

ELECTRO-OSMOTIC PUMP

EBP series

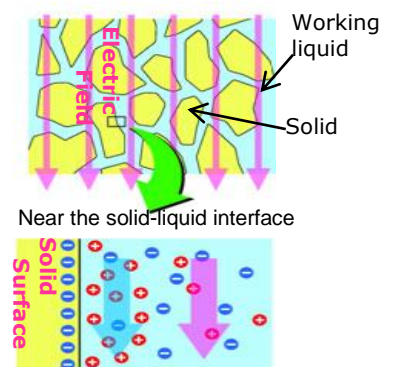


The Electro-osmotic Pump (EO pump) is an extremely small pump that uses electroosmosis (See the flow generation principle below). No pulsation nor operating noise is generated during its use as it has no mechanically moving parts. Furthermore, its features include a high output pressure, optional battery operation, and an adjustable flow proportional to the applied voltage. It can be integrated to a microfluidic chip for delivering liquids into the chip. Indirect drive types, which utilise a diaphragm to deliver various liquids, are also available.

Flow Generation Principle

1. The solid surface has a negative charge.
2. The cations in the liquid are attracted to the negatively charged solid surface.
3. The thin liquid layer close to the surface is charged positively.
4. The charged liquid layer is dragged by electric field.
5. Flow is generated → Electro-osmotic flow.

Porous Structure



Typical Specifications

Model Number	EBP-RF1R
Flow Rate	60 $\mu\text{L}/\text{min}$ at 150VDC, 10 $\mu\text{L}/\text{min}$ at 24VDC (Back pressure 0kPa, deionised water)
Max. Pump Pressure	1 MPa (150VDC, deionised water)
Directly Deliverable Liquids	Deionised water, methanol, ethanol (Other liquids can be delivered by indirect pumping)
Dimensions	$\phi 12 \times \text{H}17.6 \text{ mm}$

Note: Details including specifications may change without notification.

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