

120 Drive With 114DV Pump Head System 100 Series Cased Pump

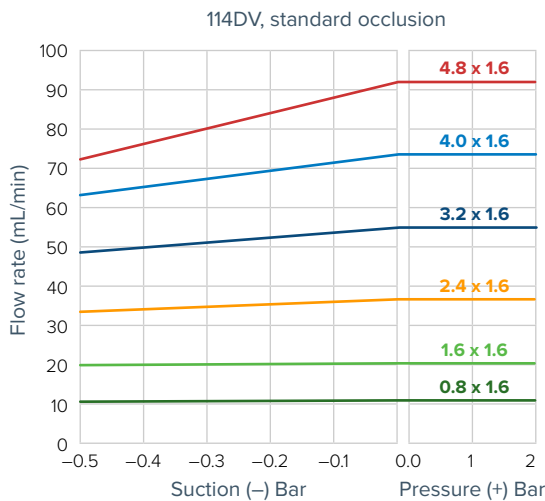
Features and Benefits

- 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, 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.

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China	+86.21.5109.9909
India	+1.800.266.1244

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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	2.4 mm	3.2 mm	4.0 mm	4.8 mm
10 rpm	0.2	0.4	1.4	2.9	4.7	6.7	8.5
17 rpm	0.3	0.7	2.4	4.9	8.0	11	14
31 rpm	0.6	1.2	4.3	9.0	15	21	26
52 rpm	1.0	2.1	7.3	15	24	35	44
220 rpm	4.4	8.8	31	64	100	150	190

114DV 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	2.4 mm	3.2 mm	4.0 mm	4.8 mm
1 to 200 rpm	0.02 to 4.0	0.04 to 8.0	0.14 to 28	0.29 to 58	0.47 to 94	0.67 to 130	0.85 to 170
0.1 to 200 rpm	0.002 to 4.0	0.004 to 8.0	0.014 to 28	0.029 to 58	0.047 to 94	0.07 to 130	0.085 to 170

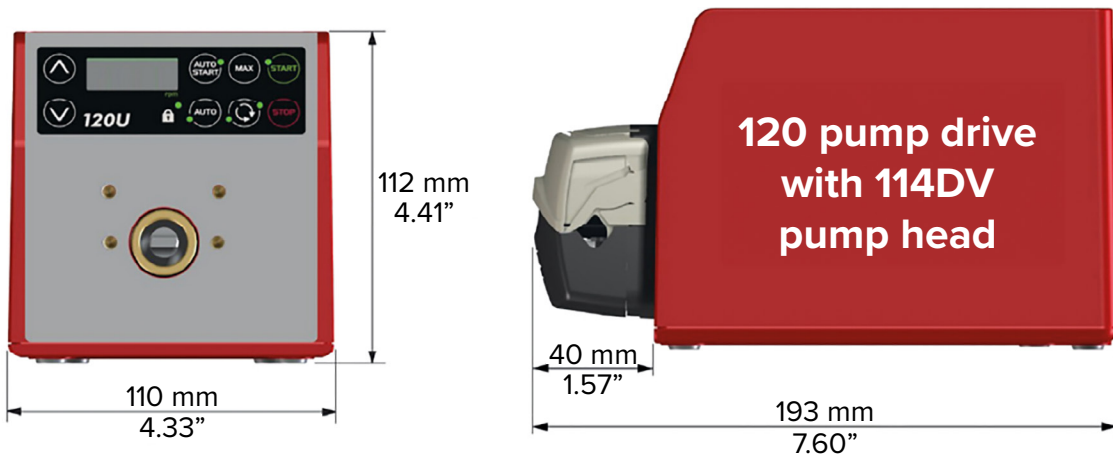
Technical Specifications

Specification	120 drive with 114DV pump head
Pump head number of rollers	4
Pump head number of channels	1
Flow rate range	0.002 to 190 mL/min
Flow rate range	0.00003 to 3.04 USGPH
Operating pressure	2 bar (30 psi)
Speed control ratio	200:1, 2000:1
Operating temperature range	5 to 40 °C (40 to 104 °F)
Weight	1.5 kg (3.3 lbs)
Control options	Automatic variable speed, manual variable speed, fixed speed
Drive controls	F, S, U
Standards	CE, cETLus
Ingress rating	IP31, NEMA 2
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
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
Bearings	Stainless steel
Drive shaft	Stainless steel
Keypad/HMI	Polyester
Drive keypad/HMI	Polyester
Drive casework	ABS plastic
Pump head body assembly	Grilamid PA12, IXEF PARA
Pump head roller assembly	PTFE-filled PBT
Pump head rotor assembly	FPM rubber, Polyacrylamide-IXEF (PARA), PTFE filled PBT, Stainless steel
Pump head track	Polyacrylamide-IXEF (PARA)
Springs	Stainless steel

120 DRIVE WITH 114DV PUMP HEAD DIMENSIONS



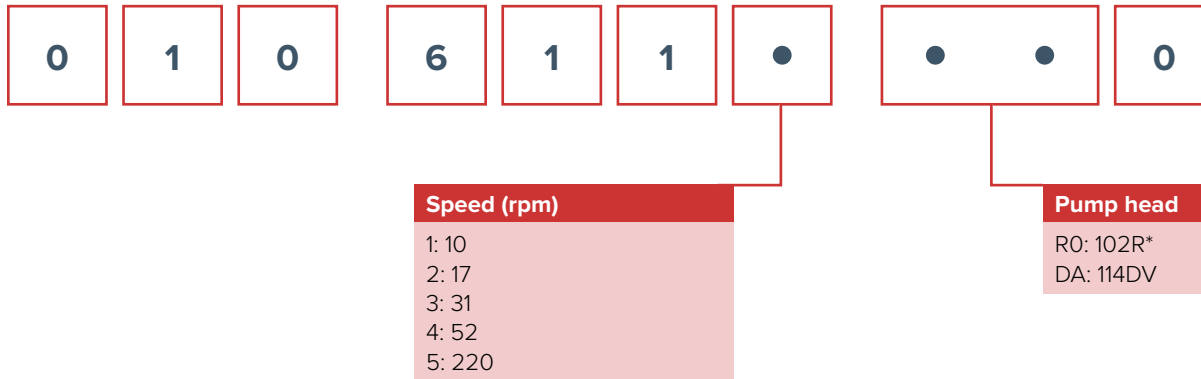
Control Options

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		✓	✓

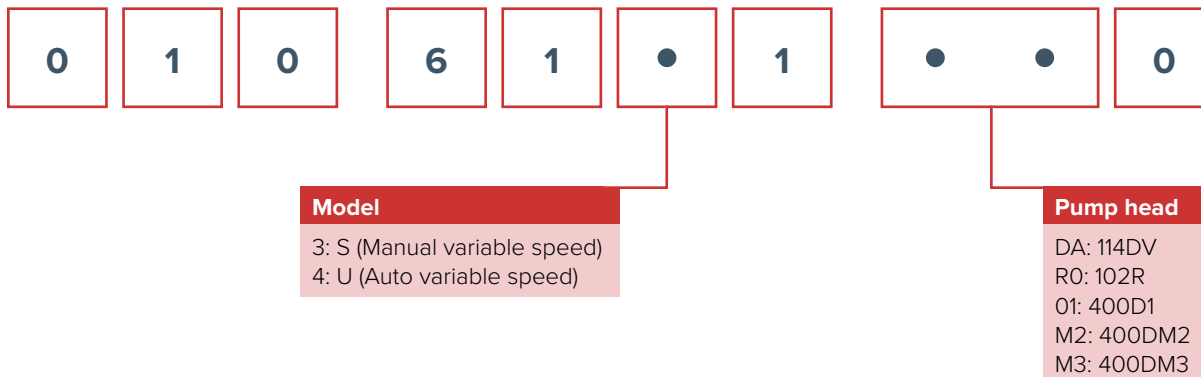
Control Options (continued)

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

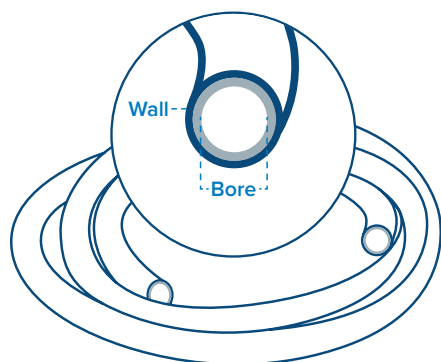
Ordering Information

Pump system		
Model	Description	Item number
120S Drive and 114DV Pump Head	Variable-Speed Pump System, Manual Control, 1 to 200 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50130-01
120U Drive and 114DV Pump Head	Variable-Speed Pump System, Manual/Analog Control, 0.1 to 200 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50130-06
120F Drive and 114DV Pump Head	Fixed-Speed Pump System, 10 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50141-91
120F Drive and 114DV Pump Head	Fixed-Speed Pump System, 17 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50141-93
120F Drive and 114DV Pump Head	Fixed-Speed Pump System, 31 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50141-95
120F Drive and 114DV Pump Head	Fixed-Speed Pump System, 52 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50141-96
120F Drive and 114DV Pump Head	Fixed-Speed Pump System, 220 rpm, Flip-Top Head, Single-Channel, 4-Roller; 90 to 264 VAC	50141-97

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

Tubing 1.6 mm tubing ID for 114DV pump head							
	0.5 mm	0.8 mm	1.6 mm	2.4 mm	3.2 mm	4.0 mm	4.8 mm
Bioprene®	50130-27	50130-28	50130-29	50130-30	50130-31	50140-35	50130-32
Pumpsil®	50130-22	50130-23	50130-24	50133-59	50130-25	—	50130-26

THERMOPLASTIC TUBING



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