

Small Volumes Matter

AMF
Advanced Microfluidics

www.amf.ch

RVM

Rotary valve



BENEFITS

- Optimized to limit contamination
- Excellent chemical and biological compatibility
- Replaces a manifold with multiple valves
- Light and compact
- Easy to use and integrate
- Swiss quality



APPLICATIONS

- Sample preparation automation
- Multiplexing
- Sample loops
- Adapted for battery operated devices



FUNCTIONS

- Select channel
- Change flow path
- Stop flow or isolation

Valves specifications,
see on page 14



Selection



Switch



On / Off

This is an OEM product.
It can be tailored for the needs of your instrument.

THE ULTRA-LOW INTERNAL VOLUME ROTARY VALVE CREATE YOUR OWN OPTIMISED FLOW PATH

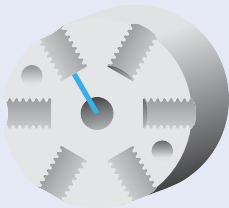
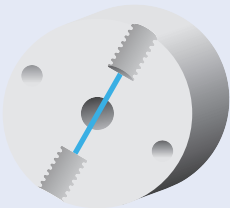
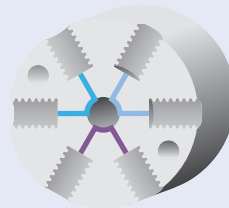
Our OEM valve is a precise low-pressure electric rotary valve designed for automated microfluidic applications. Its exceptionally small channels and accurate positioning system make it ideal for precise liquid handling.

Showing an unrivaled small wetted volume and exceptional ease of use, this valve is the perfect companion for liquid distribution in your instrument or laboratory experiments at a reduced cost. A low-power model exists for minimum battery use and a fast one exists for your time-specific applications.

Model specifications				
CONFIGURATION	POWER	ROTATION TIME FOR 180°	WEIGHT (TOTAL MODULE)	DIMENSIONS
LOW POWER MOTOR	5-10 VDC, 0.5 A PEAK	1.5 s	250 g	29 x 38.3 x 111.8 mm
FAST MOTOR	18-24 VDC, 2 A PEAK	400 ms	450 g	42.3 x 60 x 95.9 mm

Other specifications	
Operating temperature	15 – 45°C (59-111°F)
Operating humidity	20-80%, non condensing
Max. pressure	7 bars (102 psi)
Wetted materials	PTFE or UHMW – PE, PCTFE
Channel diameter	0.5 mm (0.020 in) or 1 mm (0.039 in) (other upon request)
Internal volume	2.5 – 13.7 µL port-to-port (configuration dependent)
Carryover volume	0.55 – 6.7 µL port-to-port (configuration dependent)
Dead volume	None
Tube port fittings	Standard 1/4 – 28 UNF, flat-bottom
Electrical interface	USB mini, 9–pin D–Sub (fast motor model only)
Communication type	Serial, I2C (other upon request)

Valves types

Series type	distribution	on/off	Switch
Liquid path			
known aliases	N-port distribution valve (N+1)-port/1-channel valve N-port selection valve (N+1)-port/N-position valve	Isolation valve Shutoff valve	N-port/(N/2)-channel valve Switch valve Loop valve

Fast liquid switching

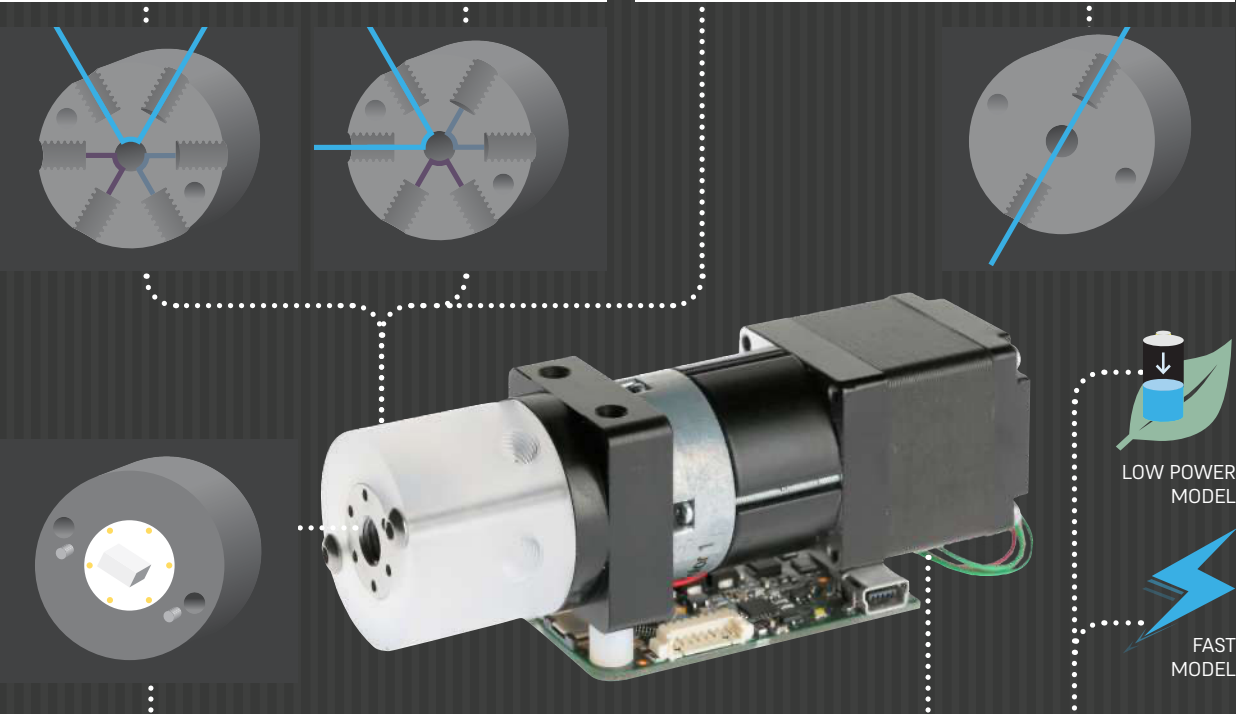
This extremely small internal volume selection valve allows to rapidly switch liquid, while maintaining an ultra-low carryover.

Valid for all models.

Ultra-low internal volume

Our unique precise valves exhibit an internal volume (port-to-port) down to 0.6 μL^* due to their exceptionally small 0.25 mm diameter channels.

*for a 4 ports switch valve



Integrated sensor

The position sensor is directly integrated into the valve to ensure precise positioning.
An automatic procedure at power-up allows the valve to know its precise location. This is called the «homing».

Choice of motor

LOW POWER MODEL
This valve was designed in the most simple way to reduce its power consumption. It is USB powered. A smaller power consumption allows for a smaller power supply, and thus better portable device integration.
FAST MODEL
This valve is designed to reduce the switching speed, taking no more than 400 ms.

Valves specifications						
DISTRIBUTION SERIES						
Ref.	Configuration	Wetted materials	Internal volume	Carryover volume	Fluid path diameter	Max. pressure
V-D-1-6-050-C-P	6 ports low carryover volume	PCTFE, PTFE	2.5 µL	1.5 µL	0.5 mm	7 bars
V-D-1-8-050-C-P	8 ports low carryover volume	PCTFE, PTFE	2.5 µL	1.5 µL	0.5 mm	7 bars
V-D-1-8-100-C-P or U	8 ports low carryover volume	PCTFE, UHMW-PE	13.8 µL	6.7 µL	1 mm	7 bars
V-D-1-10-050-C-P or U	10 ports low carryover volume	PCTFE, UHMW-PE	3.5 µL	1.7 µL	0.5 mm	7 bars
V-D-1-10-100-C-P or U	10 ports low carryover volume	PCTFE, UHMW-PE	13.8 µL	6.7 µL	1 mm	7 bars
V-D-1-12-050-C-P or U	12 ports low carryover volume	PCTFE, UHMW-PE	3.5 µL	1.7 µL	0.5 mm	7 bars
V-D-1-24-050-K-P	24 ports low carryover volume	PEEK, PTFE	3.6 µL	2.2 µL	0.5 mm	7 bars
ON/OFF SERIES						
Ref.	Configuration	Wetted materials	Internal volume	Carryover volume	Fluid path diameter	Max. pressure
V-O-1-2-050-C-P	2 ports	PCTFE, PTFE	3.0 µL	–	0.5 mm	7 bars
SWITCH SERIES						
Ref.	Configuration	Wetted materials	Internal volume	Carryover volume	Fluid path diameter	Max. pressure
V-S-1-4-050-C-P	4 ports ultra-low carryover volume	PCTFE, PTFE	2.8 µL	0.8 µL	0.5 mm	7 bars
V-S-1-6-050-C-P	6 ports ultra-low carryover volume	PCTFE, PTFE	2.5 µL	0.6 µL	0.5 mm	7 bars

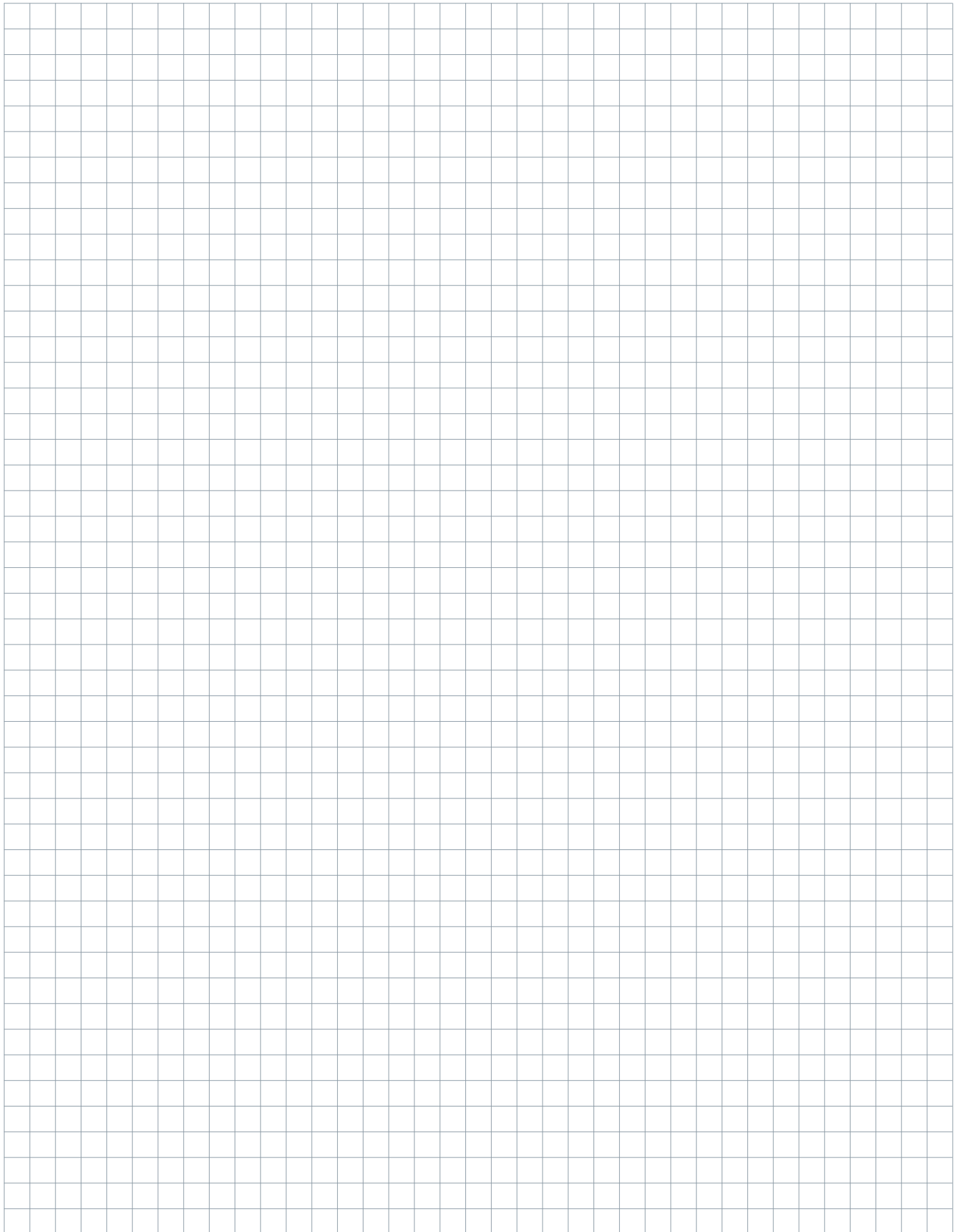
Other models available upon request. Check website for new models.
Valve heads are interchangeable.



Customization options

- Wetted materials
 - Fluidic fittings
 - Fluid path diameter
 - Motor
- Electrical interfaces
 - Communication types
 - Number of ports
 - PCB

NOTES





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