

# 630 Drive with 620L Pumphead



600 series cased pump

## Features and benefits

- Color 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
- 2,650:1 speed control range from 0.1 rpm to 265 rpm in 0.1 rpm increments
- Keypad incorporates 3-level security PIN lock
- IP31 (NEMA 2) and IP66 (NEMA 4X) cased pumps available
- Dual voltage, 115 V/230 V 50/60 Hz
- Remote Analogue/Digital, RS232, RS485, PROFIBUS®, PROFINET®, SCADA and EtherNet/IP™ control options



## 630 Drive with 620L Pumphead performance

| 620L twin-channel low-pulse pumpheads for LoadSure elements — Tube bore and flow rates — L/ min (USGPH) |            |                       |                      |                       |  |                       |                       |
|---|------------|-----------------------|----------------------|-----------------------|--|-----------------------|-----------------------|
| Tube material   | Speed      | Y element tubing      |                      |                       | Continuous tubing (flow per channel - max of 2 channels) |                       |                       |
|   |            | 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) |
| 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 specifications

|                             | 630 Drive with 620L Pumphead   |
|-----------------------------|--|
| Pumphead number of channels | 2  |
| Max. flow rate              | 13.3 L/min   |
| Min. flow rate              | 0.002 L/min  |
| Max. flow rate              | 211 USGPH  |
| Min. flow rate              | 0.03 USGPH   |
| Max. flow rate              | 4.76 USGPM   |
| Min. flow rate              | 0.0002 USGPM   |
| Drive speed control ratio   | 2650:1   |
| Drive speed                 | 0.1 - 265 rpm  |
| Operating temperature range | 5 to 40 °C   |
| Operating temperature range | 41 to 104 °F   |
| Weight                      | 24.3 - 25.2 kg   |
| Weight                      | 53.6 - 55.6 lbs  |
| Drive weight                | 16.5, 17.4 kg  |
| Drive weight                | 36.4, 38.5 lbs   |
| NEMA module weight          | 0.9 kg   |
| NEMA module weight          | 2 lbs  |
| Control types               | EtherNet/IP™, PROFIBUS®, PROFINET®, Remote Analogue/Digital, RS232, RS485, SCADA                 |
| Drive control options       | Bp, BpN, Du, DuN, En, EnN, Pn, PnN   |
| Drive standards             | CE, cETLus, C-Tick, IRAM, NSF/ANSI 61 (for Marprene tubing and loadsure elements)                |
| Drive ingress protection    | IP31, IP66, NEMA 2, NEMA 4X  |
| Drive humidity              | (Non-condensing) 80% up to 31°C (88°F), decreasing linearly to 50% at 40C (104F)                 |
| Drive noise                 | <70dB(A) at 1m   |
| Max. altitude               | 2000 m   |
| Drive power supply          | 100 to 120 V/200 to 240 V 1ph 50/60 Hz 250 VA, 100 V to 120 V/200 V to 240 V 1ph 50/60 Hz 250 VA |
| Compatible tubing bore size | 8, 12, 16 mm   |

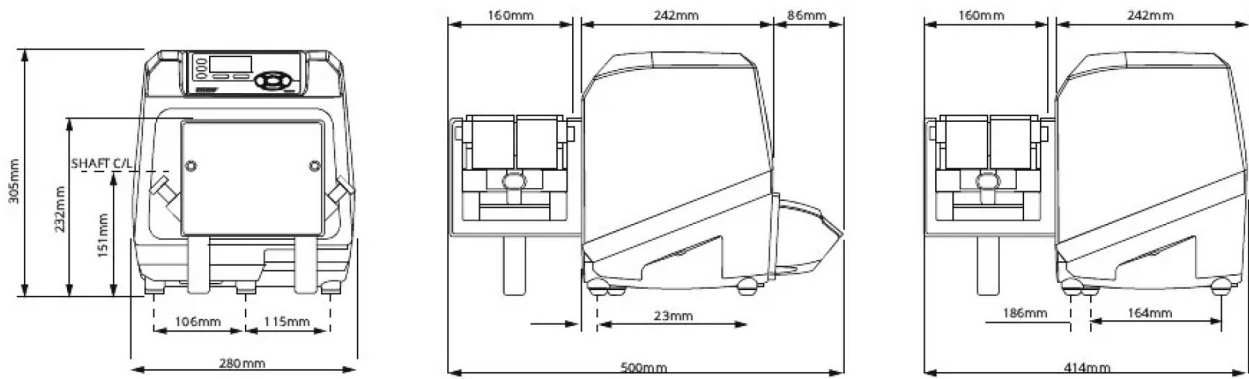
## Materials of construction

|                            | 630 Drive with 620L Pumphead   |
|----------------------------|--|
| Bearings                   | Carbon steel   |
| Driveshaft                 | Stainless steel 440C   |
| Drive casework             | Pressure die-cast aluminum LM24, Pressure die-cast aluminum LM6  |
| Drive casework coating     | Exterior grade polyester powder coat   |
| Guide roller assembly      | Stainless steel 316  |
| Drive keypad/HMI           | Polyester  |
| Pumphead front/back plates | Aluminum alloy HS30  |
| Drive rear blanking plate  | Stainless steel 316  |
| Pumphead body assembly     | Alocrom pre-treatment, Aluminum alloy NS4 anodized, Exterior grade polyester powder coat, Polyester epoxy powder |
| Pumphead guard             | Alocrom pre-treatment, Exterior grade polyester powder coat  |
| Pumphead roller assembly   | Stainless steel 316  |
| Pumphead rotor assembly    | Aluminum alloy HE30  |
| Pumphead track             | Aluminum alloy NS4 anodized  |
| Spindles                   | Stainless steel 303S31   |
| Switch-plate               | ABS PA-765   |
| Tube clamp assembly        | Aluminum alloy HE30  |

Information listed covers the complete range.

For detailed specifications of individual models/components refer to user manual or contact WMFTS representative.

## 630 Drive with 620L Pumphead dimensions



## Control options

| Key to pump drive models |                         |           |                          |                   |                                  |                     |                                    |                                  |  |             |                              |           |                            |
|--------------------------|-------------------------|-----------|--------------------------|-------------------|----------------------------------|---------------------|------------------------------------|----------------------------------|--|-------------|------------------------------|-----------|----------------------------|
| 630S                     | 630SN                   | 630U      | 630UN                    | 630Du             | 630DuN                           | 630Bp               | 630BpN                             | 630US                            | 630DuS                                   | 630En       | 630EnN                       | 630Pn     | 630PnN                     |
| 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 | PROFINET® | PROFINET® / IP66 / NEMA 4X |

| Manual control                             |      |       |      |       |       |        |       |        |       |        |       |        |       |        |  |  |
|--|------|-------|------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--|--|
| Pump drive                                 | 630S | 630SN | 630U | 630UN | 630Du | 630DuN | 630Bp | 630BpN | 630US | 630DuS | 630En | 630EnN | 630Pn | 630PnN |  |  |
| 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                             |      |       | ✓    | ✓     | ✓     | ✓      | ✓     | ✓      | ✓     | ✓      | ✓     | ✓      | ✓     | ✓      |  |  |
| Dipensing (Network Control)                |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      | ✓     | ✓      |  |  |

| Remote control   |      |       |      |       |       |        |       |        |       |        |       |        |       |        |  |  |
|--|------|-------|------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--|--|
| Pump drives  | 630S | 630SN | 630U | 630UN | 630Du | 630DuN | 630Bp | 630BpN | 630US | 630DuS | 630En | 630EnN | 630Pn | 630PnN |  |  |
| Configurable Start/Stop, leak detector and pressure switch input via contact closure or 5 V TTL or 24 V industrial logic |      |       | ✓    | ✓     | ✓     | ✓      |       |        |       |        | ✓     | ✓      | ✓     | ✓      |  |  |
| Configurable Start/Stop, leak detector and pressure switch input via 110 V industrial logic                              |      |       |      |       |       |        |       |        | ✓     | ✓      |       |        |       |        |  |  |
| Direction change and auto/manual toggle input via contact closure or 5 V TTL or 24 V industrial logic                    |      |       | ✓    | ✓     | ✓     | ✓      |       |        |       |        |       |        |       |        |  |  |
| Direction change and auto/manual toggle input via 110 V industrial logic   |      |       |      |       |       |        |       |        | ✓     | ✓      |       |        |       |        |  |  |
| Remote operation of MemoDose (foot/hand-switch or logic input)   |      |       | ✓    | ✓     | ✓     | ✓      |       |        |       |        |       |        |       |        |  |  |
| Four configurable digital status outputs through 24 V, 30 W relays   |      |       |      |       | ✓     | ✓      |       |        |       |        |       |        |       |        |  |  |
| Four configurable digital status outputs through 110 V relays  |      |       |      |       |       |        |       |        | ✓     | ✓      |       |        |       |        |  |  |
| Menu configurable logic outputs  |      |       | ✓    |       | ✓     |        |       |        |       |        |       |        |       |        |  |  |
| Remote pressure/flow sensors   |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      | ✓     | ✓      |  |  |

| Analogue speed control   |      |       |      |       |       |        |       |        |       |        |       |        |       |        |  |  |
|--|------|-------|------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--|--|
| Pump drives  | 630S | 630SN | 630U | 630UN | 630Du | 630DuN | 630Bp | 630BpN | 630US | 630DuS | 630En | 630EnN | 630Pn | 630PnN |  |  |
| Fully configurable inputs; 0-10 V or 4-20 mA                   |      |       | ✓    | ✓     | ✓     | ✓      |       |        | ✓     | ✓      |       |        |       |        |  |  |
| Analogue outputs; 0-10 V, 4-20 mA                              |      |       | ✓    | ✓     | ✓     | ✓      |       |        | ✓     | ✓      |       |        |       |        |  |  |
| Keypad/analogue input scaling (replacement of diaphragm pumps) |      |       |      |       | ✓     | ✓      |       |        |       | ✓      |       |        |       |        |  |  |
| Tacho frequency output; 0-1478 Hz                              |      |       | ✓    | ✓     | ✓     | ✓      |       |        |       |        |       |        |       |        |  |  |
| 2x sensor inputs 4-20 mA*                                      |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      | ✓     | ✓      |  |  |

| Security                  |      |       |      |       |       |        |       |        |       |        |       |        |       |        |  |  |
|---------------------------|------|-------|------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--|--|
| Pump drives               | 630S | 630SN | 630U | 630UN | 630Du | 630DuN | 630Bp | 630BpN | 630US | 630DuS | 630En | 630EnN | 630Pn | 630PnN |  |  |
| 3-level Security PIN lock | ✓    | ✓     | ✓    | ✓     | ✓     | ✓      | ✓     | ✓      | ✓     | ✓      | ✓     | ✓      | ✓     | ✓      |  |  |

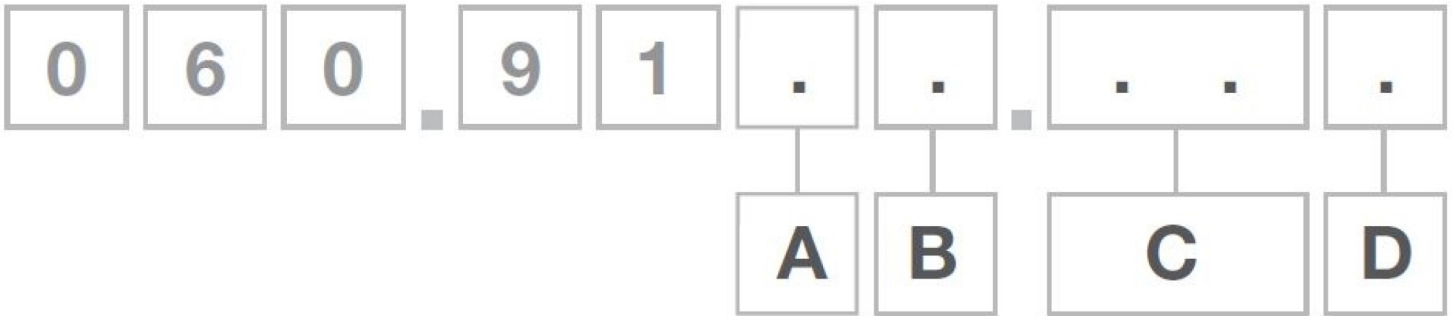
| Network communication |      |       |      |       |       |        |       |        |       |        |       |        |       |        |
|-----------------------|------|-------|------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| Pump drives           | 630S | 630SN | 630U | 630UN | 630Du | 630DuN | 630Bp | 630BpN | 630US | 630DuS | 630En | 630EnN | 630Pn | 630PnN |
| RS485 network control |      |       |      |       |       | ✓      |       |        |       | ✓      |       |        |       |        |
| RS232 network control |      |       |      |       | ✓     |        |       |        |       |        |       |        |       |        |

| Digital pump commands (Profibus / EtherNet/IP)            |      |       |      |       |       |        |       |        |       |        |       |        |       |        |
|---|------|-------|------|-------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| Pump drives   | 630S | 630SN | 630U | 630UN | 630Du | 630DuN | 630Bp | 630BpN | 630US | 630DuS | 630En | 630EnN | 630Pn | 630PnN |
| PROFIBUS® DP V0   |      |       |      |       |       |        | ✓     | ✓      |       |        |       |        |       |        |
| PROFINET® (CC-B & Netload Class III)                      |      |       |      |       |       |        |       |        |       |        |       |        | ✓     | ✓      |
| EtherNet/IP™  |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      |       |        |
| Communication speeds from 9.6 kbits/s up to 12000 kbits/s |      |       |      |       |       |        | ✓     | ✓      |       |        |       |        |       |        |
| Network speed: 10/100 Mbps - Full Duplex Operation        |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      |       |        |
| Network speed: 100 Mbps - Full 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                                       |      |       |      |       |       |        | ✓     | ✓      |       |        | ✓     | ✓      | ✓     | ✓      |
| Flow Totaliser  |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      | ✓     | ✓      |
| Sensor scaling  |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      | ✓     | ✓      |
| Dispensing (Network Control)**                            |      |       |      |       |       |        |       |        |       |        | ✓     | ✓      | ✓     | ✓      |

\*Range of 3rd party pressure/flow sensors supported—see compatible sensor list on [www.wmftg.com/literature](http://www.wmftg.com/literature)

\*\*Dispensing (Network/Manual) - Store up to 100 recipes locally or via network control. Features include volume, flow rate, anti-drip, ramp and time delays. Run these as batches using local, network or manual keypad control.

### Product codes



## Product codes

| A     | B                                   | C                      | D                                 |
|-------|-------------------------------------|------------------------|-----------------------------------|
| Model | Ingress Protection                  | Pumphead               | Plug options                      |
| 3: S  | 1: IP31/ NEMA 2                     | 02: 620R <sup>1</sup>  | U: UK mains plug                  |
| 4: U  | N: IP66/ NEMA 4X                    | E2: 620RE <sup>2</sup> | E: EU mains plug                  |
| 5: Du | S: SCADA IP66/ NEMA 4X <sup>2</sup> | E4:620RE4 <sup>3</sup> | A: American mains plug            |
| 6: Bp |                                     | 5L: 620L               | K: Australia mains plug           |
| 8: En |                                     | 5G: 620LG              | R: Argentina mains plug           |
| 9: Pn |                                     |                        | C: Swiss mains plug               |
|       |                                     |                        | D: India/ South Africa mains plug |
|       |                                     |                        | B: Brazilian mains plug           |

**Notes:**

1. U and Du models only
2. Only available with American mains plug
3. Not available for US or DuS models

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 users 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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