



Precision Fluid Control Series



Plunger Pump
Rp-01

Product Technical Specification | July 2026

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Product Overview

The Rp-01 plunger pump uses a ceramic piston and precision trapezoidal screw drive with a 6 mL rated capacity and 19.1 mm stroke (3,820 steps) for small-volume, high-repeatability liquid delivery. Single-port, L-type dual-port, and valved dual-port head configurations are available, with corrosion-resistant wetted materials for IVD, environmental monitoring, petrochemical testing, and laboratory automation.

- 6 mL Capacity
- Ceramic Piston
- Multi-Port Heads
- 3820 Steps
- 1.57 µL Resolution

Key Features



Ceramic Piston
Wear- and corrosion-resistant for long-term accuracy.



6 mL Rated Capacity
19.1 mm stroke, 3,820 steps.



High Precision
Accuracy ≤1%, repeatability 0.3%~0.7%.



Multiple Valve Heads
Single-port / L-type dual-port / valved dual-port.



Corrosion-Resistant Materials
PC, ceramic, UPE, NBR, PEEK, EPDM/FKM options.



Standard Communication
RS232/RS485 with ASCII/custom protocols.

Technical Specifications

Parameter	Specification
Model	Rp-01
Principle	Precision positive-displacement plunger pump
Accuracy	≤1% @ 100% rated stroke
Repeatability	0.3%~0.7% @ 100% rated stroke
Service Life	3 million cycles no leakage (water; 1 rated stroke/cycle)
Rated Capacity	6 mL
Rated Stroke	19.1 mm (3,820 steps)
Piston Bore	20 mm
Stroke Runtime	2.292 s (500 rpm) ~ 1146 s (1 rpm)
Resolution	0.005 mm/step; min dispense 1.5707 µL
Linear Speed	0.017~8.33 mm/s
Actuator	Trapezoidal screw (lead 1 mm)
Valve Head	Single-port / L-type dual-port / valved dual-port
Dead Volume	1.45 mL / 1.387 mL / 1.716 mL
Wetted Material	PC, ceramic, UPE, NBR, PEEK, EPDM/FKM (solenoid valve)
Pressure Rating	Positive 0~0.5 MPa; negative 0~0.06 MPa (reference)
Connection	1/4-28UNF internal thread

Communication	RS232 / RS485
Baud Rate	RS232/RS485: 9600~115200 bps
Protocol	ASCII / Custom (with driver)
Power Supply	DC24V / 1.5A
Operating Temp.	5~55 °C
Relative Humidity	<80% non-condensing
Weight	0.462 kg (with solenoid valve and driver)
Maintenance	Periodic valve-head and piston seal cleaning; avoid particulate ingress
Application	IVD liquid delivery, environmental monitors, petrochemical testing, automated lab dilution

Typical Applications

- ▶ In-vitro diagnostic instrument liquid delivery
- ▶ Environmental monitoring analyzers
- ▶ Petrochemical testing instruments
- ▶ Automated lab dilution/dispensing
- ▶ Small-volume industrial dosing

Ordering Guide

Product Code	Description
Rp-01	Plunger pump body + valve head (single/L-type/valved dual-port)

Accessories/Consumables

Accessory	Specification	Note
Valve Head	Single/L-type dual/Valved dual-port	Flow-dependent
Ceramic Piston/Seal Kit	6 mL	Periodic replacement
Driver Module	With-driver version	Optional

Why Choose Jiuyuhub

 Application-First Matching Selection based on corrosivity, head type and flow needs.	 Southeast Asia Adapted Corrosion-resistant materials for hot/humid industrial environments.
 One-Stop Supply Plunger pump, valve heads and seal kits.	 24-Hour Response Fast spare parts and technical support.

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