

120 Drive with 102R Pumphead



100 series cased pump

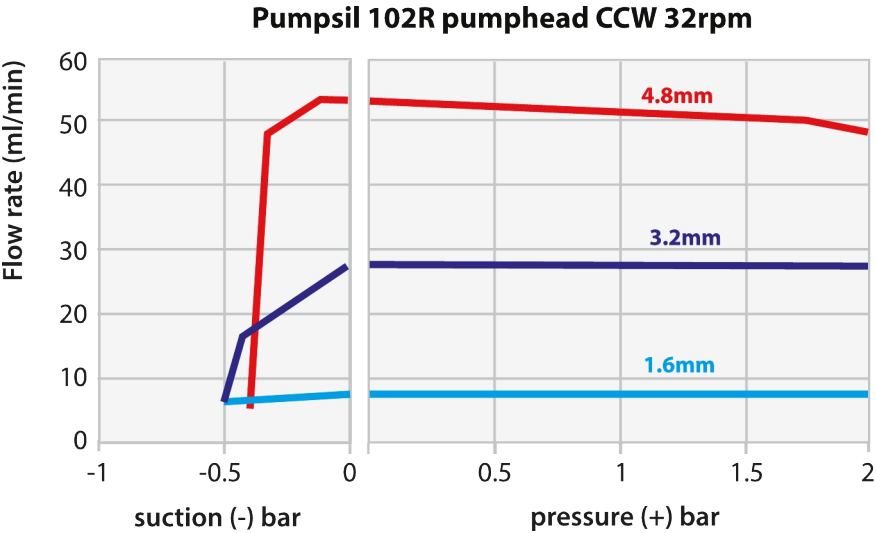
Features and benefits

- Smooth, wipe down case with no sharp edges to tear gloves and no bug traps. IP31 ingress protection
- Superior speed control up to 2,000:1, $\pm 1\%$ set speed accuracy, repeatable flow
- Efficient and intuitive to use, requiring minimal key presses
- Compact footprint requires minimal benchtop space
- Maintenance-free, brushless DC motor
- 1 channel pumphead
- Automatic variable speed, Fixed speed, Manual variable speed options
- Three-year warranty



120 Drive with 102R Pumphead performance

102R pumphead for continuous tubing for fixed (120F) speed pumps — Tube bore and flow rates (ml/min)						
	Speed rpm	0.5mm	0.8mm	1.6mm	3.2mm	4.8mm
Pumpsil (Silicone)	10rpm	0.3	0.5	2.1	8.5	17
	17rpm	0.5	0.9	3.6	14	29
	31rpm	0.9	1.6	6.5	26	52
102R pumphead for continuous tubing for manual (120S) and auto (120U) variable speed pumps — Tube bore and flow rates (ml/min)						
	Speed rpm	0.5mm	0.8mm	1.6mm	3.2mm	4.8mm
Pumpsil (Silicone)	1 – 32rpm	0.03-0.9	0.05-1.6	0.21-6.7	0.85-27	1.6-54
	0.1 – 32rpm	0.003-0.9	0.005-1.6	0.021-6.7	0.085-27	0.16-54



Flows obtained pumping water at 100rpm CCW-rotation
Typically 25% less pressure capacity in the CW direction

Technical specifications

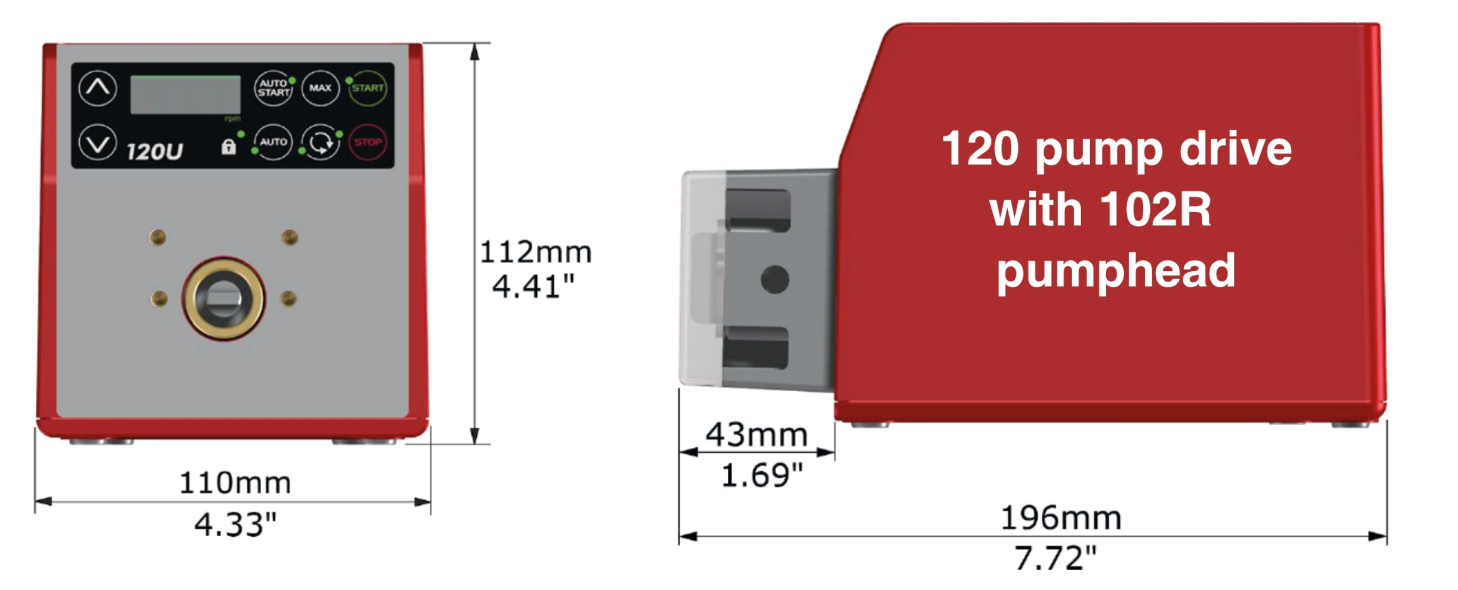
	120 Drive with 102R Pumphead
Pumphead number of rollers	2
Pumphead number of channels	1
Flow rate	0.003 ml/min to 54 ml/min
Flow rate	0.00002 USGPH to 3.04 USGPH
Max. operating pressure	2 bar (30 psi)
Speed control ratio	32:1, 320:1
Operating speed	0.1 rpm to 32 rpm
Operating temperature	5 °C to 40 °C (40 °F to 104 °F)
Weight	1.55 kg (3.4 lbs)
Control options	Automatic variable speed, Fixed speed, Manual variable speed
Drive control options	F, S, U
Standards	CSA C22.2 No. 61010-1:2012/U3:2023-06, EN 61010-1:2010/A1:2019, IEC 61010-1:2010/AMD1:2016, UL 61010-1:2012/R:2023-06
Drive ingress protection	IP31, NEMA 2
Drive humidity	(Non-condensing) 80 % up to 31 °C (88 °F) decreasing linearly to 50 % at 40 °C (104 °F)
Drive noise	<60dB(A) at 1 m
Max. altitude	2000 m (6562 ft)
Drive power supply	Supplied with 24 V DC mains transformer plug (range 90 V to 264 V AC 47 Hz to 63 Hz) which comes with multi-country adaptors

Materials of construction

	120 Drive with 102R Pumphead
Driveshaft	Stainless steel
Drive casework	ABS plastic
Drive keypad/HMI	Polyester
Pumphead body assembly	Acetal copolymer (Kematal), Polycarbonate (PC), PVDF
Pumphead guard	Polycarbonate (PC)
Pumphead roller assembly	MoS2 filled Nylon 6 (Nylatron)
Pumphead rotor assembly	IXEF (Polyarylamide)
Pumphead track	Acetal copolymer (Kematal), PVDF
Spindles	Stainless steel

Information listed covers the complete range.
For detailed specifications of individual models/components refer to user manual or contact WMFTS representative.

120 Drive with 102R Pumphead dimensions

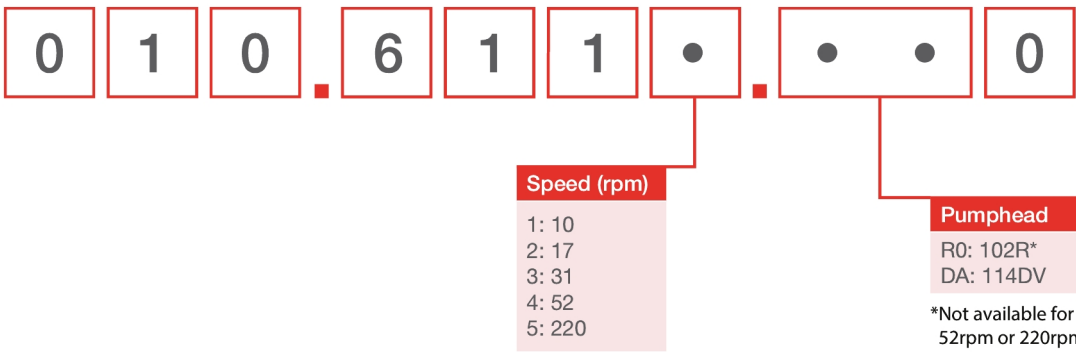


Control options

Key to pump drive control												
120F			120S					120U				
Fixed speed			Manual variable speed					Auto variable speed				
Manual control												
Pump drives								120F	120S	120U		
Fixed speed (CW direction)								✓				
Variable speed 1rpm increments									✓			
Variable speed 0.1rpm increments										✓		
Numerical speed display									✓	✓		
Direction change									✓	✓		
Max (prime)									✓	✓		
Auto start									✓	✓		
Remote control and feedback												
Pump drives								120F	120S	120U		
Run/stop, direction change, auto/man toggle, alarm										✓		
Analogue control												
Pump drives								120F	120S	120U		
Variable speed 0.1rpm increments										✓		
Analogue speed input; 4-20mA, 0-10V										✓		
Tacho speed output; 0-5V										✓		
Security												
Pump drives								120F	120S	120U		
Keypad lock to protect set-up									✓	✓		
Control Ratio												
	120F	120S					120U					
Pumphead	N/A	102R	114DV	400D1	400DM2	400DM3	102R	114DV	400D1	400DM2	400DM3	
Manual	Fixed	1-32 rpm (32:1)	1-200 rpm (200:1)	1-200 rpm (200:1)	1-100 rpm (100:1)	1-100 rpm (100:1)	0.1-32 rpm (320:1)	0.1-200 rpm (2,000:1)	0.1-200 rpm (2,000:1)	0.1-100 rpm (1,000:1)	0.1-100 rpm (1,000:1)	
Automatic	N/A	N/A	N/A	N/A	N/A	N/A	0.01-32 rpm (3,200:1)	0.05-200 rpm (4,000:1)	0.05-200 rpm (4,000:1)	0.03-100 rpm (4,000:1)	0.03-100 rpm (4,000:1)	

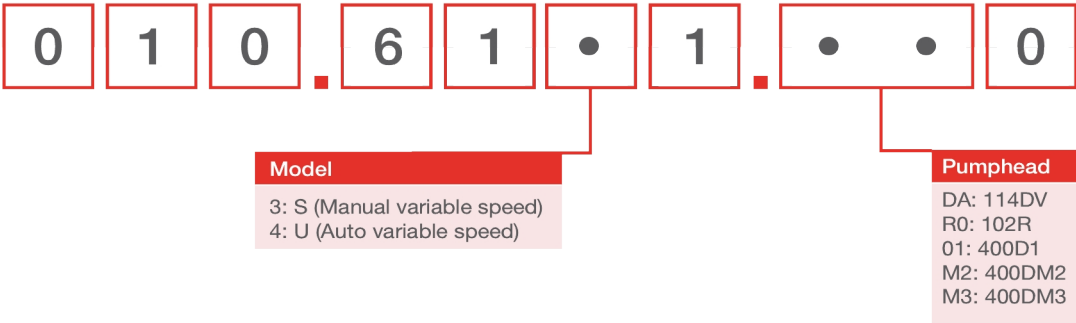
Product codes

120F



Note: All models are IP31 / NEMA 2

120S, 120U



Pumphead product codes		
Model	Description	Product code
102R	102R single channel pumphead (8mm shaft)	013.7101.000
120 PSU	120V PSU kit 1A	MN2634B

Notes:
The pumpheads can only be sold as 120 replacement heads
The pumpheads are not interchangeable between drive models as they use different shaft designs

Tubing 1.6mm wall thickness for 102R pumphead					
	0.5mm	0.8mm	1.6mm	3.2mm	4.8mm
Pumpsil	913.A005.016	913.A008.016	913.A016.016	913.A032.016	913.A048.016

Disclaimer: All flow rates shown were obtained pumping water at 20 °C (68 °F) with zero suction and delivery heads. The information contained in this document is believed to be correct but Watson-Marlow Limited accepts no liability for any errors it contains and reserves the right to alter specifications without notice. It is the user's responsibility to ensure product suitability for use within their application. Watson-Marlow, LoadSure, Pumpsil, PureWeld XL, Bioprene, Marprene are registered trademarks of Watson-Marlow Limited. Tri-Clamp is a registered trademark of Alfa Laval Corporate AB. GORE and STA-PURE are registered trademarks of W.L. Gore and Associates. Please state the product code when ordering pumps and tubing.



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