DATASHEET

FLUIGENT
SMART MICROFLUIDICS™

M-SWITCH™

11-Port/10-Position Bidirectional Valve

P/N ESSMSW003

The **M-SWITCH™** is a **rotary valve** with **11 ports**. One may select one of **up to 10 solution**s to be delivered to a microfluidic device, or input one fluid and direct it to **up to 10 different locations**. When used with the **Fluigent Automation Tool software** (MAT), the switch position and timing may be **programmed and automated** as well as other flow parameters. The M-SWITCH™ has a **very low dead volume** and has a **rapid switch time** of a few milliseconds.

Benefits

Low internal volume
Gain accuracy in the results
Reduce contamination risks
Prevent precious reagent loss

Automation capabilities
Write automated protocols
Long time duration experiments

Compact
Minimize benchtop space use
Avoid clutter

Standard connections
Plug & Play device

Features

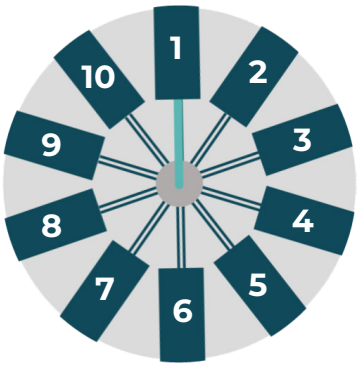
- Internal volume : 3.5 µL
- Up to 7 bar (100 psi)
- Wetted material: PCTFE,UHMW-PE
- Common 1/4-28 flangeless fittings
- Channel diameter : 0.5 mm
- Automation and Live control

Specifications

Performance	
Internal volume	3.5 µL
Dead volume	None
Switching time	400 ms
Maximum Pressure	7 bar (100 psi)
Internal diameter	0.5 mm
Hardware and Electrical	
Dimensions (Weigt)	60*110*110 mm (746 g)
Power consumption	2A (peak)
Fittings	1/4-28 (1/16" OD) flangeless with flat ferrule
Port communication	RJ45 (to the SWITCHBOARD)
Fluigent software compatibility	Microfluidic Automation Tool ESS™ Control

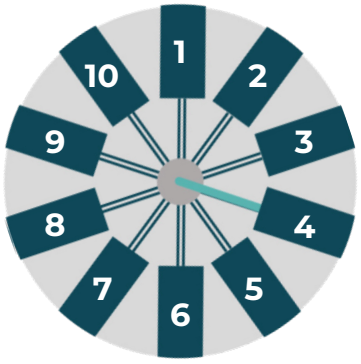
Technology

The M-SWITCH™ is an **11-port / 10-position** rotary valve. Any of the peripheral ports (numbered from 1 to 10) can be connected to the central channel, and the fluidic path created is **bidirectional**.



Position 1

The M-SWITCH™ is actuated by a motor that drives a rotor. It can also be used with a manifold to use a single pressure pump to deliver multiple liquids and simplify set-ups.

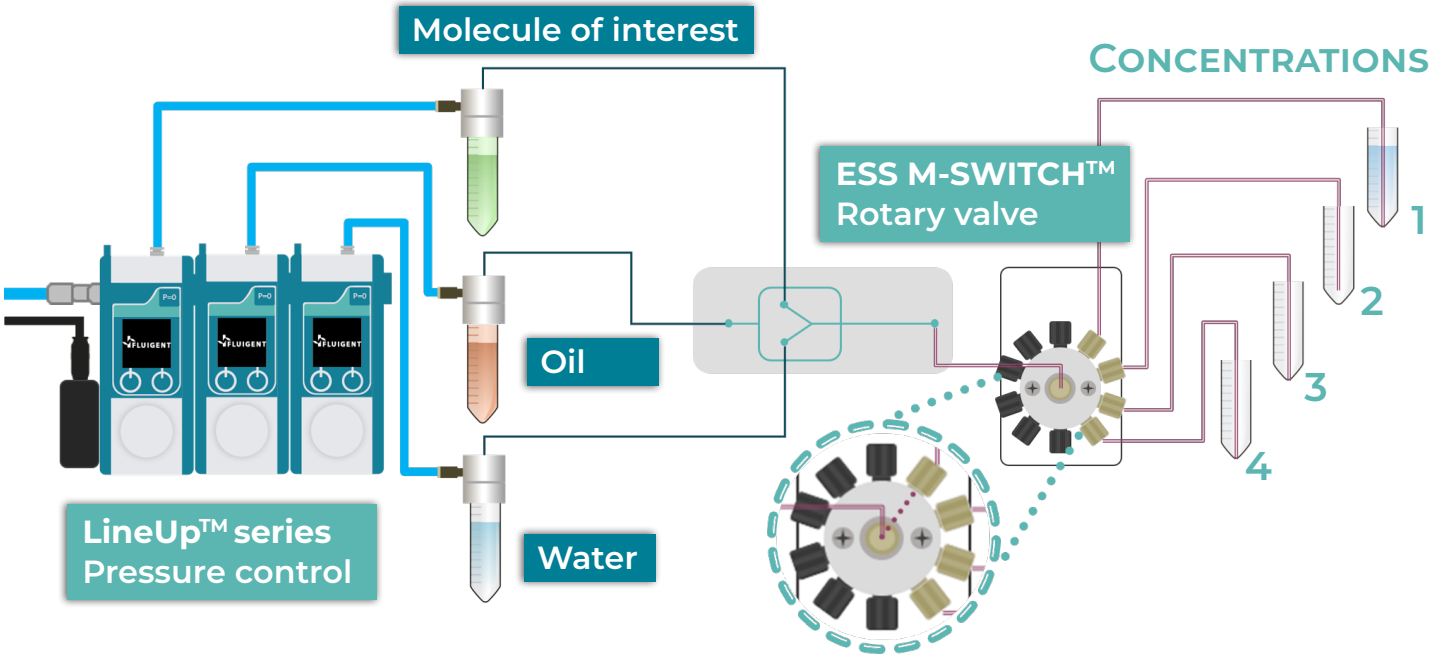


Position 4

Applications

Sample generation and collection

In this application example, **different concentrations** of the molecule of interest are injected into the chip **generating water in oil droplets** containing various concentrations. The droplets are then **sorted** at the outlet of the chip using the M-SWITCH™ regarding their concentrations. Each step can be **automated** either by using Microfluidic Automation Tool (MAT) or partially with live control and monitoring using ESS™ Control dedicated software.



Sequential injections

In this application example, **up to 10 liquids** (4 on the schematic) are **selected sequentially** to be delivered to the chip by the M-SWITCH™. The samples at the outlet of the chip may also be **sorted** by using a 2-SWITCH™ either into a collection tube or to waste. Each step can be **automated** either by using Microfluidic Automation Tool (MAT) or partially with live control and monitoring using ESS™ Control dedicated software.