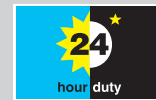


qdos 20, 30, 60, 120

qdos
Peristaltic Metering
Watson-Marlow Pumps

FEATURES AND BENEFITS

- Flow rates 0.1–2000 ml/min (0.001–31.7 USGPH) and up to 7 bar (100psi) RMS pressure
- ReNu pumphead provides accurate, linear and repeatable flow
- Process uptime is maximised with no gas-locking, no valve blocking and rapid no-tools pumphead replacement
- Fluid recovery ensures operator safety and avoids chemical waste
- Flow control up to 20000:1 with $\pm 1\%$ accuracy
- Manual, analogue, PROFIBUS or contact mode functionality available
- PROFIBUS Bus speed 9.6–1,500 kb/s
- 12–24 V DC option



Watson-Marlow... Innovation in Full Flow

PERFORMANCE

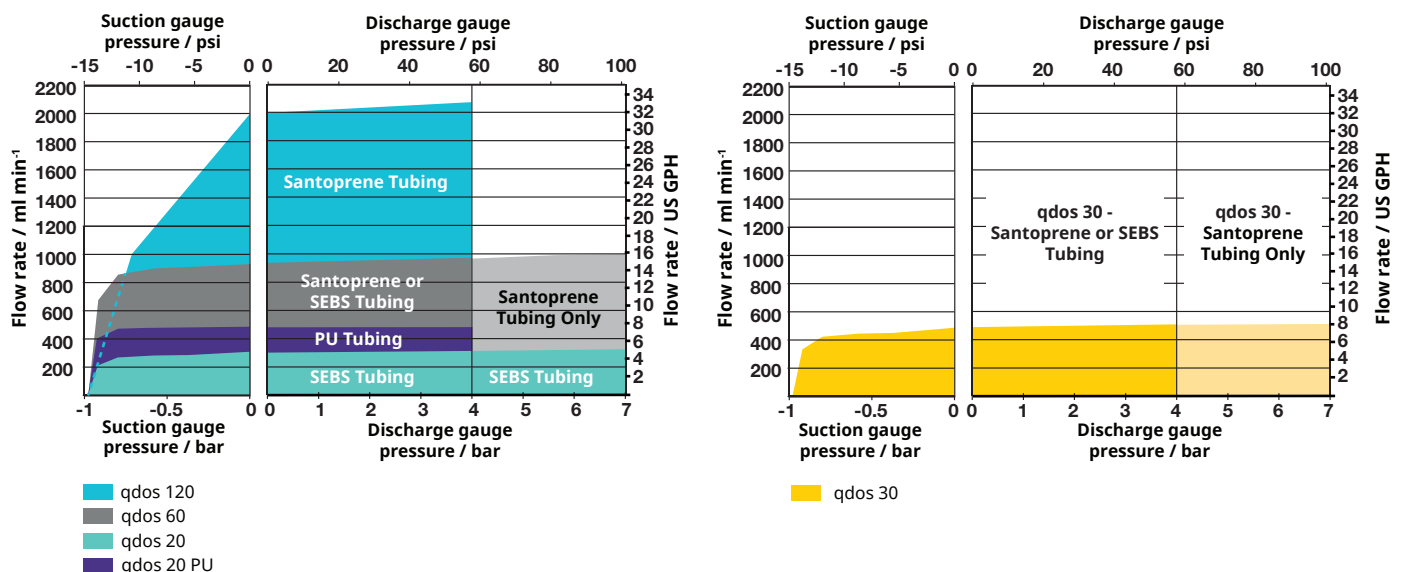
qdos pump typical flow rates

	qdos		qdos remote	
	Speed (rpm)	Flow ml/min (USGPH)*	Speed (rpm)	Flow ml/min(USGPH)*
qdos 20	0.017-55	0.1-333 (0.001-5.3)	0.034-55	0.2-333 (0.003-5.3)
qdos 20 PU	0.017-55	0.1-484 (0.001-7.67)	NA	NA
qdos 30	0.025-125	0.1-500 (0.001-7.93)	0.078-125	0.3-500 (0.005-7.93)
qdos 60	0.013-125	0.1-1000 (0.001-15.85)	0.078-125	0.6-1000 (0.01-15.85)
qdos 120	0.006-140	0.1-2000 (0.001-31.7)	0.078-140	1.25-2000 (0.02-31.7)

*accuracy $\pm 1\%$, repeatability $\pm 0.5\%$

*Flow rates shown can be affected by discharge pressure

Flow rate with discharge pressure for ReNu pumpheads



TECHNICAL SPECIFICATION

	qdos 20	qdos 30	qdos 60	qdos 120
Ingress rating	IP66			
Enclosure	Watertight / dustproof			
Humidity	80 % up to 31 °C (88 °F), decreasing linearly to 50 % at 40 °C (104 °F)			
Temperature (Santoprene)	N/A	5 °C–45 °C (41 °F–113 °F)		
Temperature (SEBS and PU)	5 °C–40 °C (41 °F–104 °F)			N/A
Drive weight	4.6 kg (10 lb 2 oz)	4.1 kg (9 lb 1 oz)	4.6 kg (10 lb 2 oz)	
Pumphead weight	1.1 kg (2 lb 7 oz)	0.95 kg (2 lb 2 oz)	1.1 kg (2 lb 7 oz)	
Control ratio	3330:1	5000:1	10000:1	20000:1
Control ratio (Remote)	1600:1			
Noise	< 70 dB(A) at 1 m			
Standard	CE, NSF 61 (Not ReNu PU pumpheads), cETLus, IRAM S Mark, C-Tick, CSA			
Power supply options	Switch mode power supply ~100-240 V 50-60 Hz 190 VA Country specific plug options			
	12-24 V DC power supply Typical 12 V current (100 W) = 10 A Typical 24 V current (100 W) = 5 A Terminal connectors: M8 (5/16") ring terminals (hole diameter 8.33 mm (0.328"))			

MATERIALS OF CONSTRUCTION

Fluid path components

Component	Pump Variant			
	qdos 20	qdos 30	qdos 60	qdos 120
Tube or fluid contacting element	SEBS TPU	SEBS Santoprene	SEBS Santoprene	
Fluid connection ports	PVDF	PP (Santoprene) PP (SEBS)	PP (Santoprene) PVDF (SEBS)	
Fluid connectors	PP (standard) PVDF (option)			
Fluid connection seals	SEBS, TPU	FKM, EPDM	SEBS, Santoprene	

Materials of construction that have the potential of being wetted when the tube or fluid contacting element fails

Component	Pump Variant			
	qdos 20	qdos 30	qdos 60	qdos 120
Pumphead enclosure	30 % GF PPE+PS PC PP 316 stainless steel	40 % GF PPS 20% GF PP PC PA6 316 stainless steel	30 % GF PPE+PS PC PP 316 stainless steel	
Pumphead enclosure seals	NBR	NBR	NBR	
Rotor	PA6	PA6	PA6	
ReNu window	Polycarbonate (PC)			
Bearings	Steel			
Internal baffle	POM	-	POM	
Vent body	30 % GF PPE+PS	PP POM	30 % GF PPE+PS	
Vent springs	316 stainless steel	316 stainless steel Steel	316 stainless steel	
Lubricant	PFPE			

Materials of construction for external casing

Component	Pump Variant			
	qdos 20	qdos 30	qdos 60	qdos 120
Keypad	Polyester			
Drive casework	20% Glass Filled PPE / PS			
Drive shaft	Stainless steel 440C			

*The pump housing contains aluminium components which can react with some chemicals to produce explosive gas.

*It is the user's responsibility to comply with local health and safety regulations, including ensuring chemical compatibility between the duty fluid, the tube and lubricant contained in the ReNu Pumphead. For guidance refer to www.qdospumps.com.

TECHNICAL DATA - CONTINUED

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

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" (88.9 mm) colour TFT display	•		•	•	•
Fault reporting	•	LED status icons	•	•	•

Control methods	Manual	Remote	PROFIBUS	Universal	Universal+
Input/Output Options*		L	L	L or R	L or R
Manual control capability	•		•	•	•
4-20 mA input		•		•	•
4-20 mA input two point calibration					•
4-20 mA output		•			•
Contact input (pulse/batch)				• L or R	• L or R
Run stop input		•		•	•
Run status output		•		•	L
Alarm output		•		•	L
Four configurable relay outputs					R
Remote fluid recovery		•		•	•


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	•		•	•	•

Power supply options	Manual	Remote	PROFIBUS	Universal	Universal+
12–24 V DC	•			•	•
~100-240 V AC	•	•	•	•	•

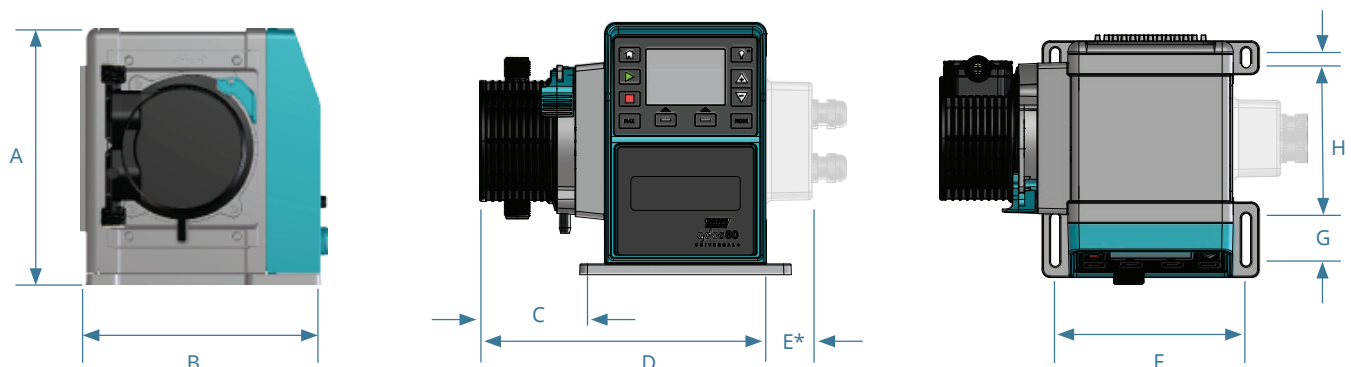
*Control options - Universal and Universal+ models			Fitting kits	EC1935/2004	FDA Regulation 21 CFR
Variant	Standard pump (L)		Interface tubing - PE and PVC	✓	✓
Input	5–24 V DC	Front mounted M12 connectors	Hydraulic connection pack hose barb PVDF, PP		
Output	Open collector		Hydraulic connection pack compression fitting PP		
Variant	Relay Module (R)		Hydraulic connection pack barb threaded fitting PVDF		
Input	5-24 V DC or 110 V AC	Spring terminals in a side mounted connection module			
Output	Contact rating 110 V AC, 4A 30 V DC, 4A				

TECHNICAL DATA - CONTINUED

Product		EC1935/2004						
		Aqueous foods	Acidic foods (pH<4.5)	Alcoholic foods (<20% alcohol)	Alcoholic foods (>20% alcohol)	Dairy	Fatty foods	Repeated use
ReNu 20 PU pumpheads		✓	✓	✓	✗	✓	✓	✓
ReNu 20/30/60 SEBS pumpheads		✓	✓	✓	✓	✓	✗	✓
ReNu 30/60/120 Santoprene pumpheads		✗	✗	✗	✗	✗	✗	✗

Product		FDA Regulation 21 CFR							
		Aqueous foods	Acidic foods (pH<4.5)	Alcoholic foods (<20% alcohol)	Alcoholic foods (>20% alcohol)	Dairy	Fatty foods	Repeated use	Infant formula and human milk
ReNu 20 PU pumpheads		✓	✓	✓	✗	✓	✓	✓	✓
ReNu 20/30/60 SEBS pumpheads		✓	✓	✓	✓	✓	✓	✓	✓
ReNu 30/60/120 Santoprene pumpheads		✓	✗	✓	✗	✓	✗	✓	✗

DIMENSIONS



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

Model	A	B	C	D	E—Optional relay modules (H or R)	F	G	H	I
qdos 20	234 mm (9.2 ")	214 mm (8.4 ")	104.8 mm (4.1 ")	266 mm (10.5 ")	43 mm (1.7 ")	173 mm (6.8 ")	40 mm (1.6 ")	140 mm (5.5 ")	10 mm (0.4 ")
qdos 30	234 mm (9.2 ")	214 mm (8.4 ")	71.5 mm (2.8 ")	233 mm (9.2 ")	43 mm (1.7 ")	173 mm (6.8 ")	40 mm (1.6 ")	140 mm (5.5 ")	10 mm (0.4 ")
qdos 60	234 mm (9.2 ")	214 mm (8.4 ")	104.8 mm (4.1 ")	266 mm (10.5 ")	43 mm (1.7 ")	173 mm (6.8 ")	40 mm (1.6 ")	140 mm (5.5 ")	10 mm (0.4 ")
qdos 120	234 mm (9.2 ")	214 mm (8.4 ")	104.8 mm (4.1 ")	266 mm (10.5 ")	43 mm (1.7 ")	173 mm (6.8 ")	40 mm (1.6 ")	140 mm (5.5 ")	10 mm (0.4 ")

ORDER INFORMATION

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Model

1: qdos 20
2: qdos 30
3: qdos 60
4: qdos 120

Fluid path material†

2: Santoprene
5: PU
8: SEBS

Model

1: Remote
3: Manual
4: Universal
5: Universal+
7: PROFIBUS

Plug options

A: US
E: European
U: UK
K: Australia
R: Argentina
C: Swiss
D: India/South Africa
V: 12–24V DC

Pumphead orientation*

L = Left
R = Right

† For guidance on chemical compatibility see www.qdospumps.com

Digital I/O type

Manual, Remote and PROFIBUS models
L: Standard pump variant

Universal and Universal+ models
L: Open collector outputs, 5–24 V DC inputs
R: Volt free 110 V AC 30 V DC relay contacts, 5–24 V DC or 110 V AC inputs

Pumphead product codes	
Description	Partcode
ReNu 20 pumphead PU / PFPE 4 bar (60 psi)	0M3.1500.PFP
ReNu 20 pumphead SEBS / PFPE 7 bar (100 psi)	0M3.1800.PFP
ReNu 30 pumphead Santoprene / PFPE 7 bar (100 psi)	0M3.2200.PFP
ReNu 30 pumphead SEBS / PFPE 4 bar (60 psi)	0M3.2800.PFP
ReNu 60 pumphead Santoprene / PFPE 7 bar (100 psi)	0M3.3200.PFP
ReNu 60 pumphead SEBS / PFPE 4 bar (60 psi)	0M3.3800.PFP
ReNu 120 pumphead Santoprene / PFPE 4 bar (60 psi)	0M3.4200.PFP

* The pumphead side location is required when ordering. The left/right perspective assumes the user is looking at the front of the pump. The pump in the dimensions diagram is considered a pumphead located to the left.

All flow rates shown were obtained pumping water at 20 °C (68 °F) with zero suction and delivery heads. qdos drives are not ATEX rated and should not be used within explosive atmospheres. 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, Qdos, ReNu, LoadSure, Bioprene, Pumpsil and Marprene are trademarks of Watson-Marlow Limited. STA-PURE PFL® and STA-PURE PCS® are registered trademarks of W.L. Gore & Associates Inc. Please state the product code when ordering pumps and tubing.

**WATSON
MARLOW
Pumps**

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