

114 ST Stepper motor pumps

114 series

Watson-Marlow Pumps

FEATURES AND BENEFITS

- Unique easy-load pumphead for flows up to 510 ml/min
- Spring loaded tube holder design for maximized tube life
- Reliable performance without operator adjustments
- Brushless stepper motor drive ensures long life
- Excellent speed, flow and dosing accuracy
- Maintenance free
- Cost effective compact design



Watson-Marlow...Innovation in Full Flow

PERFORMANCE

Flow rates (ml/min) Tubing 1.6mm wall

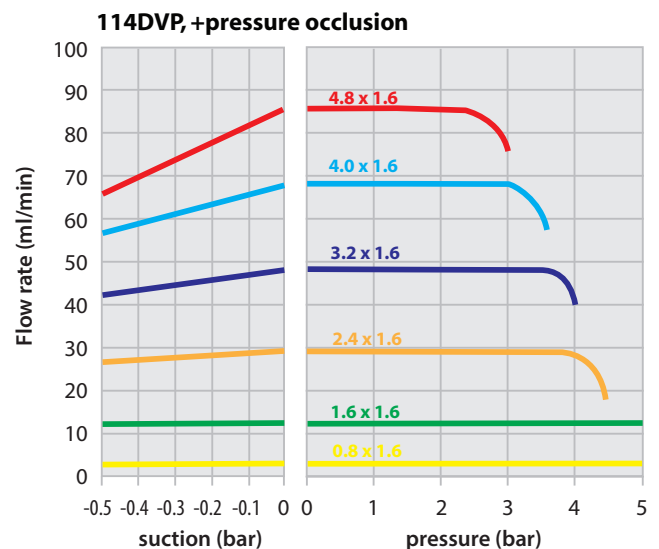
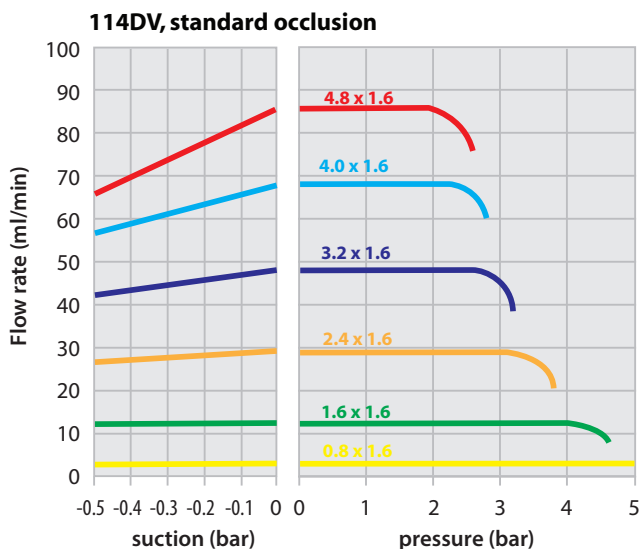
Tube bore (mm)	Speed (rpm)			
	(ml/rev)	100	400	600 (intermittent)
0.5	0.02	2.2	9.1	13.5
0.8	0.04	4.3	17	26
1.6	0.14	14	56	84
2.4	0.29	29	115	175
3.2	0.47	47.5	190	285
4.0	0.67	67	270	405
4.8	0.85	85	340	510

Custom options
No visible rotation – covered holes
Logic off-switch and rotation sensor
Custom colours
Custom occlusion settings

Motorcode (P/N)	Current A/phase	max speed low torque	max speed medium torque	max speed high torque
Z2	1.2	600*	400*	300*

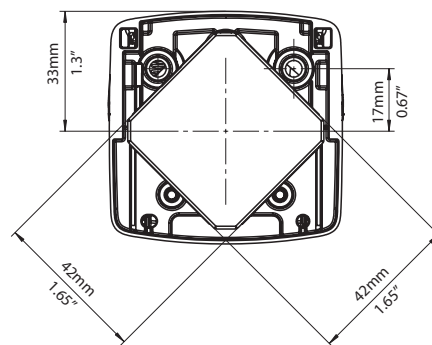
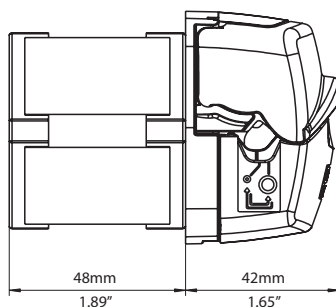
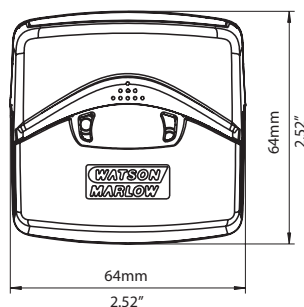
*Approximate figures, tested with a simple bipolar drive at 24VDC and at nominal current, using speed ramp.

Pressure and flow performance



Flows obtained pumping water at 100rpm CCW-rotation

DIMENSIONS



TECHNICAL SPECIFICATION

Pump type	Single channel peristaltic pump
Motor type	2 phase bipolar stepper motor (4 leads)
Required driver	Bipolar, up to 1.2A
Recommended use	Continuous or intermittent applications Ideal for high accuracy dosing applications
Motor speed	0-600 rpm
Operation	CW/CCW
DC resistance/Inductance	3.5 ohm/6.4 mH +/-10%
Supply voltage	Depending on driver board
Power consumption	Up to 10W
Gearbox	None -Direct drive
Brushes	None - Brushless drive
Operating temperature	-10 to +45°C
Weight	0.45 kg
114DV standard pumphead	Optimised for tube life
114DVP +pressure pumphead	Optimised for pressure performance

MATERIALS OF CONSTRUCTION

Component	Material
Housing	IXEF PARA, Grilamid PA12
Rotor	IXEF PARA
Rollers	PTFE filled PBT
Bearings	Stainless steel ball bearings
Shafts	Stainless steel
Springs	Stainless steel
Roller silencer	FPM rubber

ORDER INFORMATION

Product codes				
Description	Phase current	Speed	with 114DV	with 114DVP
114ST peristaltic pump	1.2A	0-600 rpm	010.5Z2S.00A	010.5Z2S.P0A

Tube ordering codes for 114DV and 114DVP pumpheads					
Bore/wall	Pumpsil	Marpene	Bioprene	STA-PURE PFL	PVC*
0.5/1.6mm	913.A005.016	902.0005.016	933.0005.016		
0.8/1.6mm	913.A008.016	902.0008.016	933.0008.016		
1.6/1.6mm	913.A016.016	902.0016.016	933.0016.016	965.0016.016	E3603.016.16
2.4/1.6mm	913.A024.016	902.0024.016	933.0024.016		
3.2/1.6mm	913.A032.016	902.0032.016	933.0032.016	965.0032.016	E3603.032.16
4.0/1.6mm			933.0040.016		E3603.040.16
4.8/1.6mm	913.A048.016	902.0048.016	933.0048.016	965.0048.016	E3603.048.16
Bore/wall	Neoprene*	STA-PURE PCS			
0.5/1.6mm					
0.8/1.6mm	920.0008.016				
1.6/1.6mm	920.0016.016	960.0016.016			
2.4/1.6mm					
3.2/1.6mm	920.0032.016	960.0032.016			
4.0/1.6mm					
4.8/1.6mm	920.0048.016	960.0048.016			

*recommended for 114DVP +pressure pumphead only

All flow rates shown were obtained pumping water at 20C (68F) with zero suction and delivery heads.
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**WATSON
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Pumps

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