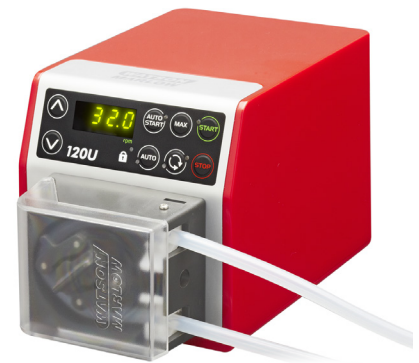


120 Drive With 102R Pump Head System 100 Series Cased Pump

Features and Benefits

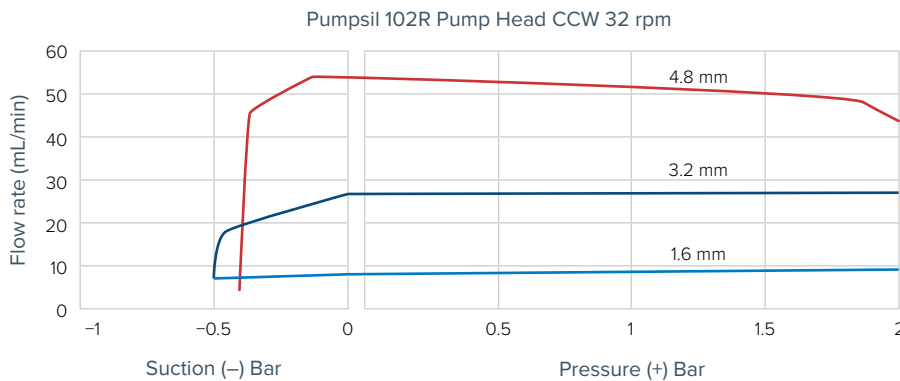
- Smooth, wipe-down case with no sharp edges to tear gloves and no bug traps; IP31 ingress protection
- Superior speed control up to 2000:1, ±1% set speed accuracy, repeatable flow
- Efficient and intuitive to use, requiring minimal key presses
- Compact footprint requires minimal benchtop space
- Maintenance-free, brushless DC motor
- Single-channel pump head
- Automatic variable speed, fixed speed, and manual variable speed options
- Three-year warranty



WARNING

This product is not approved or intended for, and should not be used for, medical, clinical, surgical, or other patient-oriented applications.

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



USA	+1.800.323.4340
	+1.847.549.7600
Canada	+1.800.363.5900
China	+86.21.5109.9909
India	+1.800.266.1244

UK	+44 (0) 1480.272279
	+33 (0) 1.87.170142*
	+49 (0) 937.792030*
Italy	+39.02.84349215
All others	+1.847.549.7600

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*Inquiries from Germany and France are now handled in our St. Neots office by native-speaking experts.

Performance

114DV pump head for continuous tubing for fixed (120F) speed pumps — Tube bore and flow rates (mL/min)						
	Speed rpm	0.5 mm	0.8 mm	1.6 mm	3.2 mm	4.8 mm
Pumpsil (Silicone)	10 rpm	0.3	0.5	2.1	8.5	17
	17 rpm	0.5	0.9	3.6	14	29
	31 rpm	0.9	1.6	6.5	26	52
102R pump head for continuous tubing for manual (120S) and auto (120U) variable speed pumps — Tube bore and flow rates (mL/min)						
	Speed rpm	0.5 mm	0.8 mm	1.6 mm	3.2 mm	4.8 mm
Pumpsil (Silicone)	1 to 32 rpm	0.03 to 0.9	0.05 to 1.6	0.21 to 6.7	0.85 to 27	1.6 to 54
	0.1 to 32 rpm	0.003 to 0.9	0.005 to 1.6	0.021 to 6.7	0.085 to 27	0.16 to 54

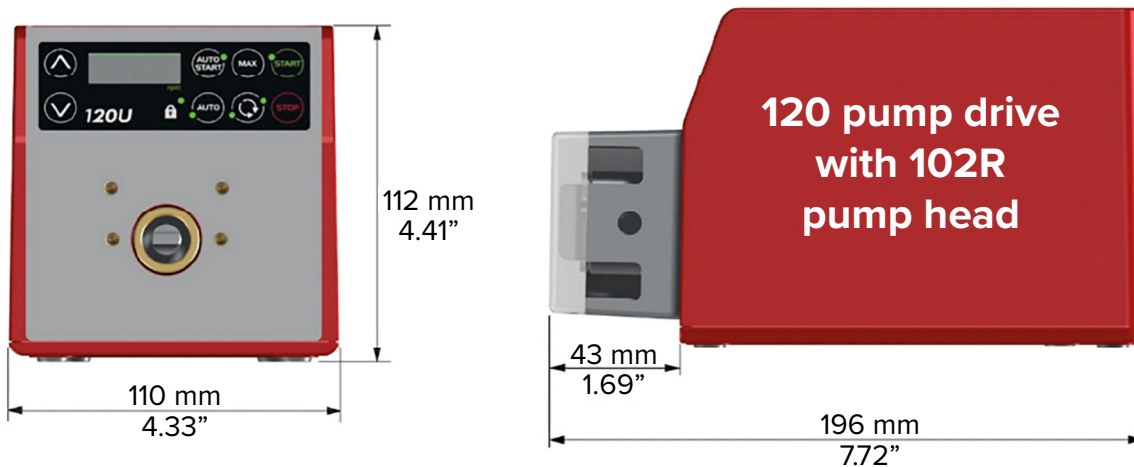
Technical Specifications

Specification	120 drive with 102R pump head
Pump head number of rollers	2
Pump head number of channels	1
Flow rate range	0.003 to 54 mL/min
Flow rate range	0.00005 to 0.9 USGPH
Max. operating pressure	2 bar (30 psi)
Speed control ratio	32:1, 320:1
Operating temperature range	5 to 40 °C (40 to 104 °F)
Weight	1.55 kg (3.4 lbs)
Control options	Automatic variable speed, manual variable speed, fixed speed
Drive control options	F, S, U
Standards	CE, cETLus
Ingress rating	IP31, NEMA 2
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)
Power supply	Supplied with 24 VDC mains transformer plug (range 90 to 264 VAC 47 to 63 Hz) which comes with multi-country adaptors

Materials of Construction

Component	Material
Drive shaft	Stainless steel
Drive casework	ABS (acrylonitrile butadiene styrene) plastic
Keypad/HMI	Polyester
Drive keypad/HMI2	Polyester
Pump head body assembly	Acetal copolymer (Kematal), Polycarbonate (PC), PVDF
Pump head guard	Polycarbonate (PC)
Pump head roller assembly	MoS2-filled nylon 6 (Nylatron®)
Pump head rotor assembly	IXEF (polyarylamide)
Pump head track	Acetal copolymer (Kematal), PVDF
Spindles	Stainless steel

120 DRIVE WITH 102R PUMP HEAD DIMENSIONS



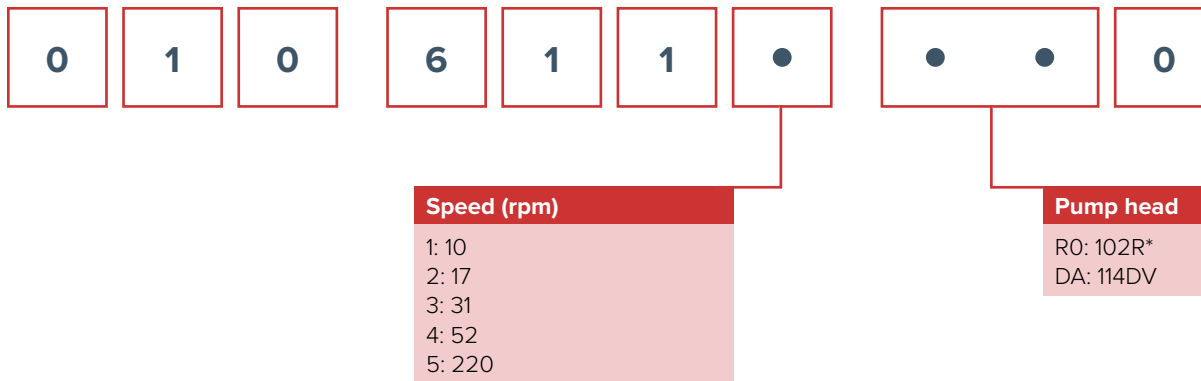
Control Options

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 1 rpm increments		✓	
Variable speed 0.1 rpm increments			✓
Numerical speed display		✓	✓
Direction change		✓	✓
Max (prime)		✓	✓
Auto start		✓	✓
Remote control and feedback			
Pump drives	120F	120S	120U
Run/stop, direction change, automatic/manual toggle, alarm			✓
Analog control			
Pump drives	120F	120S	120U
Variable speed 0.1 rpm increments			✓
Analog speed input; 4-20mA, 0-10V			✓
Tacho speed output; 0-5V			✓
Security			
Pump drives	120F	120S	120U
Keypad lock to protect setup		✓	✓

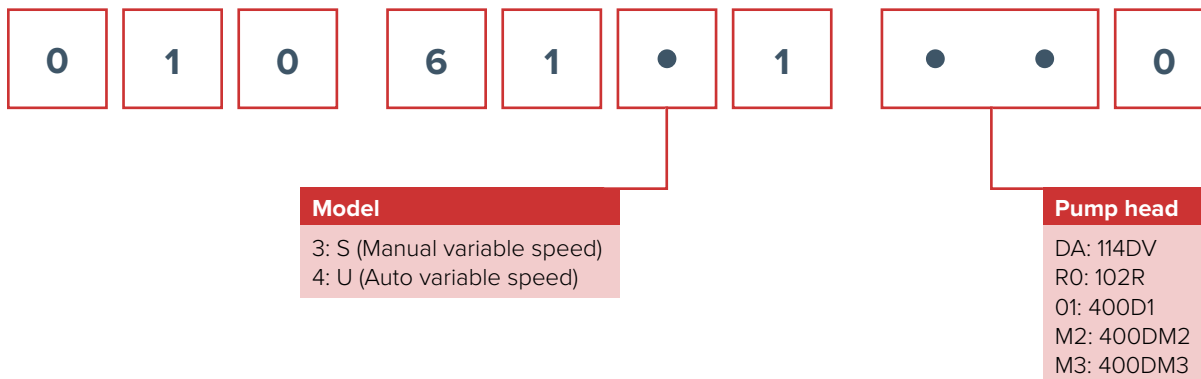
Control Options (continued)

Control ratio						
	120F	120S				
Pump head	N/A	102R	114DV	400D1	400MD2	400MD3
Manual	Fixed	1 to 32 rpm (32:1)	1 to 200 rpm (200:1)	1 to 200 rpm (200:1)	1 to 100 rpm (100:1)	1 to 100 rpm (100:1)
Automatic	N/A	N/A	N/A	N/A	N/A	N/A
		120U				
Pump head		102R	114DV	400D1	400MD2	400MD3
Manual		0.1 to 32 rpm (320:1)	0.1 to 200 rpm (2000:1)	0.1 to 200 rpm (2000:1)	0.1 to 100 rpm (1000:1)	0.1 to 100 rpm (1000:1)
Automatic		0.01 to 32 rpm (3200:1)	0.01 to 200 rpm (20,000:1)	0.01 to 200 rpm (20,000:1)	0.01 to 100 rpm (10,000:1)	0.01 to 100 rpm (10,000:1)

120F



120S, 120U



*Not available for 52 rpm or 220 rpm

Ordering Information

Pump system		
Model	Description	Item number
120S Drive and 102R Pump Head	Variable Speed Pump System, Manual Control, 1 to 32 rpm, Single-Channel, 2-Roller; 90 to 264 VAC	50130-04
120U Drive and 102R Pump Head	Variable Speed Pump System, Manual/Analog Control, 0.1 to 32 rpm, Single-Channel, 2-Roller; 90 to 264 VAC	50130-09
120F Drive and 102R Pump Head	Fixed-Speed Pump System, 10 rpm, Single-Channel, 2-Roller; 90 to 264V	50141-90
120F Drive and 102R Pump Head	Fixed-Speed Pump System, 17 rpm, Single-Channel, 2-Roller; 90 to 264V	50141-92
120F Drive and 102R Pump Head	Fixed-Speed Pump System, 31 rpm, Single-Channel, 2-Roller; 90 to 264V	50141-94

The pump heads are not interchangeable between drive models, as they use different shaft designs.

Tubing 1.6 mm wall thickness for 102R pump head					
	0.5 mm	0.8 mm	1.6 mm	3.2 mm	4.8 mm
Pumpsil®	50130-22	50130-23	50130-24	50130-25	50130-26



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 Cole-Parmer 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 and Pumpsil are registered trademarks of Watson-Marlow Limited. Please state the item number when ordering pumps and tubing.