RVM Series - Industrial Microfluidic Rotary Valve

DATASHEET

Advanced Microfluidics

Environmental conditions

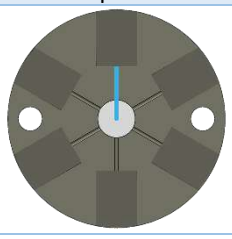
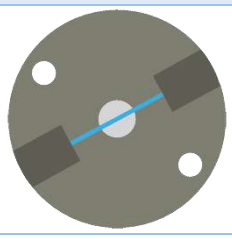
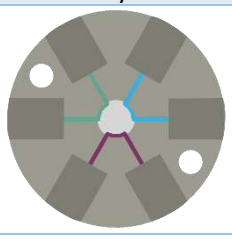
Operating temperature	15-40°C (59-104°F)
Storage temperature	5-45°C (41-113°F)
Humidity	20-80%, non-condensing
Max pressure	7 bars (102 psi)

Fluidic characteristics

Tube port fittings	Standard ¼-28 UNF, flat-bottom
Wetted materials	PTFE, PCTFE and borosilicate glass
Channel diameter	0.5 mm (0.020 in) / 0.3-1.6 mm (0.012-0.063 in) available upon request
Axial port (stainless steel)	¼-28 UNF, flat-bottom (10 mm depth)

Mechanical characteristics

VALVE MODELS

Series	DISTRIBUTION	ON/OFF	SWITCH
Description	Choose 1 among N ports	Simple switch: flow or no flow	Channels are linked two by two
Liquid path			

For known aliases and catalogue models, please refer to https://amf.ch/product/rvm-microfluidic-electric-rotary-valve/

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.

Advanced Microfluidics SA
Chemin de la Dent d'Oche 1a
CH-1024 Ecublens, Switzerland
Phone: +41 (0)21 552 14 30
Email: info@amf.ch
Web: www.amf.ch

V05.03
22.05.2026

MINI MODULE (Ref. P202-O)

Weight (without valve head)	61 g
Dimensions	Ø32 x 57 mm
External fixation system	3x M3 screws, position shown in orange
Rotation time for 180°	Down to 600 ms
Switching time Port to Port	Down to 180 ms

Dimensions are in mm [inch]

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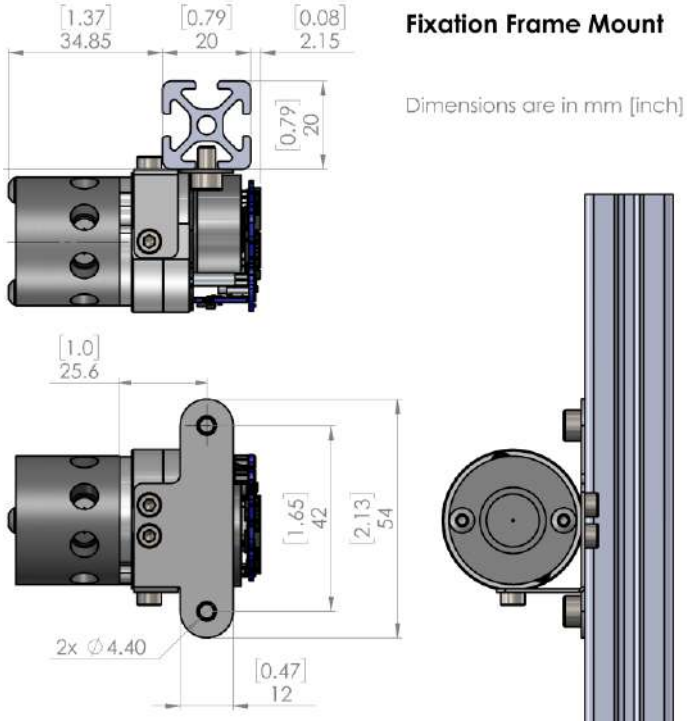
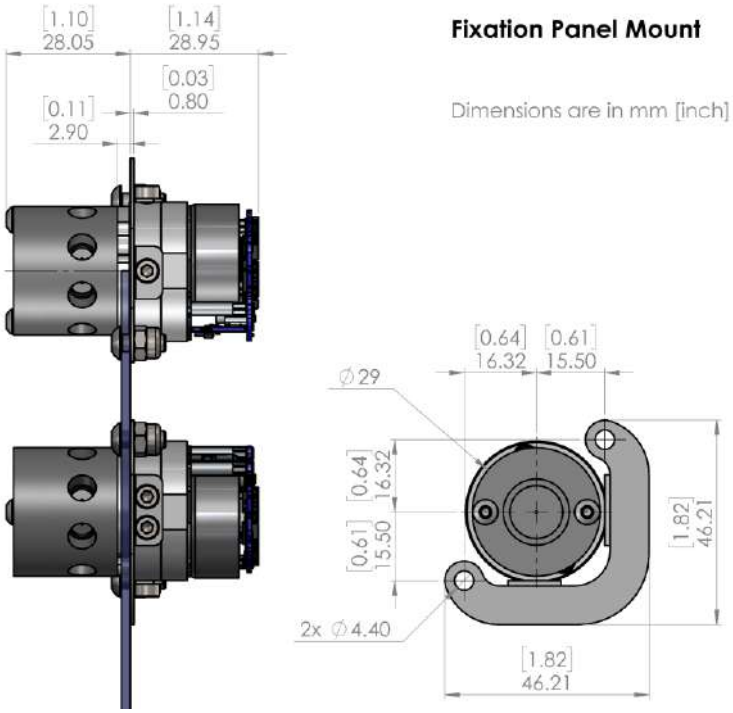
Fixations for MINI MODULE (options)



Fixation Frame Mount

Dimensions are in mm [inch]



Fixation Panel Mount

Dimensions are in mm [inch]

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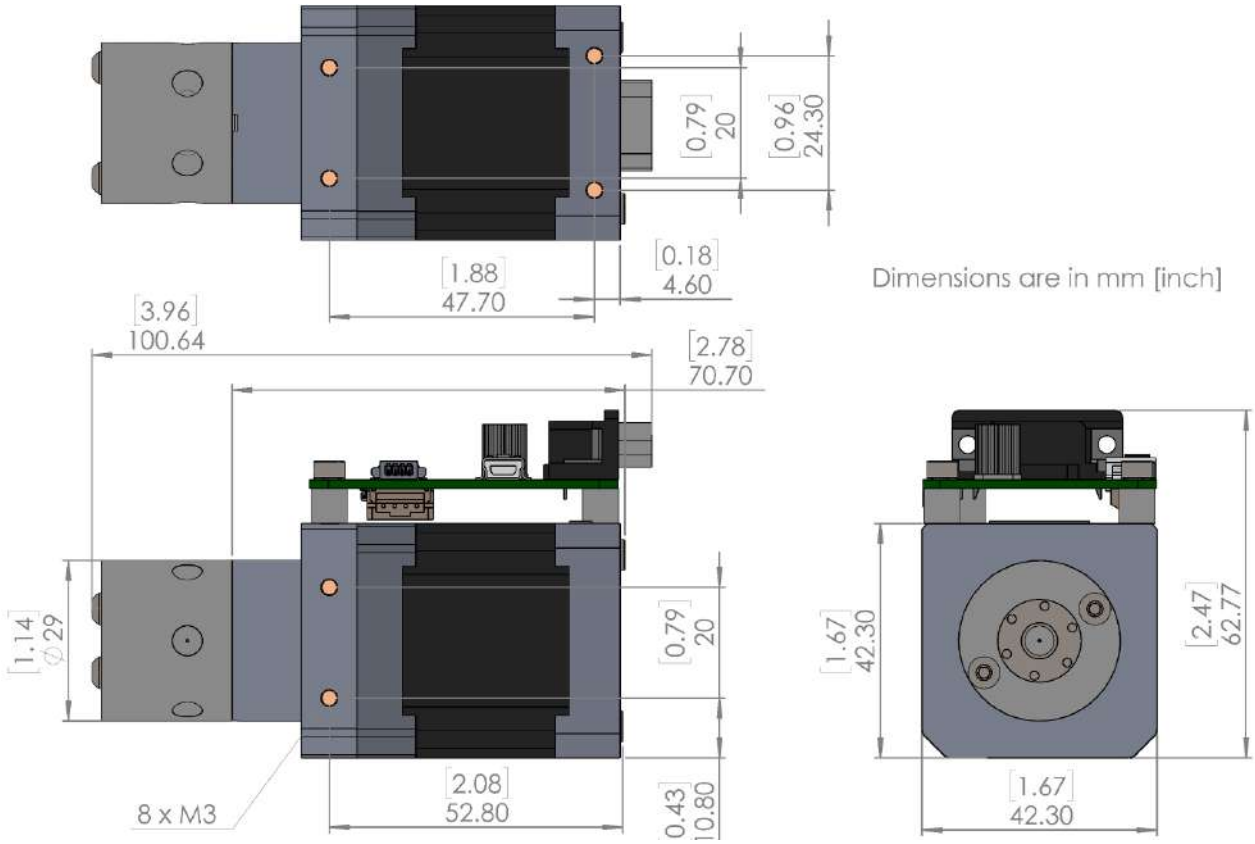
FAST MODULE (Ref. P201-O)

Weight (without valve head)	442 g
Dimensions	42.3 x 63 x 101 mm
External fixation system	6x M3 screws, position shown in orange
Rotation time for 180°	Down to 400 ms
Switching time Port to Port	Down to 136 ms



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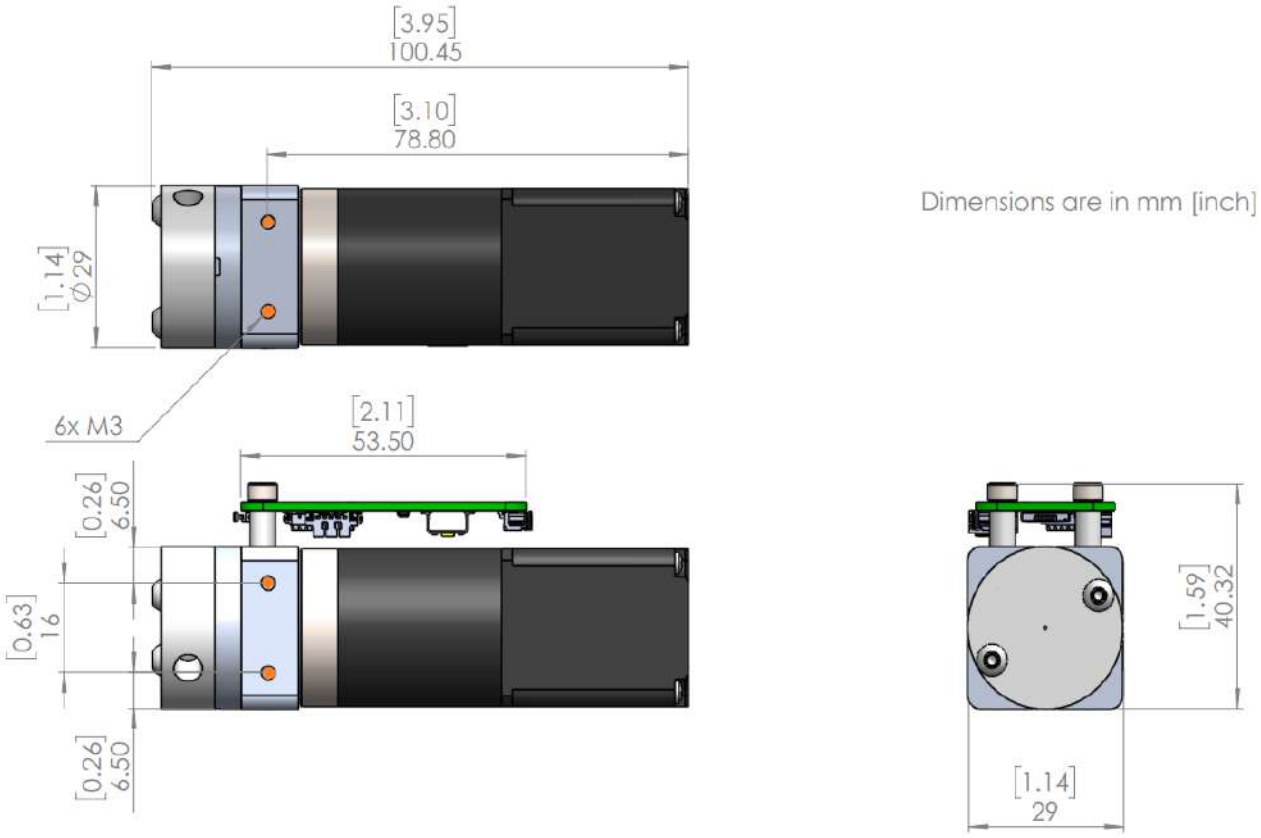
LOW POWER MODULE (Ref. P200-O)

Weight (without valve head)	245 g
Dimensions	29 x 41 x 112 mm
External fixation system	6x M3 screws, position shown in orange
Rotation time for 180°	1.5 s



Dimensions are in mm [inch]

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Electrical characteristics

MINI MODEL (Ref. P202-O)

Power	22-32 VDC, 0.5 A peak
Required cables for operation	**USB C male to USB A or C male** and custom cable with Pico-Lock™ 1mm pitch 4 pos. male

FAST MODEL (Ref. P201-O)

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**

LOW POWER MODEL (Ref. P200-O)

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.

Communication interface

MINI MODEL (Ref. P202-O)

Interface	USB C, 3x Pico-Lock™ 1mm pitch 4 pos.
Communication type	Serial communication on USB C I2C + Power on 1st Pico-Lock™ TTL (or other upon request) on 2nd Pico-Lock™ RS232 (RS485 or CAN upon request) + Power on 3rd Pico-Lock™

FAST MODEL (Ref. P201-O)

Interface	USB mini B, PicoBlade 4 pos., DB9 (other upon request)
Communication type	Serial communication on USB mini I2C on PicoBlade™ RS232 on DB9 (RS485 on DB9 upon request) (other upon request)

LOW POWER MODEL (Ref. P200-O)

Interface	USB mini B, PicoBlade 6 pos.
Communication type	Serial communication on USB mini I2C on PicoBlade™ (other upon request)

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

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SERIAL COMMUNICATION PARAMETERS

Baud rate	9600 (57600 for P202-O by default)
Data Bit	8
Parity	None
Stop Bit	1
Handshake	None
End line	<CR>

View the RVM operating manual for the extensive command set.

Revisions

Version	Author	Release Date	Modifications	Revised By	Approved By
05.03	NCR	22/05/2026	P202-O integration	CAL	ARD

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