

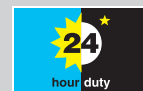
# 630S, 630SN, 630U, 630UN, 630Du, 630DuN, 630Bp, 630BpN, 630US, 630DuS, 630En and 630EnN Pumps

# 600series

## Watson-Marlow Pumps

### FEATURES AND BENEFITS

- Colour display and intuitive menu structures provide visual status indication and minimal key presses
- Flow rates from 0.001 L/min (0.0002 USGPM) to 18 L/min (4.76 USGPM) depending on model and pumphead/tubing options
- 620R, 620RE, 620RE4, 620L and 620LG pumpheads available
- 2650:1 speed control range from 0.1 to 265rpm in 0.1rpm increments
- Keypad incorporates 3-level security PIN lock
- IP31 (NEMA 2) and IP66 (NEMA 4X) cased pumps
- Dual voltage, 115V/230V 50/60Hz
- Remote Analogue/Digital, RS232, RS485, PROFIBUS, SCADA and EtherNet/IP™ control options



*Watson-Marlow...Innovation in Full Flow*

### PERFORMANCE: 620R—PUMPHEAD FOR CONTINUOUS TUBING

- Twin roller pumphead for continuous 3.2mm wall tubing



Tube bore and flow rates—L/min (USGPH)		Continuous tubing, 620R (2 rollers)			
Tube material	Speed	6.4mm	9.6mm	12.7mm	15.9mm
Marpren® TL, Biopren® TL	0.1-265rpm	0.001-3.4 (0.02-53.9)	0.003-6.6 (0.05-105)	0.004-11 (0.06-174)	0.005-12 (0.08-190)
Pumpsil®	0.1-265rpm	0.001-3.2 (0.02-50.7)	0.003-7.2 (0.05-114)	0.004-11 (0.06-174)	0.01-15 (0.16-238)
GORE® STA-PURE® Pump Tubing – Series PFL, Neoprene	0.1-265rpm	0.001-3.2 (0.02-50.7)	0.003-6.6 (0.05-105)	0.004-11 (0.06-174)	0.006-16 (0.1-254)

## PERFORMANCE: 620RE/RE4— PUMPHEADS FOR LOADSURE ELEMENTS

- RE—2 roller pumphead
- RE4—4 roller low pulse pumphead
- LoadSure elements for use with quick release industrial or sanitary tri-clamp connections



Tube bore and flow rates—L/min (USGPH)		LoadSure™ elements, 620RE (2 rollers)	
Tube material	Speed	12mm	17mm
Marpren® TM, Biopren® TM	0.1-265rpm	0.004-11 (0.06-174)	0.01-16 (0.16-254)
Marpren® TL, Biopren® TL	0.1-265rpm	0.004-11 (0.06-174)	0.01-18 (0.16-285)
Pumpsil®	0.1-265rpm	0.004-10 (0.06-159)	0.01-16 (0.16-254)
GORE® STA-PURE® Pump Tubing – Series PFL, Neoprene	0.1-265rpm	0.004-11 (0.06-174)	0.01-19 (0.16-301)

Tube bore and flow rates—L/min (USGPH)		LoadSure™ elements, 620RE (4 rollers)	
Tube material	Speed	12mm	17mm
Marpren® TM, Biopren® TM	0.1-265rpm	0.003-8.3 (0.05-132)	0.004-11 (0.06-174)
Marpren® TL, Biopren® TL	0.1-265rpm	0.003-8.3 (0.05-132)	0.005-12 (0.08-190)
Pumpsil®	0.1-265rpm	0.003-8.7 (0.05-138)	0.004-11 (0.06-174)
GORE® STA-PURE® Pump Tubing – Series PFL, Neoprene	0.1-265rpm	0.003-9 (0.05-143)	0.005-13 (0.08-206)

## PERFORMANCE: 620L/LG—TWIN CHANNEL LOW PULSE PUMPHEADS



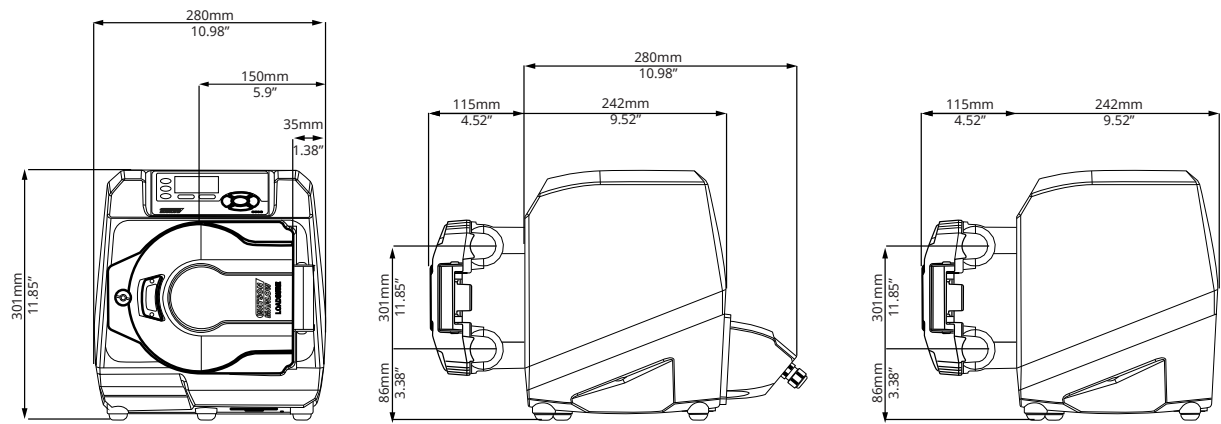
Tube bore and flow rates—L/min (USGPH)		Y element tubing			Continuous tubing (flow per channel - max of 2 channels)		
Tube material	Speed	8.0mm	12.0mm	16.0mm	8.0mm	12.0mm	16.0mm
Pumpsil®	0.1-265rpm	0.002-4.4 (0.03-69.7)	0.003-8.5 (0.05-135)	0.005-11.5 (0.08-182)	0.001-2.2 (0.02-34.9)	0.002-4.3 (0.03-68.2)	0.003-5.8 (0.05-91.9)
Marpren®, Biopren®	0.1-265rpm	0.002-4.5 (0.03-71.3)	0.003-8.0 (0.05-127)	0.005-11.3 (0.08-179)	0.001-2.3 (0.02-36.5)	0.002-4.0 (0.03-63.4)	0.003-5.7 (0.05-90.3)
Neoprene	0.1-265rpm	0.002-4.6 (0.03-72.9)	0.003-7.7 (0.05-122)	0.005-13.3 (0.08-211)	0.001-2.3 (0.02-36.5)	0.002-3.9 (0.03-61.8)	0.003-6.7 (0.05-106)
GORE® STA-PURE® Pump Tubing Series PFL, GORE® STA-PURE® Pump Tubing Series PCS (620LG pumphead only)	0.1-265rpm	0.002-5.2 (0.03-82.4)	0.003-9.0 (0.05-143)	0.005-12.4 (0.08-197)	0.001-2.6 (0.02-41.2)	0.002-4.5 (0.03-71.3)	0.003-6.7 (0.05-106)

## TECHNICAL DATA

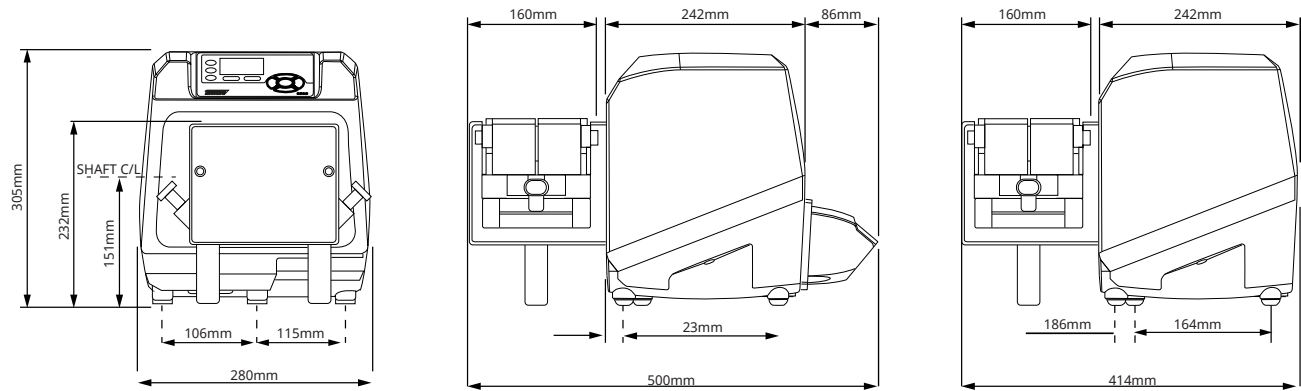
Pump drives	630S	630SN	630U	630UN	630Du	630DuN	630Bp	630BpN	630US	630DuS	630En	630EnN
Model	Standard	Standard IP66 / NEMA 4X	Universal	Universal IP66 / NEMA 4X	Digital Universal	Digital Universal IP66 / NEMA 4X	Bus Pump / Profibus	Bus Pump / Profibus IP66 / NEMA 4X	Universal SCADA / IP66 / NEMA 4X	Digital Universal SCADA / IP66 / NEMA 4X	EtherNet/IP	EtherNet/IP / IP66 / NEMA 4X
<b>Manual control</b>												
Intuitive keypad and colour display	•	•	•	•	•	•	•	•	•	•	•	•
Choice of flowrate or speed display	•	•	•	•	•	•	•	•	•	•	•	•
Full calibration with choice of flow units	•	•	•	•	•	•	•	•	•	•	•	•
MemoDose function	•	•	•	•	•	•	•	•	•	•	•	•
Auto restart facility	•	•	•	•	•	•	•	•	•	•	•	•
Guard switch detection	•	•	•	•	•	•	•	•	•	•	•	•
Leak detection	•	•	•	•	•	•	•	•	•	•	•	•
<b>Pump drives</b>	<b>630S</b>	<b>630SN</b>	<b>630U</b>	<b>630UN</b>	<b>630Du</b>	<b>630DuN</b>	<b>630Bp</b>	<b>630BpN</b>	<b>630US</b>	<b>630DuS</b>	<b>630En</b>	<b>630EnN</b>
<b>Remote control</b>												
Configurable Start/Stop, leak detector and pressure switch input via contact closure or 5V TTL or 24V industrial logic			•	•	•	•						
Configurable Start/Stop, leak detector and pressure switch input via 110V industrial logic									•	•		
Configurable Start/Stop and leak detector input via contact closure or 5V TTL or 24V industrial logic											•	•
<b>Note:</b> Does not include pressure switch												
Direction change and auto/manual toggle input via contact closure or 5V TTL or 24V industrial logic			•	•	•	•						
Direction change and auto/manual toggle input via 110V industrial logic									•	•		
Remote operation of MemoDose (foot/hand-switch or logic input)			•	•	•	•						
Four configurable digital status outputs through 24V, 30W relays				•		•						
Four configurable digital status outputs through 110V relays									•	•		
Menu configurable logic outputs			•		•							
Remote pressure/flow sensors											•	•
<b>Pump drives</b>	<b>630S</b>	<b>630SN</b>	<b>630U</b>	<b>630UN</b>	<b>630Du</b>	<b>630DuN</b>	<b>630Bp</b>	<b>630BpN</b>	<b>630US</b>	<b>630DuS</b>	<b>630En</b>	<b>630EnN</b>
<b>Analogue speed control</b>												
Fully configurable inputs; 0-10V or 4-20mA			•	•	•	•			•	•		
Analogue outputs; 0-10V, 4-20mA			•	•	•	•			•	•		
Keypad/analogue input scaling (replacement of diaphragm pumps)					•	•				•		
Tacho frequency output; 0-1478Hz			•	•	•	•						
2x sensor inputs 4-20mA*											•	•
<b>Pump drives</b>	<b>630S</b>	<b>630SN</b>	<b>630U</b>	<b>630UN</b>	<b>630Du</b>	<b>630DuN</b>	<b>630Bp</b>	<b>630BpN</b>	<b>630US</b>	<b>630DuS</b>	<b>630En</b>	<b>630EnN</b>
<b>Security</b>												
3-level Security PIN lock	•	•	•	•	•	•	•	•	•	•	•	•
<b>Pump drives</b>	<b>630S</b>	<b>630SN</b>	<b>630U</b>	<b>630UN</b>	<b>630Du</b>	<b>630DuN</b>	<b>630Bp</b>	<b>630BpN</b>	<b>630US</b>	<b>630DuS</b>	<b>630En</b>	<b>630EnN</b>
<b>Network communication</b>												
RS485 network control						•				•		
RS232 network control					•							
<b>Pump drives</b>	<b>630S</b>	<b>630SN</b>	<b>630U</b>	<b>630UN</b>	<b>630Du</b>	<b>630DuN</b>	<b>630Bp</b>	<b>630BpN</b>	<b>630US</b>	<b>630DuS</b>	<b>630En</b>	<b>630EnN</b>
<b>Digital pump commands (Profibus / EtherNet/IP)</b>												
Profibus DP V0							•	•				
Communication speeds from 9.6 kbits/s up to 12000 kbits/s							•	•				
Baud Rate (MBPS) 10/100 Full/Half Duplex Operation											•	•
Auto-detect bus speed							•	•			•	•
Speed set point							•	•			•	•
Speed feedback							•	•			•	•
Flow calibration function							•	•			•	•
Hours run							•	•			•	•
Revolution counter							•	•			•	•
Leak detection							•	•			•	•
Low fluid level alarm							•	•			•	•
Diagnostic feedback							•	•			•	•
EtherNet/IP											•	•
Device Level Ring (DLR)											•	•
Flow Totaliser											•	•

\*Range of 3rd party pressure/flow sensors supported—consult factory for list

DIMENSIONS - 620R/RE/RE4 PUMPHEADS



DIMENSIONS - 620L/LG PUMPHEADS



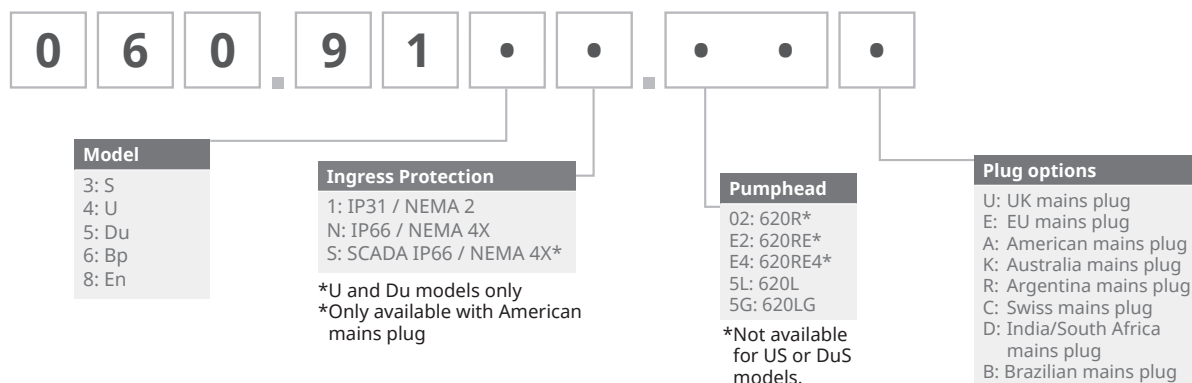
## TECHNICAL SPECIFICATION

	630SN, 630UN, 630DuN, 630US, 630DuS	630BpN	630EnN	630S, 630U, 630Du	630Bp	630En
Ingress rating	IP66 / NEMA 4X			IP31 / NEMA 2		
Enclosure	Watertight/dustproof			Wipe-down		
Profibus connection	N/A	9 - PIN D SKT	N/A	N/A	9 - PIN D SKT	N/A
RoHS compliant	Yes					
Suitability	Corrosion-resistant for heavy industrial environments			Dry industrial environments with non-corrosive atmosphere		
Humidity	(Non-condensing) 80% to 31C (88F), decreasing linearly to 50% at 40C (104F)		(Condensing) 10-100% RH	(Non-condensing) 80% to 31C (88F), decreasing linearly to 50% at 40C (104F)		
Temperature	5C to 40C (40F to 104F)					
Pump weight (R/RE pumphead)	20.5kg (45lb 3oz)			19.7kg (43lb 3oz)		
Pump weight (RE4 pumphead)	21.0kg (46lb 5oz)			20.1kg (44lb 5oz)		
Pump weight (L/LG pumphead)	25.2kg (55lb 9oz)			24.3kg (53lb 9oz)		
Speed control ratio	2650:1					
Torque rating	6Nm, continuous duty					
EtherNet/IP™ connection	N/A		2x SKT M12D	N/A		2x SKT RJ45, 1x 9-Pin D SKT
Noise	<70dB(A) at 1m					
Standard	CE, cETLus, IRAM, C-Tick, NSF/ANSI 61 (for Marpene tubing & loadsure elements)					
Power supply	100-120V/200-240V 1ph 50/60Hz 250VA					

## MATERIALS OF CONSTRUCTION

Component	620R/RE/RE4	620L/LG
Keypad	Polyester	
Switch-plate	ABS PA-765	
Rear blanking plate	Stainless steel 316	
Drive casework	Pressure die-cast aluminium (top - LM6, base - LM24)	
Case work and guard coating	Exterior grade polyester powder coat	Alocrom pre-treatment, exterior grade polyester powder coat
Drive shaft	Stainless steel 440C	
Pumphead track	Powder coated aluminium LM24	Aluminium alloy NS4 anodised
Front/back plates	N/A	Aluminium alloy HS30
Pumphead coating	N/A	Polyester epoxy powder
Track spindles	N/A	Stainless steel 303S31
Rotor body/Tube clamps	N/A	Aluminium alloy HE30
Guard	Pressure die-cast aluminium LM24	
Rotor hub, roller arms	Fortron 1140L4 (PPS)	N/A
Rotor cover	Dupont Hytrel G5544	N/A
Rollers - main/guide	Stainless steel 303/Nylatron	Stainless steel 316
Main roller bearings	Carbon steel	
Tube clamp sets	Polypropylene	N/A
Y element connector	N/A	Stainless steel 303S31

## ORDER INFORMATION



\*Special NEMA module 069.911F.100 Ethernet Watertight Module (630F) IP66 NEMA 4X is required for KROHNE flow sensor, combined with IP31 pump

620R	Continuous tubing			
	6.4mm	9.6mm	12.7mm	15.9mm
STA-PURE® Series PFL	966.0064.032	966.0096.032	966.0127.032	966.0159.032
STA-PURE® Series PCS	961.0064.032	961.0096.032	961.0127.032	961.0159.032
Bioprene® TL	933.0064.032	933.0096.032	933.0127.032	933.0159.032
Marpren® TL	902.0064.032	902.0096.032	902.0127.032	902.0159.032
Pumpsil®	913.A064.032	913.A096.032	913.A127.032	913.A159.032
Neoprene	920.0064.032	920.0096.032	920.0127.032	920.0159.032

620RE/RE4	Sanitary LoadSure™ elements		Industrial LoadSure™ elements	
	(3/4" Tri-clamp PVDF connectors)		(3/4" Cam and groove PP connectors)	
	12mm	17mm	12mm	17mm
STA-PURE® Series PFL	966.0120.SST**	966.0170.SST**		
STA-PURE® Series PCS	961.0120.PFT*	961.0170.PFT*		
Bioprene® TM	933.P120.PFT*	933.P170.PFT*		
Bioprene® TL	933.0120.PFT	933.0170.PFT		
Marpren® TM			902.P120.PPC	902.P170.PPC
Marpren® TL			902.0120.PPC	902.0170.PPC
Pumpsil®	913.A120.PFT	913.A170.PFT	913.A120.PPC	913.A170.PPC
Neoprene			920.0120.PPC	920.0170.PPC

\*4 bar pressure capability with STA-PURE, Bioprene® and Marpren® TM / \*\*SST = sanitary stainless steel connectors

620L/LG	Y element tubing			Continuous tubing		
Bore size (4.0mm wall thickness)	8.0mm	12.0mm	16.0mm	8.0mm	12.0mm	16.0mm
Tubing material						
Pumpsil®	913.AE80.K40	913.A12E.K40	913.A16E.040	913.A080.040	913.A120.040	913.A160.040
Marpren®	902.E080.K40	902.E120.K40	902.E160.040	902.0080.040	902.0120.040	902.0160.040
Bioprene®	933.E080.K40	933.E120.K40	933.E160.040	933.0080.040	933.0120.040	933.0160.040
Neoprene	920.E080.K40	920.E120.K40	920.E160.040	920.0080.040	920.0120.040	920.0160.040
STA-PURE® Series PCS (for 620LG pumphead)	961.E080.K40*	961.E120.K40*	961.E160.K40*			
STA-PURE® Series PFL (for 620LG pumphead)	966.E080.K40	966.E120.K40	966.E160.K40			
				Clamp set for continuous tube		069.4001.000

\*4 bar pressure capability with GORE® STA-PURE® Pump Tubing – Series PCS elements (620LG pumphead only)

All flow rates shown were obtained pumping water at 20C (68F) with zero suction and delivery heads. Disclaimer: 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 users responsibility to ensure product suitability for use within their application. Watson-Marlow, LoadSure, Pumpsil, PureWeld XL, Bioprene, Marpren 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.

**WATSON  
MARLOW  
Pumps**

wmftg.com  
info@wmftg.com  
+44 (0) 1326 370370