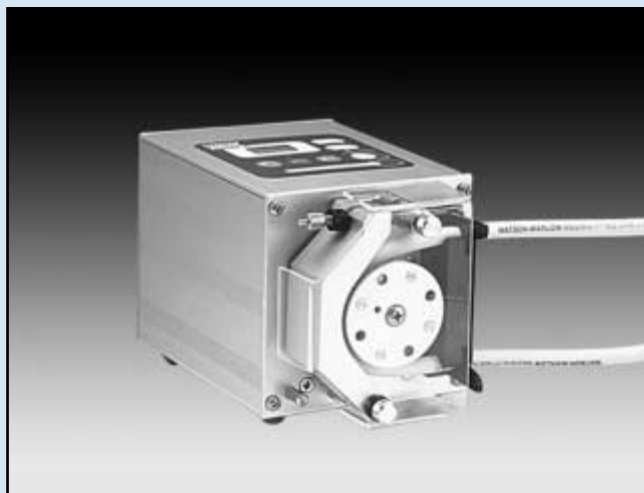


403U/R1, 403U/L and 403U/L2

Ultra Compact Single or Twin Channel Pump

Auto/Manual Control

IP21 Wipedown Enclosure



Technical Information and Features

- Flow rates from 0.06 to 150 mL/min (0.001-2.38 gph)
- Top mounted operator friendly keypad offering digital manual control of:
 - Fwd/Stop/Rev
 - Speed control with LCD display of rpm
 - Max key for rapid priming
- 20:1 speed control range
- Four optional remote control interface cables available offering:
 - 400AC1: Remote speed control via 0-10VDC analog signal and fwd/stop/rev via dry contact closure
 - 400AC2: Remote speed control via 4-20mA analog signal and fwd/stop/rev via dry contact closure
 - 400AC3: Remote fwd/stop/rev via dry contact closure
 - 400AC4: Start/Stop with footswitch
- IP21 wipedown enclosure for use in dry environments
- 403U/R1 fitted with 400R1 single channel pump-head with quick release spring-loaded track, four roller rotor, and adjustable occlusion lever
 - Accepts tube sizes such as # 112, 13, 14, 16, 25, & 17 (0.5 – 6.4mm bore & 1.6 mm wall)
- 403U/L fitted with 400L pumphead designed with twin offset four roller rotors, spring loaded track, and adjustable occlusion lever for virtually pulse-free flow with double-Y tubing elements
 - Accepts Y elements from 0.5 – 4.8mm bore and 1.6 mm wall)
- 403U/L2 fitted with 400L2 pumphead designed with twin four roller rotors, spring loaded track, and adjustable occlusion lever allowing two individual channels of flow
 - Accepts tube sizes such as # 112, 13, 14, & 16 (0.5 – 6.4 mm bore & 1.6 mm wall)

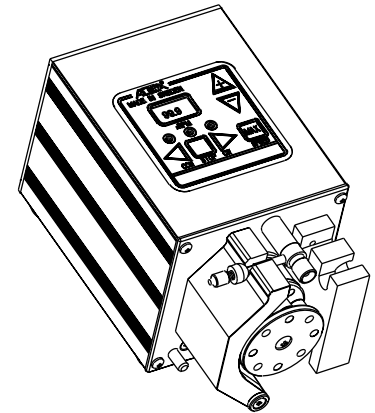
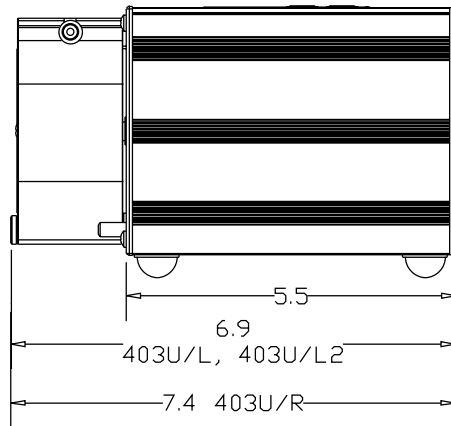
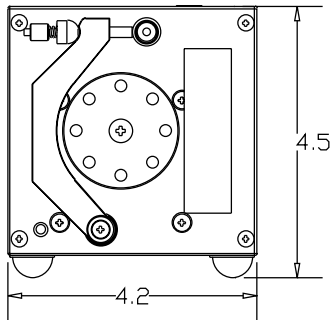
Flow Rate Ranges (ml/min*)

1.6 mm Wall Tube #	112	13	14	N/A	16	N/A	25	17
Tube Bore	0.5mm 1/50"	0.8mm 1/32"	1.6mm 1/16"	2.4mm 3/32"	3.2mm 1/8"	4.0mm 5/32"	4.8mm 3/16"	6.4mm 1/4"
403U/R1 2.5 - 50 rpm	0.06-1.1	0.14-2.8	0.55-11	1.2-24	2.1-43	3.3-65	4.6-92	7.6-150
403U/L2 2.5 - 50 rpm	0.06-1.1	0.14-2.8	0.55-11	1.2-24	2.1-43	3.3-65	4.6-92	

Flow rates for 403U/L2 is shown per channel

1.6 mm Wall Y-Element Tube #	112	13	14	N/A	16	N/A	25	
Tube Bore	0.5mm 1/50"	0.8mm 1/32"	1.6mm 1/16"	2.4mm 3/32"	3.2mm 1/8"	4.0mm 5/32"	4.8mm 3/16"	
403U/L 2.5 - 50 rpm		0.11-2.2	0.28-5.6	1.1-22	2.4-49	4.3-86	6.5-130	9.2-180

* 1 gal = 3785.4 ml



Dimensions in inches

403U/R1, 403U/L and 403U/L2

Ultra Compact Single or Twin Channel Pump Auto/Manual Control - IP21 Wipedown Enclosure

Specifications

- Shipping Weight: 5.5 lbs
- Maximum Power Consumption: 13VA
- Supply: 110-120VAC, 60 Hz
- Maximum Rotor Speeds: 50rpm
- Enclosure: IP21 wipedown
- Operational Temperature Range: 5°C to 40°C (41°F to 104°F)
- Noise: <70dB at 1 meter
- Standards: Equipment complies with all applicable CE directives

Product Codes

403U/R1	single channel pump	040.3K1R.01A
403U/L	Y-element pump	040.3K1L.01A
403U/L2	two channel pump	040.3K1L.02A

Accessory Auto Control Cables (5' pigtail)

Cable 400AC1: 0-10VDC, Fwd/Stop/Rev	049.0011.000
Cable 400AC2: 4-20mA, Fwd/Stop/Rev	049.0031.000
Cable 400AC3: Fwd/Stop/Rev	049.0051.000
Cable 400AC4: Start/Stop with footswitch (10')	049.0071.000

Materials of Construction

Pumphead

- Track: Extruded anodized aluminum
- Rollers: Stainless steel
- Rotor: Aluminum
- Guard: Polyester resin (PET)
- Tube Clamps: Acetal

Drive

- Housing: Extruded anodized aluminum
- Front Plate: Anodized aluminum

Available Tubing Materials

Tubing materials for 403U/R1 and 403U/L2

- Marpren®
- Biopren® (excl. 2.4 & 4.0mm)
- Silicone
- Butyl (excl. 0.5, 0.8, 2.4, 4.0mm)
- Tygon™ (excl. 0.5, 0.8, 2.4, 4.0mm)
- Fluorel™ (excl. 0.5, 0.8, 2.4, 4.0mm)

Tubing Y element materials for 403U/L

- Marpren®
- Silicone
- Connectors: PVDF

The information contained in this document is believed to be correct, but Watson-Marlow Bredel Pumps accepts no liability for any errors it contains, and reserves the right to alter specifications without notice. Tygon is a trademark of the Saint-Gobain Corporation. Fluorel is a trademark of 3M Corporation. Watson-Marlow, Bioprene and Marprene are registered trademarks of Watson-Marlow Limited.

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