

# Qdos 120

Qdos chemical metering and dosing pump



### Features and benefits

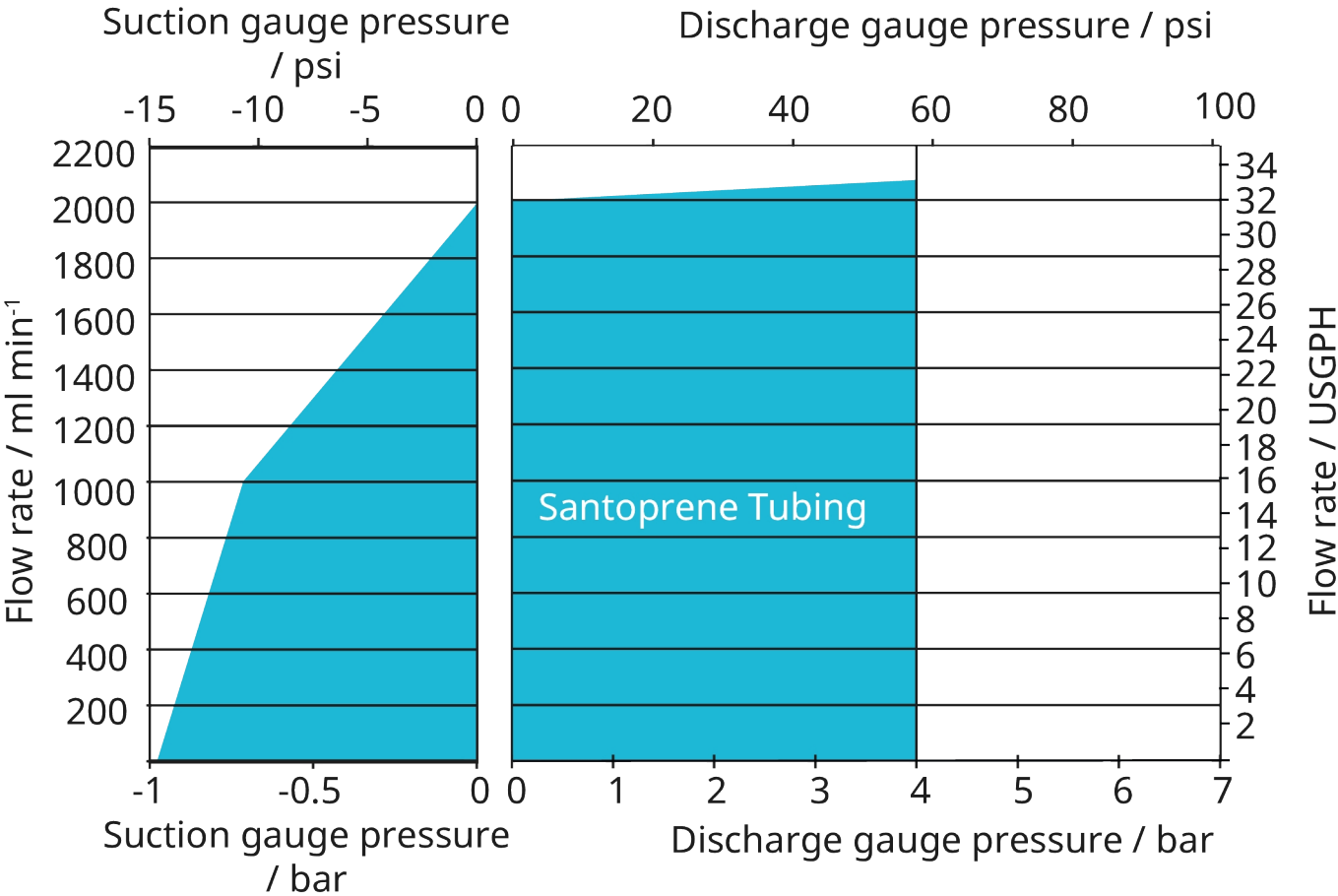
- Cut chemical cost through higher accuracy metering
- Simple drop-in installation eliminates ancillary equipment
- Reduced maintenance with single, no-tools, component replacement
- Cost of ownership is less than that of a diaphragm pump
- Flow rates from 0.1 to 2000 ml/min at up to 4 bar
- No backpressure valves, pulsation dampener, degassing valves, foot valves, strainers or float switches



### Qdos 120 performance

|          | qdos        |                       | qdos remote |                       |
|----------|-------------|-----------------------|-------------|-----------------------|
|          | Speed (rpm) | Flow ml/min (USGPH)*  | Speed (rpm) | Flow ml/min(USGPH)*   |
| qdos 120 | 0.006-140   | 0.1-2000 (0.001-31.7) | 0.078-140   | 1.25-2000 (0.02-31.7) |

\*accuracy ±1%, repeatability ±0.5%



## Technical specifications

|                          | Qdos 120                                                              |
|--------------------------|-----------------------------------------------------------------------|
| Flow rate                | 0.1 ml/min to 2000 ml/min                                             |
| Flow rate                | 0.001 USGPH to 31.7 USGPH                                             |
| Max. operating pressure  | 4 bar (60 psi)                                                        |
| Ambient temperature      | 5 °C to 45 °C (41 °F to 113 °F)                                       |
| Weight                   | 5.7 kg (12.6 lbs)                                                     |
| Control types            | Manual, Profibus®, Remote, Universal, Universal+                      |
| Standards                | CE, cETLus, CSA, C-Tick, NSF 61                                       |
| Drive ingress protection | IP66, NEMA 4X                                                         |
| Drive humidity           | 80 % up to 31 °C, 88 °F, decreasing linearly to 50 % at 40 °C, 104 °F |
| Drive noise              | < 70dB(A) at 1m                                                       |
| Max. altitude            | 2000 m (6562 ft)                                                      |
| Drive power supply       | AC (100—240 V AC 50/60 Hz, 180 W),, DC [(12V, 130 W), (24 V, 180 W)]. |

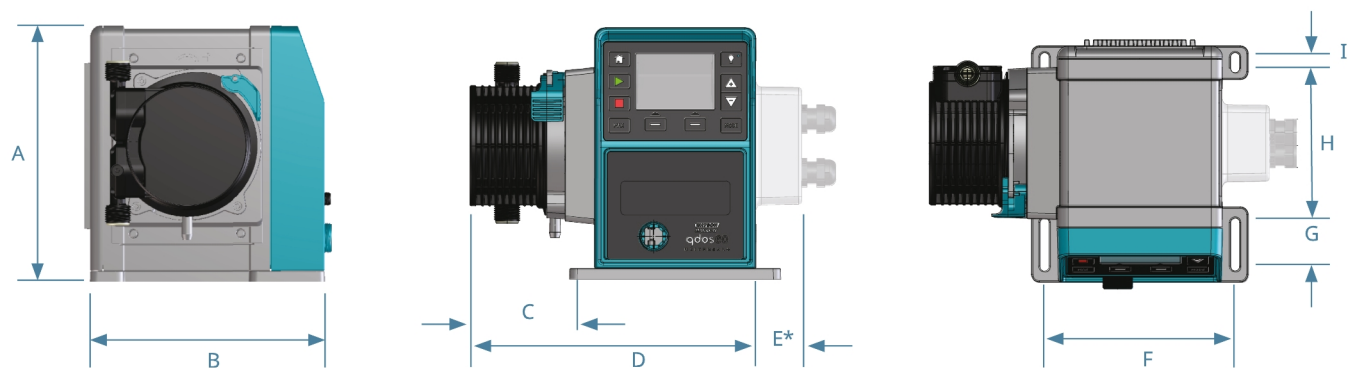
Minimum and maximum flow depends upon pumphead, flow unit and method of control. Pressure and speed depends on pumphead chosen.

## Materials of construction

|                         | Qdos 120                 |
|-------------------------|--------------------------|
| Bearings                | Stainless steel, Steel   |
| Driveshaft              | Stainless steel 440C     |
| Drive casework          | 20 % glass filled PPE/PS |
| Drive casework coating  | 20 % glass filled PPE/PS |
| Fluid connectors        | Polypropylene, PVDF      |
| Drive keypad/HMI        | Polyester                |
| Lubricant               | PFPE based               |
| Pumphead body assembly  | 30 % glass filled PPO/PS |
| Pumphead rotor assembly | Glass filled Nylon       |
| Tubing                  | Santoprene               |

Material depends on pumphead chosen.

Qdos 120 dimensions



Note: Pumphead appearance and fluid port positions may differ between models.

| Model                  | A            | B            | C              | D             | E           | F            | G           | H            | I           |
|------------------------|--------------|--------------|----------------|---------------|-------------|--------------|-------------|--------------|-------------|
| qdos 120               | 234mm (9.2") | 214mm (8.4") | 104.8mm (4.1") | 266mm (10.5") | 43mm (1.7") | 173mm (6.8") | 40mm (1.6") | 140mm (5.5") | 10mm (0.4") |
| *Optional relay module |              |              |                |               |             |              |             |              |             |

## Control options

| Operational modes                 | Manual | Remote | PROFIBUS | Universal | Universal+ |
|-----------------------------------|--------|--------|----------|-----------|------------|
| Manual                            | ✓      |        | ✓        | ✓         | ✓          |
| PROFIBUS—bus speed 9.6–1,500 kb/s |        |        | ✓        |           |            |
| Contact                           |        |        |          | ✓         | ✓          |
| 4-20mA                            |        | ✓      |          | ✓         | ✓          |
| Fault reporting                   | ✓      | ✓      | ✓        | ✓         | ✓          |

| Features                            | Manual | Remote | PROFIBUS | Universal | Universal+ |
|-------------------------------------|--------|--------|----------|-----------|------------|
| Numerical flow display              | ✓      |        | ✓        | ✓         | ✓          |
| Numerical speed display             | ✓      |        | ✓        | ✓         | ✓          |
| Fluid level monitor                 | ✓      |        | ✓        | ✓         | ✓          |
| Max (prime)                         | ✓      |        | ✓        | ✓         | ✓          |
| Auto restart (after power restored) | ✓      | ✓      | ✓        | ✓         | ✓          |
| Fluid recovery                      | ✓      |        | ✓        | ✓         | ✓          |
| Leak detection                      | ✓      | ✓      | ✓        | ✓         | ✓          |
| 3.5" (88.9mm) colour TFT display    | ✓      |        | ✓        | ✓         | ✓          |
| LED Pump status icons               |        | ✓      |          |           |            |

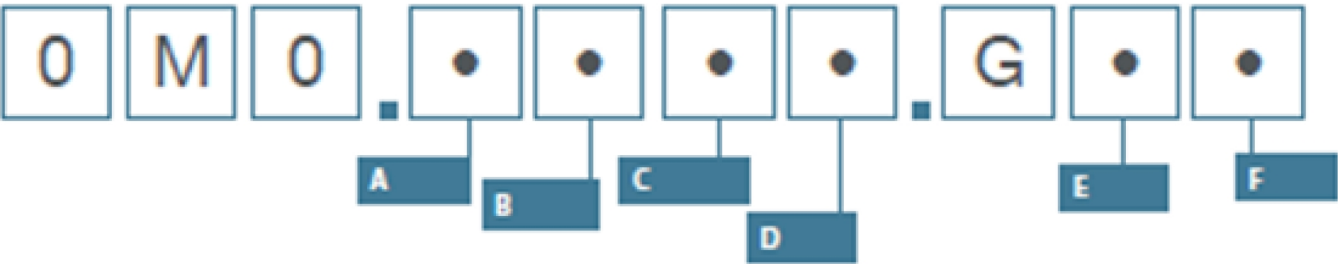
| Control methods                                                                                      | Manual                                                                                               | Remote | PROFIBUS                                                                                             | Universal                                                                                            | Universal+                                                                                           |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Input/Output Options                                                                                 |                                                                                                      | L      | L                                                                                                    | L or R                                                                                               | L or R                                                                                               |
| Manual control capability                                                                            | ✓                                                                                                    |        | ✓                                                                                                    | ✓                                                                                                    | ✓                                                                                                    |
| 4-20mA input                                                                                         |                                                                                                      | ✓      |                                                                                                      | ✓                                                                                                    | ✓                                                                                                    |
| 4-20mA input two point calibration                                                                   |                                                                                                      |        |                                                                                                      |                                                                                                      | ✓                                                                                                    |
| 4-20mA output                                                                                        |                                                                                                      | ✓      |                                                                                                      |                                                                                                      | ✓                                                                                                    |
| Contact input (pulse/batch)                                                                          |                                                                                                      |        |                                                                                                      | L or R                                                                                               | L or R                                                                                               |
| Manual speed adjustment range                                                                        | 3333:1 (Qdos 20)<br>5000:1 (Qdos 30)<br>10000:1 (Qdos 60)<br>20000:1 (Qdos 120)<br>5000:1 (Qdos CWT) |        | 3333:1 (Qdos 20)<br>5000:1 (Qdos 30)<br>10000:1 (Qdos 60)<br>20000:1 (Qdos 120)<br>5000:1 (Qdos CWT) | 3333:1 (Qdos 20)<br>5000:1 (Qdos 30)<br>10000:1 (Qdos 60)<br>20000:1 (Qdos 120)<br>5000:1 (Qdos CWT) | 3333:1 (Qdos 20)<br>5000:1 (Qdos 30)<br>10000:1 (Qdos 60)<br>20000:1 (Qdos 120)<br>5000:1 (Qdos CWT) |
| Minimum motor adjustment speed increment<br>(Dependent upon the operating mode and chosen flow unit) | 0.006                                                                                                | 0.078  | 0.100                                                                                                | 0.003                                                                                                | 0.003                                                                                                |
| 4-20mA resolution                                                                                    |                                                                                                      | 1600:1 |                                                                                                      | 1600:1                                                                                               | 1600:1                                                                                               |
| Profibus speed resolution                                                                            |                                                                                                      |        | 550:1 (Qdos 20)<br>1250:1 (Qdos 30)<br>1250:1 Qdos 60<br>1400:1 (Qdos 120)<br>1250:1 (Qdos CWT)      |                                                                                                      |                                                                                                      |
| Run stop input                                                                                       |                                                                                                      | ✓      |                                                                                                      | ✓                                                                                                    | ✓                                                                                                    |
| Run status open collector output                                                                     |                                                                                                      | ✓      |                                                                                                      | L                                                                                                    |                                                                                                      |
| Alarm open collector output                                                                          |                                                                                                      | ✓      |                                                                                                      | L                                                                                                    |                                                                                                      |
| Two configurable open collector outputs                                                              |                                                                                                      |        |                                                                                                      |                                                                                                      | L                                                                                                    |
| Two configurable relay outputs                                                                       |                                                                                                      | ✓      |                                                                                                      | R                                                                                                    |                                                                                                      |
| Four configurable relay outputs                                                                      |                                                                                                      |        |                                                                                                      |                                                                                                      | R                                                                                                    |
| Remote fluid recovery                                                                                |                                                                                                      | ✓      |                                                                                                      | L                                                                                                    | L                                                                                                    |

| PROFIBUS                  | Manual | Remote | PROFIBUS | Universal | Universal+ |
|---------------------------|--------|--------|----------|-----------|------------|
| Speed set point           |        |        | ✓        |           |            |
| Speed feedback            |        |        | ✓        |           |            |
| Flow calibration function |        |        | ✓        |           |            |
| Hours run                 |        |        | ✓        |           |            |
| Revolution counter        |        |        | ✓        |           |            |
| Leak detection            |        |        | ✓        |           |            |
| Low fluid level alarm     |        |        | ✓        |           |            |
| Diagnostic feedback       |        |        | ✓        |           |            |

| Security                   | Manual | Remote | PROFIBUS | Universal | Universal+ |
|----------------------------|--------|--------|----------|-----------|------------|
| Keypad lock                | ✓      |        | ✓        | ✓         | ✓          |
| PIN lock to protect set up | ✓      |        | ✓        | ✓         | ✓          |

| *Control options - Universal and Universal+ models |                   |                                                                |
|----------------------------------------------------|-------------------|----------------------------------------------------------------|
| Variant                                            | Standard pump (L) | Relay Module (R)                                               |
| Input                                              | 5–24V DC          | 5-24V DC or 110V AC                                            |
| Output                                             | Open collector    | Volt free relay contacts. Maximum: 240 V AC, 4A or 24 V DC, 4A |

Product codes



Pump product codes

| A                                                                     | B                                            | C                                                                      | D                                                                                                                                                                                                                                                              | E                    | F                                                                                                                                             |
|-----------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Model                                                                 | Pumphead                                     | Drive Variant                                                          | Digital I/O type                                                                                                                                                                                                                                               | Pumphead orientation | Power plug                                                                                                                                    |
| 1: Qdos 20<br>2: Qdos 30<br>3: Qdos 60<br>4: Qdos 120<br>5: Qdos CWT® | 2: Santoprene<br>5: PU<br>7: EPDM<br>8: SEBS | 1: Remote<br>3: Manual<br>4: Universal<br>5: Universal+<br>7: PROFIBUS | L: Standard pump variant (Manual, Remote and PROFIBUS models)<br>L: Open collector outputs, 5 – 24 V DC inputs (Universal, Universal+ models)<br>R: Relay module, Volt free relay contacts, Maximum:240 V AC, 4A or 24 V DC, 4A (Universal, Universal+ models) | L: Left<br>R: Right  | A: US<br>E: European<br>U: UK<br>K: Australia<br>R: Argentina<br>C: Swiss<br>D: India, South Africa<br>B: Brazil<br>V: 12-24 V DC<br>Z: China |

Pumphead product codes

| Description                                       | Partcode     |
|---------------------------------------------------|--------------|
| ReNu 20 pumphead PU / PFPE 4 bar (60psi)          | 0M3.1500.PFP |
| ReNu 20 pumphead SEBS / PFPE 7 bar (100psi)       | 0M3.1800.PFP |
| ReNu 30 pumphead Santoprene / PFPE 7 bar (100psi) | 0M3.2200.PFP |
| ReNu 30 pumphead SEBS / PFPE 4 bar (60psi)        | 0M3.2800.PFP |
| ReNu 60 pumphead Santoprene / PFPE 7 bar (100psi) | 0M3.3200.PFP |
| ReNu 60 pumphead SEBS / PFPE 4 bar (60psi)        | 0M3.3800.PFP |
| ReNu 60 pumphead PU 5 bar (70psi)                 | 0M3.3500.PFP |
| ReNu 120 pumphead Santoprene / PFPE 4 bar (60psi) | 0M3.4200.PFP |
| CWT 30 pumphead EPDM/PEEK/PFPE 9 bar (130 psi)    | 0M3.5700.PFP |

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 user's 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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