

120 Drive with 400D1 Pumphead

**WATSON
MARLOW
Pumps**

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, Manual variable speed options
- Three-year warranty



120 Drive with 400D1 Pumphead performance

400D1 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	2.4mm	3.2mm	4.0mm
120S/D1	1 - 200rpm	0.01 - 2.2	0.03 - 5.8	0.11 - 23	0.24 - 49	0.41 - 81	0.59 - 120
120U/D1	0.1 - 200rpm	0.001 - 2.2	0.003 - 5.8	0.011 - 23	0.024 - 49	0.041 - 81	0.059 - 120

Technical specifications

120 Drive with 400D1 Pumphead	
Pumphead number of channels	1
Flow rate range	0.001 ml/min to 120 ml/min
Flow rate range	0.00002 USGPH to 3.04 USGPH
Max. operating pressure	2 bar (30 psi)
Speed control ratio	200:1, 2000:1
Operating speed range	0.1 rpm to 200 rpm
Operating temperature	5 °C to 40 °C (40 °F to 104 °F)
Weight	1.65 kg (3.6 lbs)
Control options	Automatic variable speed, Manual variable speed
Drive control options	S, U
Standards	CE, cETLus
Drive ingress protection	IP31, NEMA 2
Humidity	(Non-condensing) 80 % up to 31 °C (88 °F) decreasing linearly to 50 % at 40 °C (104 °F)
Drive humidity	(Non-condensing) 80 % up to 31 °C (88 °F) decreasing linearly to 50 % at 40 °C (104 °F)
Noise	<60dB(A) at 1 m
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

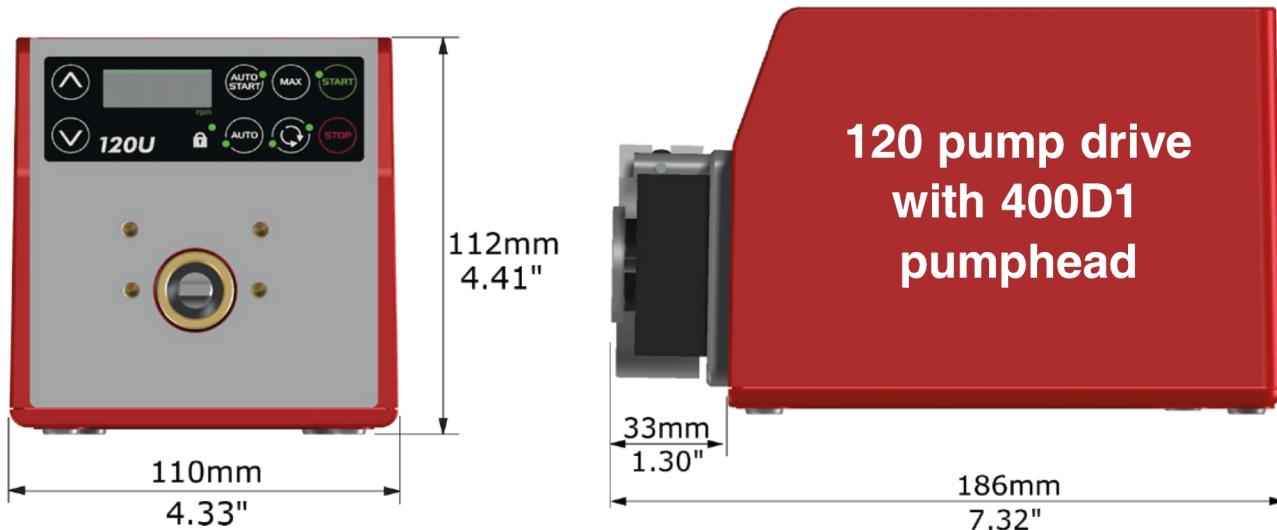
Materials of construction

120 Drive with 400D1 Pumphead	
Driveshaft	Stainless steel
Driveshaft	Stainless steel
Drive casework	ABS plastic
Drive casework	ABS plastic
Keypad/HMI	Polyester
Drive keypad/HMI	Polyester
Pumphead body assembly	Aluminium (anodised)
Pumphead roller assembly	Acetal
Pumphead rotor assembly	Aluminium (anodised)
Pumphead track	Aluminium (anodised)
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 400D1 Pumphead dimensions

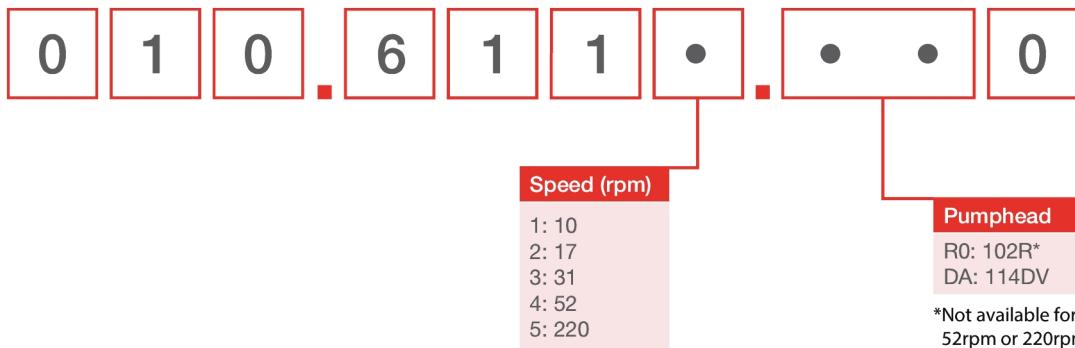


Control options

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

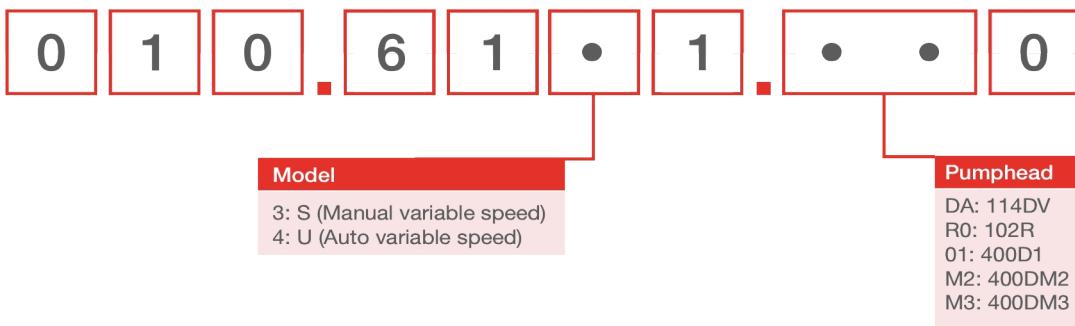
Product codes

120F



Note: All models are IP31 / NEMA 2

120S, 120U



Pumphead product codes

Model	Description	Product code
400D1	400D1 pumphead kit, 1 channel	Not available*
120 PSU	120V PSU kit 1A	MN2634B

Note: *Pumphead and drive should be returned to a Watson-Marlow Approved Service Centre, or a replacement pump purchased

Tubing 1.6mm wall thickness for 400D1 pumphead

	0.5mm	0.8mm	1.6mm	2.4mm	3.2mm	4.0mm
Bioprene	933.0005.016	933.0008.016	933.0016.016	933.0024.016	933.0032.016	
Pumpsil (Silicone)	913.A005.016	913.A008.016	913.A016.016	913.A024.016	913.A032.016	
STA-PURE® Series PCS			961.0016.016		961.0032.016	
Marprene	902.0005.016	902.0008.016	902.0016.016	902.0024.016	902.0032.016	902.0040.016
STA-PURE® Series PFL			966.0016.016		966.0032.016	

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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