

400FDC/D2, 400FD/D2, 400FDL/D2, 400FS/D2

400 series

Watson-Marlow Pumps

FEATURES AND BENEFITS

- Compact instrument two channel quality pump
- Spring loaded fully adjustable track for adaptability to various pressure conditions and maximising tube life
- Tube elements for easy tube change and optimal tube performance
- Wide range of gear motors available
- Flow rates up to 82 ml/min



Watson-Marlow...Innovation in Full Flow

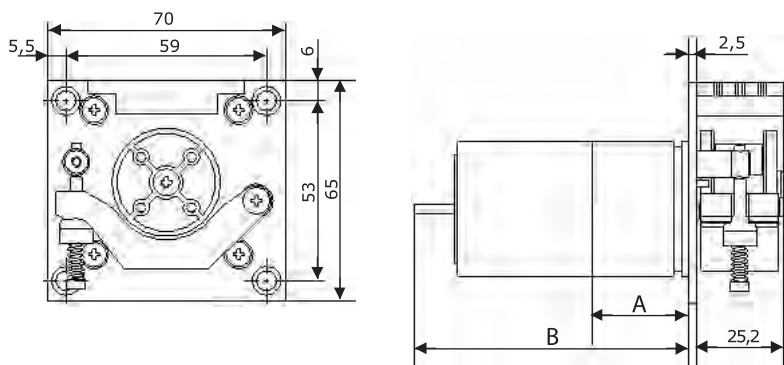
PERFORMANCE

Flow rates (ml/min) Tubing 1.0mm

Tube bore (mm)	Speed (rpm)													
	4	5	10	12	15	20	25	40	50	75	100	130	200	250
0.5	0.05	0.07	0.13	0.16	0.20	0.26	0.33	0.52	0.65	1.0	1.3	1.7	2.6	3.3
1.0	0.20	0.25	0.50	0.60	0.75	1.0	1.3	2.0	2.5	3.8	5.0	6.5	10	12
2.0	0.72	0.90	1.8	2.2	2.7	3.6	4.5	7.2	9.0	13	18	23	36	45
3.0	1.3	1.7	3.3	4.0	5.0	6.6	8.3	4.0	16	25	33	43	66	82

Custom Options	
Pumpheads	Drives
Custom occlusion setting	Alternative speeds
Other materials	Several drive options
Custom mounting panel	400SCB/534 speed control board (for 400FDC)
Custom colours	Encoder
Individual tracks	12VDC 400FDC
2 channel version	

DIMENSIONS



All dimensions in mm

Motor Type	400FDC/D2 5W	400FD/D2 5W	400FDL/D2 5W	400FS/D2 2W
Dimensions A	L=26.5mm x Ø39.6mm	L=26.5mm x Ø39.6mm	L=26.5mm x Ø39.6mm	Total length (A+B)=44.4mm
Dimensions B	L=87.3mm* x Ø39.6mm	L=81.0mm* x Ø39.6mm	L=77.0mm* x Ø39.6mm	Total diameter (A+B)=79.2mm

*=maximum length behind mounting plate

TECHNICAL SPECIFICATION

Specifications	400/D2
Pumptype	Two channel peristaltic pump
Tubing	1.0mm wall, for tube elements

Specification	400FDC/D2 5W	400FD/D2 5W	400FDL/D2 5W	400FS/D2 2W
Recommended use	continuous or intermittent	continuous or intermittent	continuous or intermittent	continuous or intermittent
Operation	CW and CCW	CW and CCW	CCW	CW
Approximate motor life	Up to 5000 hrs	Up to 3000 hrs	Up to 20000 hrs (the limitation is typically the gearbox)	Up to 5000 hrs
Supply voltage	24-30VDC	24VDC	24VDC	110/230VAC (60/50 Hz)
Power consumption	5W	5W	5W	2W
Brushes	silver palladium precious metal	carbon	none - brushless drive	none
Speed control	PWM or voltage control	voltage control	voltage control (down to 50%)	Fixed speed
Gearbox	spur; 15:1, 30:1, 75:1, 250:1	spur; 30:1, 75:1, 250:1	spur; 15:1, 30:1, 75:1, 250:1	Spur: 125:1
Operating temperature	-10 to +45C	-10 to +45C	-10 to +45C	-10 to +45C

MATERIALS OF CONSTRUCTION

Component	Material
Rotor	Acetal (Black)
Rollers	Acetal (Black)
Track	Acetal (Black)
Tube holder	Acetal (Black)
Shafts	Acid resistant stainless steel
Mounting panel	Black anodised aluminium
Springs	Acid resistant stainless steel
Screws	Acid resistant stainless steel

ORDER INFORMATION

Product codes			
Motor type	Voltage	Speed rpm	Product code
Standard DC 5W	24-30VDC	100rpm	040.EP1D.N2C
Standard DC 5W	24-30VDC	40rpm	040.EH1D.N2C
Standard DC 5W	24-30VDC	12rpm	040.E81D.N2C
Economy DC 5W	24VDC	200rpm	040.BS1D.N2C
Economy DC 5W	24VDC	75rpm	040.BN1D.N2C
Economy DC 5W	24VDC	25rpm	040.BC1D.N2C
Brushless DC 5W	24VDC	250rpm	040.FT1D.N2C
Brushless DC 5W	24VDC	130rpm	040.FQ1D.N2C
Brushless DC 5W	24VDC	50rpm	040.FK1D.N2C
Brushless DC 5W	24VDC	15rpm	040.F91D.N2C
Synchronous AC 2W	110VAC (60Hz)	25rpm	040.HC1D.N2C
Synchronous AC 2W	220VAC (50Hz)	20rpm	040.JA1D.N2C
Synchronous AC 2W	110VAC (60Hz)	12rpm	040.H81D.N2C
Synchronous AC 2W	220VAC (50Hz)	10rpm	040.J71D.N2C
Synchronous AC 2W	110VAC (60Hz)	5rpm	040.H41D.N2C
Synchronous AC 2W	220VAC (50Hz)	4rpm	040.J31D.N2C

Standard 430 Elements for 400F/D2 and 400F/D3 pumpheads			
Bore/Wall	Bioprene	Peroxide cured Silicone	Connects to
0.5/1.0mm	049.EF6D.N05	-	Tube bore 3.0
1.0/1.0mm	049.EF6D.N10	049.EH6D.N10	Tube bore 3.0
2.0/1.0mm	049.EF6D.N20	049.EH6D.N20	Tube bore 3.0
3.0/1.0mm	-	049.EH6D.N30	Tube bore 3.0

All flow rates shown were obtained pumping water at 20C (68F) with zero suction and delivery heads. Watson-Marlow, Bioprene and Marprene are trademarks of Watson-Marlow Limited. 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. LoadSure is a trademark 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.

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