

# ESP Flow: The Ultimate Servo-Driven 4-Piston Pump for the Biopharmaceutical Industry

ESP Flow (patent-pending) is a cutting-edge servo-driven 4-piston pump designed specifically for the biopharmaceutical industry. With its advanced features, ease of use, and robust construction, ESP Flow revolutionizes fluid handling in biopharmaceutical processes.

## Key Features and Benefits

- 1. Servo-Driven Precision:** ESP Flow's servo motor ensures precise control over a wide flow range, making it ideal for critical applications.
- 2. Fully Programmable:** Customize pumping parameters, flow rates, and timing to meet your specific process requirements.
- 3. Premade Functions:** ESP Flow comes with a set of preconfigured functions, simplifying setup and reducing time-to-operation.
- 4. IP69k Stainless Steel Servo:** Built to withstand harsh environments, the IP69k-rated stainless steel servo ensures durability and corrosion resistance.
- 5. Quattroflow Pump Head:** The Quattroflow design ensures gentle product handling, minimizing shear stress and maintaining product integrity.

## Technical Specifications

- **Piston Diaphragm Configuration:** 4 piston diaphragms for consistent and pulsation-free flow.
- **Flow Rate Range:** From low mL/min to high L/min, accommodating various biopharmaceutical processes.
- **Operating Voltage:** Compatible with standard power supplies.
- **User Interface:** Intuitive touchscreen for easy programming and monitoring.
- **Materials of Construction:**
  - **Pump Head:** Quattroflow design with FDA-compliant materials.
  - **Servo Housing:** IP69k-rated stainless steel.
  - **Seals and Gaskets:** Chemically resistant elastomers.
- **Applications:**
  - Liquid transfer
  - Dispensing
  - Filtration
  - Bioreactor feeding
  - Chromatography
  - Cell culture



**Elevate your biopharmaceutical processes  
with the future of fluid handling technology.**

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## Why Choose ESP Flow?

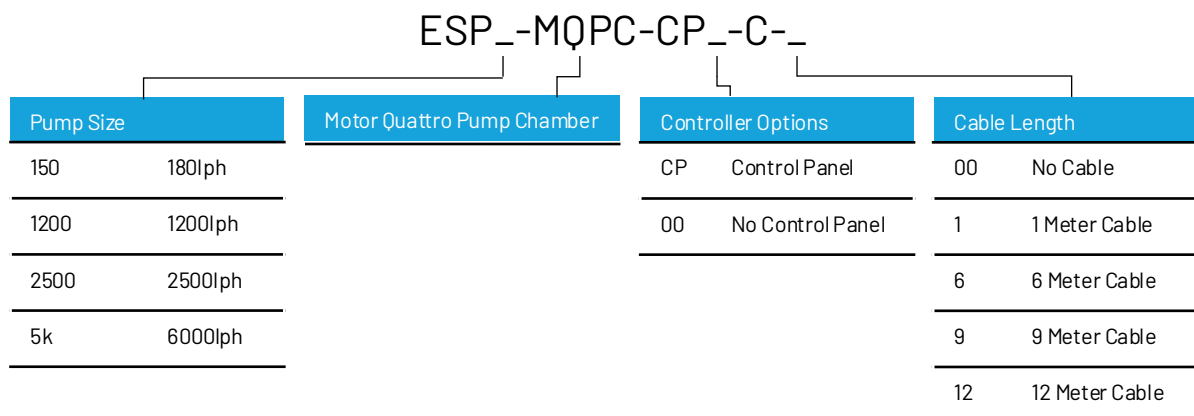
- **Reliability:** ESP Flow's robust design ensures consistent performance even in demanding biopharmaceutical environments.
- **Ease of Use:** Intuitive controls and preprogrammed functions make setup and operation a breeze.
- **Precision:** Accurate dosing and flow control for critical processes.
- **Compliance:** Designed to meet biopharmaceutical industry standards.

## Applications

1. **Drug Manufacturing:** Precise dosing of active ingredients and excipients.
2. **Bioprocessing:** Cell culture media, buffer solutions, and nutrient delivery.
3. **Quality Control:** Reliable sample preparation and analysis.
4. **Research and Development:** Versatile for lab-scale experiments, Scale-up applications and GMP operations.

## How to Order:

To order ESP Flow, create your correct model number by using the charts below. An example model number is: ESP150-MQPC-CP-C1. This is an ESP Flow with 150 pump size, control panel and 1 meter cable.



So easy to use you'll think it's reading your mind.

For more information, visit our website: [www.hollandapt.com](http://www.hollandapt.com) 3.13.25