

Fluid metering

DUPLEX PUMP METERING AND MIXING



Precision Dual-Fluid Metering and Mixing in a Compact Platform

The Duplex Pump provides a streamlined solution for metering, mixing, and dispensing two fluids from a single integrated system. Two independently adjustable CeramPump® heads driven by one motor deliver synchronized, repeatable flow, reducing system complexity while supporting precise dual-fluid control in a compact footprint.

Flexible Ratio and Low Maintenance Operation

Independent adjustment of each pump head enables ratio control from 1:1 to 1:100 for mixing, dilution, and dual-channel delivery. Chemically inert ceramic components and a valve-free fluid path minimize drift, supporting stable, long-term performance that often exceeds the lifetime of the instrument.

KEY BENEFITS

Independent Flow Adjustability

- Allows each pump head to be optimized independently, enabling flexible operation across a wide range of flow rates and process requirements.

Synchronized Dual-Fluid Delivery

- Provides coordinated metering of two fluid streams from a single drive system, simplifying system integration while maintaining precise flow control.

Precise Ratio Control

- Enables adjustable ratios from 1:1 to 1:100 for dilution, assay prep, and multi-reagent workflows.

Development-to-Production Flexibility

- Configurable for early development with a direct transition to fixed, production-ready configurations.

Reduced Maintenance and Wear

- Eliminates tubing wear and valve degradation common in peristaltic and syringe-based systems.

OEM Engineering Support

We offer support for dispense volume, flow rate, pressure, material compatibility, system integration, and configuration optimization. Contact us to discuss your project and explore a solution designed for your specific needs.



Fluid Metering's facility is certified to the ISO 9001:2015 international standard. Product components are manufactured to meet EU RoHS and REACH compliance requirements.

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METERING AND MIXING

PUMP SPECIFICATIONS

WETTED MATERIAL OPTIONS:

Ceramics: Alumina, Zirconia

Pump Housing: PVDF, ETFE, Polypropylene

Seals: PTFE, FKM, FFKM, Rulon AR, UHMW-PE

PORT OPTIONS:

1/4-28 UNF Threaded Ports,

Barb Fittings (1/8" - 1/4" Tubing ID),

1/4" Compression Nuts,

1/2" Straight Tube Adapter

DISPENSE VOLUME RANGE¹: 10-2500 μ L/rev

FLOW RATE RANGE: 0.05-2500 mL/min
(application dependent)

DIMENSIONS: Varies based on pump head selections

MOTOR/DRIVER SPECIFICATIONS

VARIABLE SPEED MOTORS

MOTOR TYPE: 23-Frame Stepper Motor

RATED SPEED: 1000 rpm
(application dependent)

VOLTAGE: 48 V max

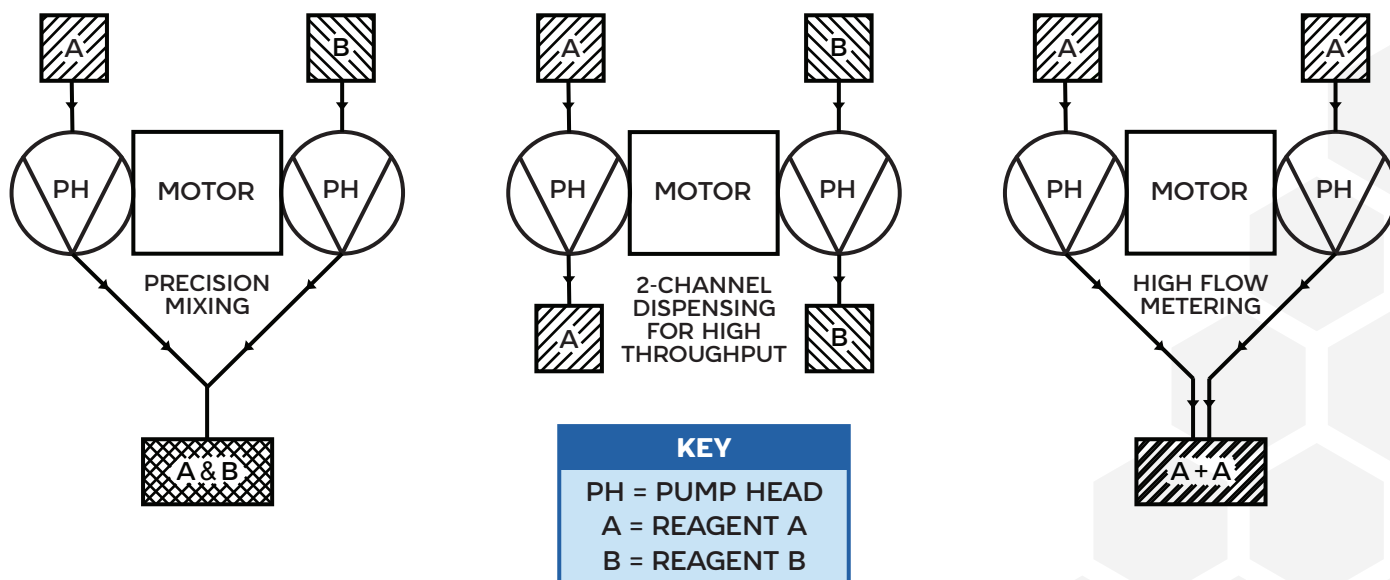
RATED CURRENT: 2.5 A

MOTOR DIRECTION: Bidirectional,
Calibrated Clockwise

STEP ANGLE: 1.8° Full Step

OPERATING TEMPERATURE RANGE: 0°C to 50°C

FLOW OPTIONS



CUSTOMIZED FLUIDIC SOLUTIONS

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Contact Us Today!

Rapid prototyping available within 10 business days*

*Prototype requests are subject to availability of parts and materials. Fluid Metering will confirm availability within 2 business days and provide an estimated shipping date.

¹ The performance of Fluid Metering pumps may vary based on specific application conditions and individual user setups. We recommend speaking with one of our engineering experts for guidance tailored to your specific needs.