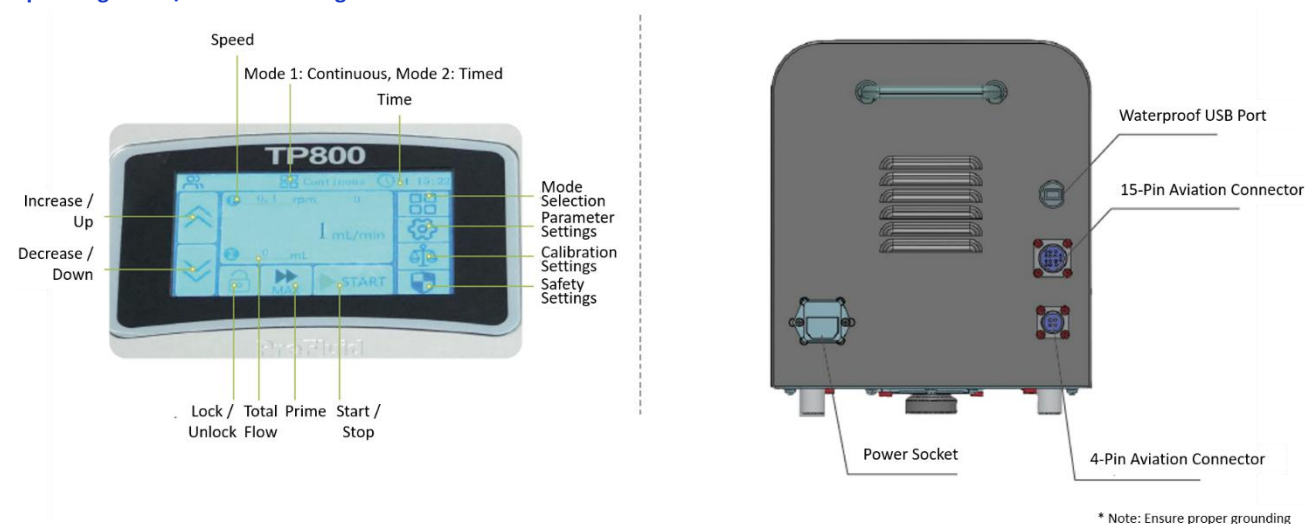
- High-pressure design: Enables stable liquid transfer at 5 bar, ensuring operational stability.
- Strong self-priming capability: Adapts to complex operating conditions.
- Dry-run support without damage: Extends equipment life and reduces maintenance costs.
- Low-shear design: Minimizes damage to sensitive fluids such as active cells.
- Adaptable to low-viscosity, low-flow applications.
- 316L stainless steel construction: Corrosion-resistant and easy to clean.
- Flexible compatibility: Suitable for both reusable and single-use applications.
- Optional alarm configuration: Automatically stops pump operation during abnormal conditions, reducing safety risks.
- RS485 Modbus communication port: Records trend data and alarm information for easy system integration and traceability analysis.



Product Selection Recommendation Table

Model	Image	Product Number	Compatible Pump Head	References Flow Rate Range (L/min)
TP811-PR1200		101060192	Reusable/Single-use pump head	0.083-20.9

Operating Panel / Rear Panel Diagram

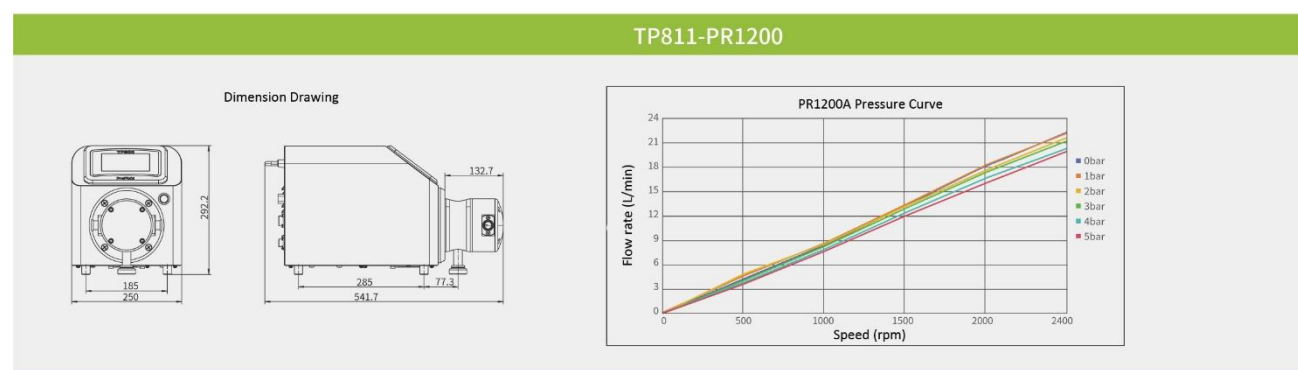


TP810 Series Quaternary Diaphragm Pump

Technical Parameters

Pump Head Type	Reusable Pump Head (PR1200A)	Single-Use Pump Head (PR1200S)
Model	PR1200A	PR1200S
Speed Range	10-2400 rpm	
Resolution	1 rpm	
Flow Range	0.083-20.8 L/min	
Flow Accuracy	±2%	
Maximum Pressure	5 bar (fluid temp <40°C); 4 bar (fluid temp >40°C)	4 bar
Maximum Temperature	Fluid: 80°C, CIP: 90°C, SIP: 130°C, Autoclave: 130°C	
Connection Size	1/4" TC or 3/4" TC	
Display	LCD shows speed and flow rate	
External Control Interface	Analog signals, current (4-20 mA), voltage (0-10 V), RS485, dry contact automatic control	
Power Consumption	≤750 W	
Power Supply	200-240V, 50Hz	
Communication Method	RS485 Interface, ModBus RTU Protocol	
Operating Temp & Humidity	0-40°C, 10%-90% RH, non-condensing	
Protection Rating	IP54	

Overall Dimension & Curve



Materials of Construction

Name / Component	Model / Specification
	TP811-PR1200
Housing Material	316L
Pump Chamber Material	316L
Diaphragm Material	TPE
Valve Material	EPDM
O-Ring Material	EPDM
Elastomer Contact Certification (Optional)	USP <88> Class VI; FDA 21 CFR 177; BSE/TSE Safe
Stainless Steel Contact Certification (Optional)	Surface Roughness: Ra ≤ 0.4 μm; Ferrite Content: <1%

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