

400/VM2-F, VM3-F, VM4-F Precision instrument quality multi-channel pumps

Technical information and features

- 2, 3, and 4 channel manifold tubing pumps
- Very low pulsation pumping and dosing provided with 10 rollers in C-Teflon® low-friction material
- Flow rates down to micro litres per minute
- Individual spring loaded tracks for flexibility and maximised performance
- Occlusion pre-set to optimised pressure performance and tube life
- Standard 2-bridged colour-coded tube elements available in 19 sizes and 5 different materials



400/VM4 Just lift the yellow arms for easy tube loading or pressure relief.

Flow Rates

Santoprene tubing, zero pressure and no suction height

| Tube Code | TubeBore | ml/rev | ml/min @ nominal rpm | | | | |
|-----------------|----------|--------|----------------------|-------|-------|-------|------|
| | | | 12 | 25 | 30 | 60 | 100 |
| Orange / Black | 0,13 mm | 0,001 | 0,012 | 0,025 | 0,030 | 0,060 | 0,10 |
| Orange / Red | 0,19 mm | 0,003 | 0,036 | 0,075 | 0,090 | 0,18 | 0,30 |
| Orange / Blue | 0,25 mm | 0,004 | 0,048 | 0,10 | 0,12 | 0,24 | 0,40 |
| Orange / Green | 0,38 mm | 0,010 | 0,12 | 0,25 | 0,30 | 0,60 | 1,0 |
| Orange / Yellow | 0,50 mm | 0,018 | 0,22 | 0,45 | 0,54 | 1,1 | 1,8 |
| Orange / White | 0,63 mm | 0,028 | 0,34 | 0,70 | 0,84 | 1,7 | 2,8 |
| Black / Black | 0,76 mm | 0,038 | 0,46 | 0,95 | 1,1 | 2,3 | 3,8 |
| Orange / Orange | 0,88 mm | 0,053 | 0,64 | 1,3 | 1,6 | 3,2 | 5,3 |
| White / White | 1,02 mm | 0,068 | 0,82 | 1,7 | 2,0 | 4,1 | 6,8 |
| Red / Red | 1,14 mm | 0,085 | 1,0 | 2,1 | 2,6 | 5,1 | 8,5 |
| Grey / Grey | 1,29 mm | 0,11 | 1,3 | 2,8 | 3,3 | 6,6 | 11 |
| Yellow / Yellow | 1,42 mm | 0,13 | 1,6 | 3,3 | 3,9 | 7,8 | 13 |
| Yellow / Blue | 1,52 mm | 0,14 | 1,7 | 3,5 | 4,2 | 8,4 | 14 |
| Blue / Blue | 1,65 mm | 0,17 | 2,0 | 4,3 | 5,1 | 10,2 | 17 |
| Green / Green | 1,85 mm | 0,20 | 2,4 | 5,0 | 6,0 | 12,0 | 20 |
| Purple / Purple | 2,05 mm | 0,24 | 2,9 | 6,0 | 7,2 | 14,4 | 24 |
| Purple / Black | 2,29 mm | 0,27 | 3,2 | 6,8 | 8,1 | 16,2 | 27 |
| Purple / Orange | 2,54 mm | 0,31 | 3,7 | 7,8 | 9,3 | 18,6 | 31 |
| Purple / White | 2,79 mm | 0,34 | 4,1 | 8,5 | 10,2 | 20,4 | 34 |

Pressure and Suction height capability

| Max pressure (bar) | | Max suction (mmH ₂ O) | |
|--------------------|----------|----------------------------------|----------|
| Santoprene | Silicone | Santoprene | Silicone |
| >4 | >4 | 5000 | 5000 |
| >4 | >4 | 5000 | 5000 |
| 4 | 4 | 5000 | 5000 |
| 3 | 3 | 5000 | 5000 |
| 3 | 3 | 5000 | 5000 |
| 3 | 3 | 5000 | 5000 |
| 3 | 3 | 5000 | 5000 |
| 2 | 2 | 5000 | 5000 |
| 2 | 2 | 5000 | 5000 |
| 2 | 2 | 5000 | 5000 |
| 2 | 2 | 5000 | 5000 |
| 2 | 2 | 5000 | 5000 |
| 1,5 | 1,5 | 4000 | 4000 |
| 1,5 | 1,5 | 4000 | 4000 |
| 1,5 | 1,5 | 3500 | 3500 |
| 1,2 | 1,5 | 3500 | 3500 |
| 1,2 | 1,5 | 3000 | 3000 |
| 1 | 1,2 | 2500 | 2500 |
| 1 | 1,2 | 2500 | 2500 |

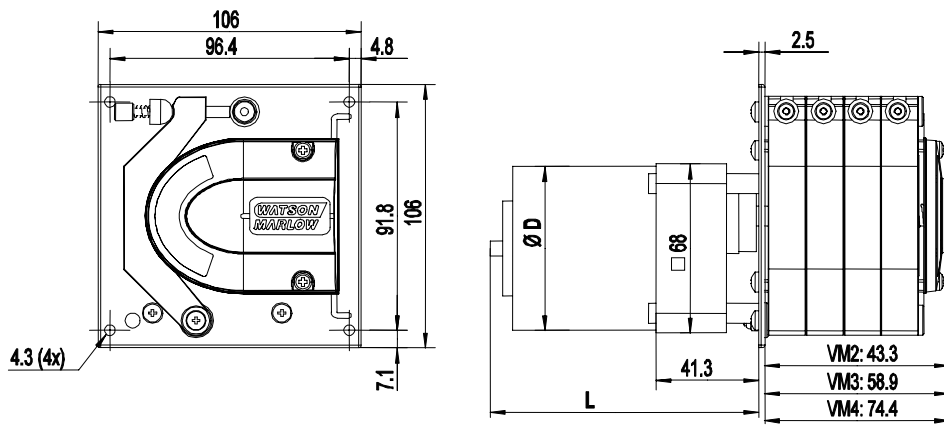
Customised Solutions

If you don't find exactly what you are looking for in this data sheet a customised product could be the solution.

The factory adjusted tracks can be replaced by individual adjustable tracks. These pumps could also be supplied with alternative drives and gear ratios, with alternative roller material, fitted on a customised mounting panel and more.



400/VM3-F 10 precision machined low friction C-Teflon® rollers for low pulsation pumping



| | Motor type: | Length L behind mounting surface | Motor diameter D |
|------------------|------------------|---|-------------------------|
| 400FDC/VM | Coreless DC 30W | L= 120 mm | D= 68 mm |
| | Coreless DC 5W | L= 90 mm | D= 40 mm |
| 400VDL/VM | Brushless DC 35W | L= 105 mm | D= 68 mm |

400/VM

Materials of Construction

| | |
|------------------|--------------------------------|
| Rotor | Anodised Aluminium |
| Rollers | C-Teflon® |
| Tracks | Anodised Aluminium |
| Tube holder | Anodised Aluminium |
| Shafts | Acid resistant stainless steel |
| Mounting panel | Anodised aluminium |
| Springs & screws | Stainless steel |
| Front cover | Polycarbonate |

Motor descriptions

The **coreless DC 30W** motor is a powerful instrument quality motor for higher speed applications. This motor features low electrical and audible noise, long brush life and excellent speed regulation with our controllers (optional). The 24 V version accepts voltage up to 30 VDC. An optional 3ppr encoder is available.

The **coreless DC 5W** motor is a compact instrument quality motor for use at speeds up to 60 rpm. This motor features low electrical and audible noise, long brush life and excellent speed regulation with our controllers (optional). The 12 V version accepts voltage up to 15 VDC and the 24 V version accepts voltage up to 30 VDC. An optional 3ppr encoder is available for the 12 V version.

The **brushless DC 35W** motor is powerful and precise with built in controller. No brushes yields an extremely long life with no maintenance required. The built in controller features excellent speed regulation via an external 0-5 V signal, CW / CCW switching and a frequency (36 ppr) tachometer output.

Product codes

400FDC/VM

| Motor type | Voltage | Nominal Speed* | VM2-F 2 channel | VM3-F 3 channel | VM4-F 4 channel |
|-----------------|---------|----------------|-----------------|-----------------|-----------------|
| Coreless DC 30W | 12 VDC | 100 rpm | 040.MPFV.M2T | 040.MPFV.M3T | 040.MPFV.M4T |
| Coreless DC 30W | 24 VDC | 100 rpm | 040.LPFV.M2T | 040.LPFV.M3T | 040.LPFV.M4T |
| Coreless DC 5W | 12 VDC | 60 rpm | 040.CMFV.M2T | 040.CMFV.M3T | 040.CMFV.M4T |
| Coreless DC 5W | 24 VDC | 60 rpm | 040.EMFV.M2T | 040.EMFV.M3T | 040.EMFV.M4T |
| Coreless DC 5W | 12 VDC | 25 rpm | 040.CCFV.M2T | 040.CCFV.M3T | 040.CCFV.M4T |
| Coreless DC 5W | 24 VDC | 25 rpm | 040.ECFV.M2T | 040.ECFV.M3T | 040.ECFV.M4T |
| Coreless DC 5W | 12 VDC | 12 rpm | 040.C8FV.M2T | 040.C8FV.M3T | 040.C8FV.M4T |
| Coreless DC 5W | 24 VDC | 12 rpm | 040.E8FV.M2T | 040.E8FV.M3T | 040.E8FV.M4T |

* @ nominal voltage and nominal load. Speed is load dependent and can be adjusted by altering the voltage.

400VDL/VM

| Motor type | Voltage | Nominal Speed | VM2-F 2 channel | VM3-F 3 channel | VM4-F 4 channel |
|------------------|---------|---------------|-----------------|-----------------|-----------------|
| Brushless DC 35W | 24 VDC | 100 rpm | 040.NPFV.M2T | 040.NPFV.M3T | 040.NPFV.M4T |
| Brushless DC 35W | 24 VDC | 30 rpm | 040.NEFV.M2T | 040.NEFV.M3T | 040.NEFV.M4T |

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