

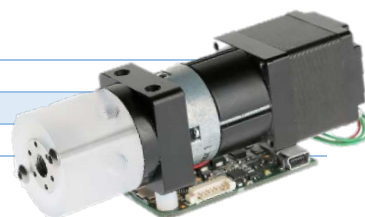
RVM – Ultra-low internal volume rotary valve

DATASHEET



Environmental conditions

Operating temperature	5-40°C (41-104°F)
Humidity	20-80%, non-condensing
Max pressure	5 bars (72 psi)

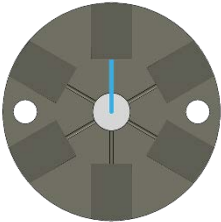
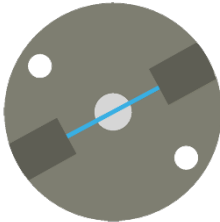
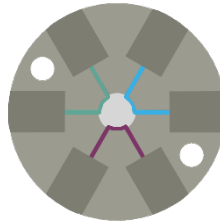


Fluidic characteristics

Tube port fittings	Standard ¼-28 UNF, flat-bottom
Wetted materials	PTFE, PCTFE
Channel diameter	0.5 mm (0.020 in) / 0.4-1 mm (0.015-0.039 in) available upon request

Mechanical characteristics

VALVE MODELS

Series	DISTRIBUTION	ON/OFF	SWITCH
Description	Lets you choose 1 among N ports	Simple switch: flow or no flow	Channels are linked two by two
Liquid path			
Nb of ports	6, 8	2	4,6
Channel diameter	0.5, 1 mm	0.5, 0.75 mm	0.5 mm
Internal volume	2.5 – 13.7 µL	3 – 6.6 µL	2.5 – 2.75 µL
Carryover volume	1.5 - 6.7 µL	1 µL	0.55 – 0.8 µL
Dead volume	None		

For known aliases, please refer to the corresponding website page.

Glossary reminder

Internal volume: Volume inside the system, from entrance to exit.

Dead volume: Volume that is “stuck” in the system (dead end), which is not cleanly swept and relies on diffusion to clear out.

Carryover volume: Volume of liquid that will be mixed with the next liquid. It is not stuck, but will be swept next time a liquid passes.

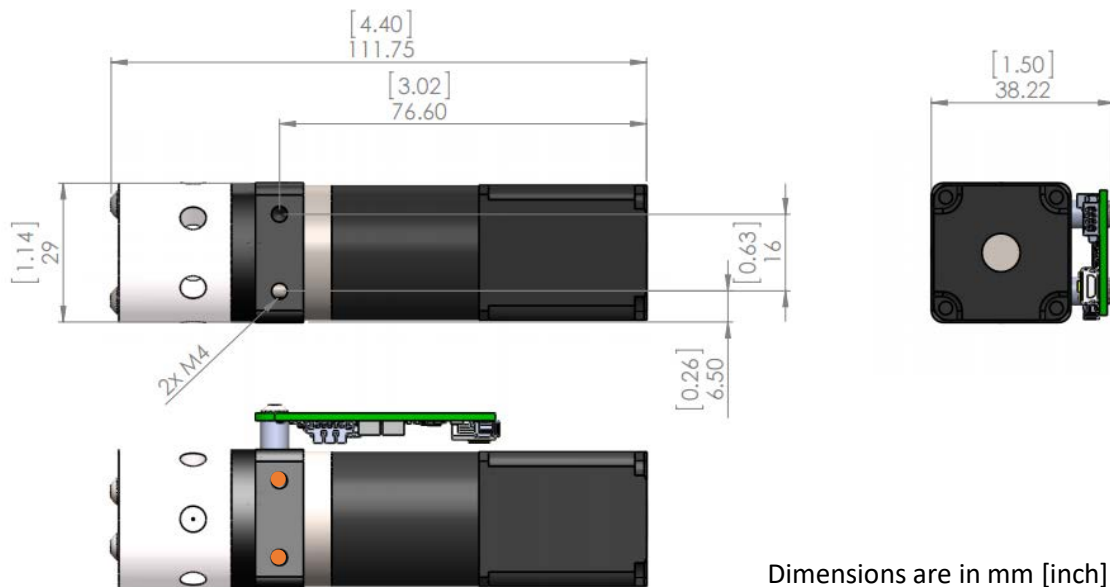
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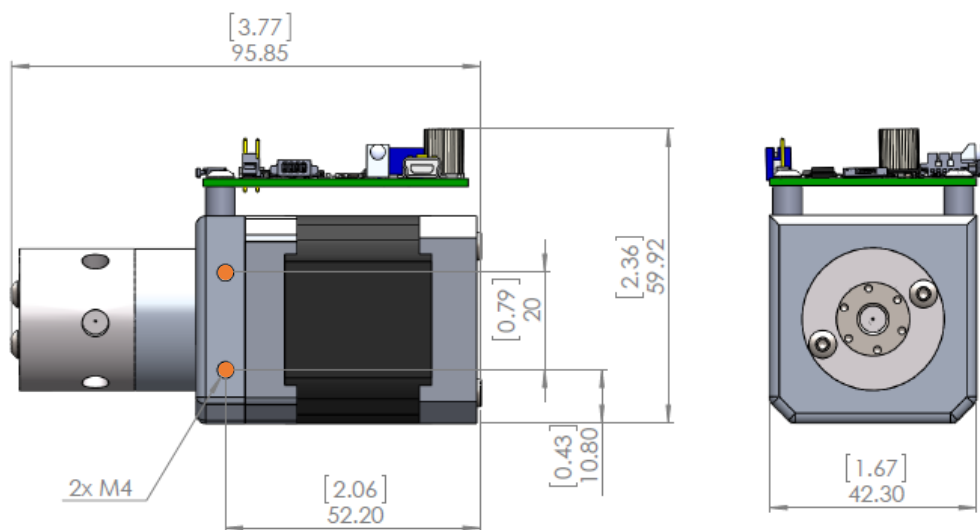
LOW POWER MODULE (Ref. P200-O)

Weight	~250 g
Dimensions	29 x 38.3 x 111.8 mm
External fixation system	2x M4 screws, position shown in orange
Rotation time for 180°	1.5 s



FAST MODULE (Ref. P201-O)

Weight	~450 g
Dimensions	42.3 x 60 x 95.9 mm
External fixation system	2x M4 screws, position shown in orange
Rotation time for 180°	400 ms



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Electrical characteristics

LOW POWER MODEL

Power	5-10 VDC, 0.5 A peak
Required cables for operation	USB mini B male to USB A male or custom cable with PicoBlade™ 6 pos. male

DO NOT PLUG THE RVM INTO A USB HUB. Please plug it into a main USB port directly for better performance.

FAST MODEL

Power	18-24 VDC, 2 A peak
Required cables for operation	USB mini B male to USB A male or custom cable with PicoBlade™ 4 pos. male, and custom power cord

Communication interface

Interface	USB mini B, PicoBlade 4 pos. (other upon request)
Communication type	Serial communication on USB mini I ² C on PicoBlade™ (upon request)

The valve controller is seen as a virtual serial port. There is an on-board FTDI USB to serial chip, so the drivers are automatically installed on recent Windows 7 and above.

SERIAL COMMUNICATION PARAMETERS

Baud rate	9600
Data Bit	8
Parity	None
Stop Bit	1
Handshake	None
End line	<CR>

COMMANDS

A command is in the following format: `/1 + command + R + <CR>`

For example, the pump is initialised with the command Z, so the instruction to send to the pump would be `/1ZR<CR>`

A new command can only be sent once the first one is done, or if an error appears. A *status message* is always sent from the pump, so it is possible to debug the system in case of error. You will find a list of most used commands below. Please refer to the operating manual for an extensive list of commands and error codes.

See the operating manual for the detailed command set.