

# 2-SWITCH™

**3-PORT/2-WAY**

P/N 2SW003

The **2-SWITCH™** is a **compact** microfluidic sampling valve featuring **3 ports** and **2-way** functionality. It can **be integrated** seamlessly **into any microfluidic setup** with standard fittings. Its unique and compact design allows optimizing benchtop space.

## FEATURES

**Fluid switching & sampling:** The 2-SWITCH™ can be used for fluid switching or dispensing depending on the direction of flow. When 2 liquids are coming into the valve, select which to deliver to your device. Alternatively, one liquid can be driven into selected parts of a setup for sampling/sorting.

**Time-based automation:** The valve can be controlled using OxyGEN software for long-term and complex experiments. Create a time-based protocol to set the timing of the valve(s).

**ON/OFF switch:** The 2-SWITCH™ is a versatile device that is easily adapted into an on/off valve (2-port/2-position) by connecting a plug to one port (other than the common port).

**A compact and useful tool:** Its versatility makes it ideal for applications where fluid sorting, switching or periodic sampling are required.



## BENEFITS



**Intuitive:** Plug & Play valve & local button



**Compact:** Easily combine & parallelize



**Quick:** Actuation & Response time



**Adaptable:** Control with ou without a PC

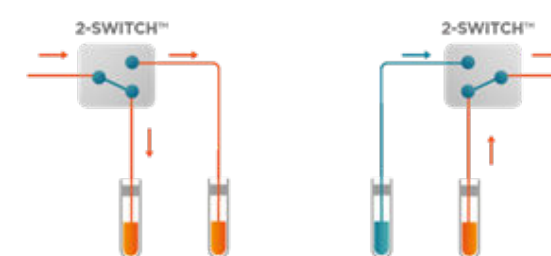
# SPECIFICATIONS

Performance	
Internal volume	59 µL
Internal diameter	1.2 mm (standard version) or 0.8 mm (5 bar version)
Dead volume	None
Response time	3 ms
Maximum Pressure	2 bar, 5 bar upon request
Wetted materials	Fluidic housing: PEEK Seal: EPDM (standard version) or FFKM (5 bar version)
Chemical biocompatibility	
Mineral oil	Not compatible with EPDM membrane
Gas compatibility	Dry, oil-free gas, air, any non-corrosive or non-explosive gas
Liquid compatibility	Aqueous solvent, oil, organic solvent, biological sample
Hardware and Electrical	
Dimensions	82*66*22.5 mm
Weight	116 g (0.25 lbs)
Fittings	Common 1/4-28 (1/16" OD) flangeless
Port communication	RJ45
Fluigent software compatibility	OxyGEN and SDK

# TECHNOLOGY

The **2-SWITCH™** can be used for fluid switching or dispensing depending on the direction of flow.

It is a 3-port / 2-way solenoid valve: two ports can **alternatively be connected** to a third one (the common port), thanks to the movement of a diaphragm actuated by a solenoid. The **flow is bidirectional** in this sampling microvalve, meaning that the device can be used as a **selector and a distributor**.

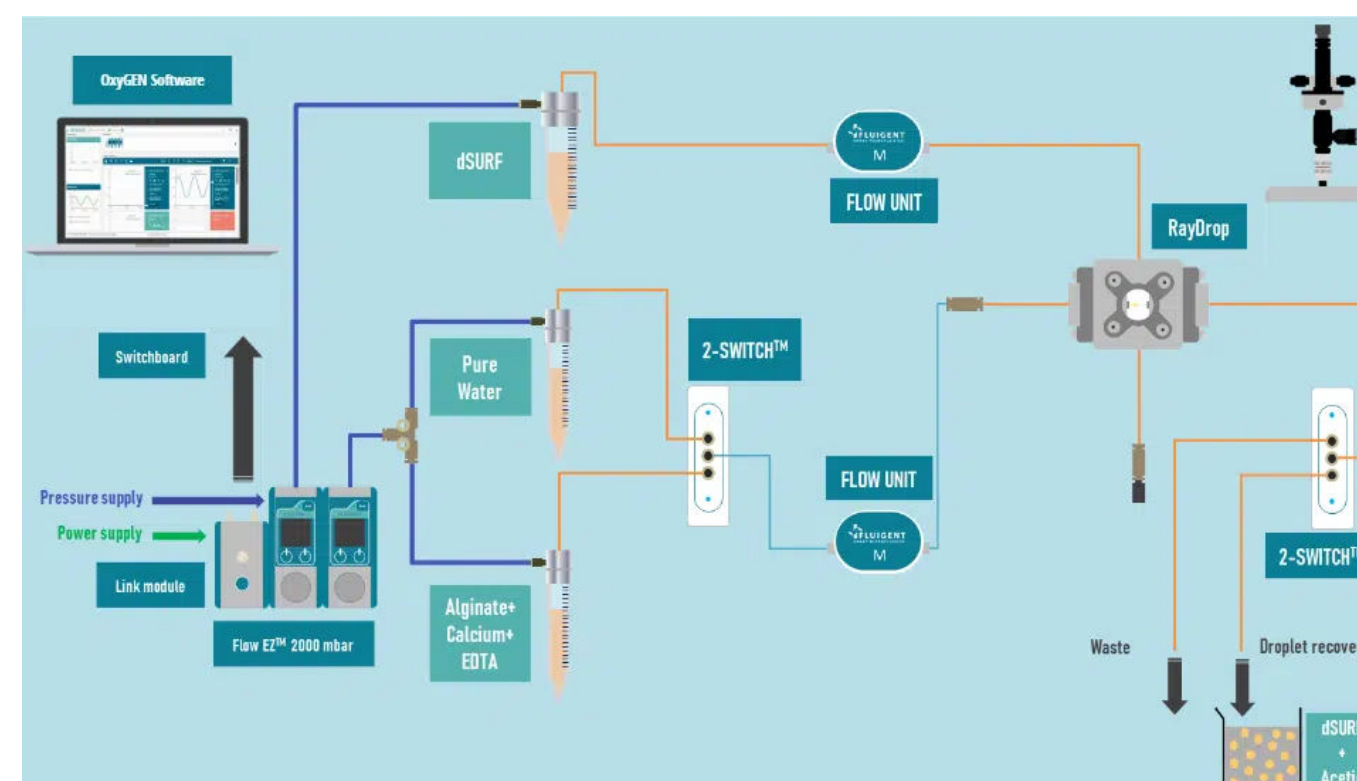


# APPLICATIONS

## HYDROGEL DROPLET PRODUCTION

In our alginate-based droplet production station, our **2-SWITCH™** valves are used for two distinct functions:

- **Fluid switching:** water injection to stabilize the system or alginate injection for droplet production.
- **Fluid sampling:** directing droplet production to a collection tube or to waste.



# PERFUSION

The system helps create **perfusion** into a cell chamber or chip for multiple applications such as **immunostaining**. Up to 10 different samples (4 on the schematic) can be injected into the chip using the M-SWITCH™ for precise, automated perfusion. The 2-SWITCH™ is used to **sort the outlet sample** in two types of reservoir: waste and valuable product.

