

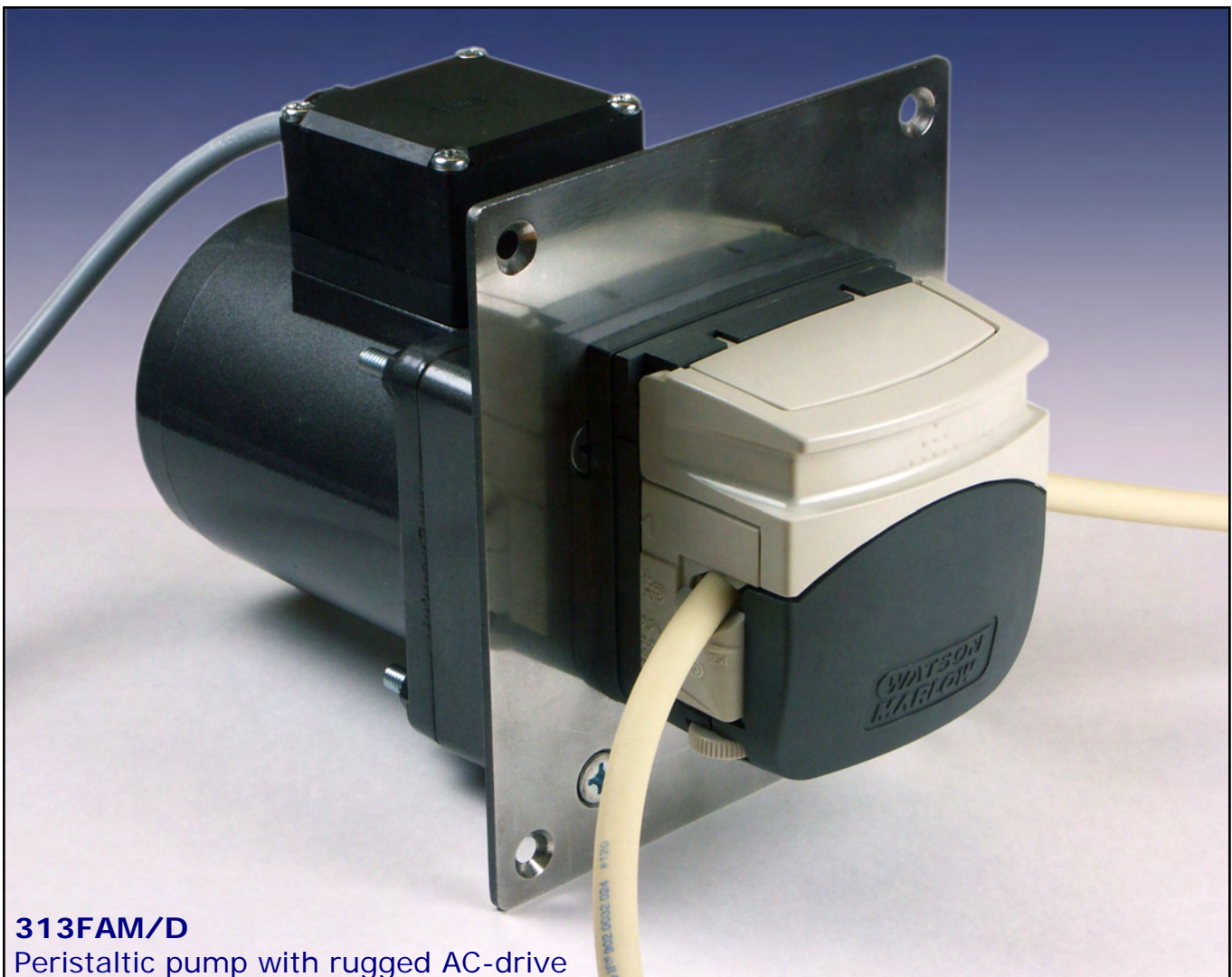
# OEM

**WATSON  
MARLOW  
ALITEA**

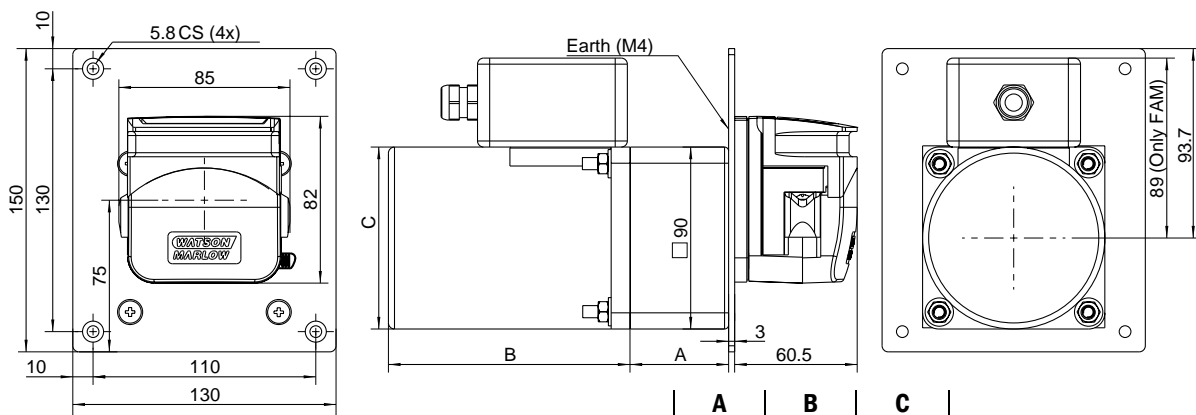
## 313/314 FAM, FDM and VBM Heavy duty AC and DC OEM-pumps

### Technical information and features

- Rugged peristaltic pumps for industrial applications
- IP 54 (313/314 FAM and 313/314 VBM)
- Complete range of drives; AC, DC and Brushless DC
- Heavy duty spur gearbox with ball bearings
- High performance easy load pumphead
- Available in multi channel versions with up to 6 channels
- Stainless steel face plate
- Flow rates up to 2400 ml/min



**313FAM/D**  
Peristaltic pump with rugged AC-drive



	A	B	C
FAM 37 and 42 rpm	68	100	Ø90
FAM 75, 85, 145, 170, 290 rpm	50	100	Ø90
FDM 45 rpm	68	110	Ø80
FDM 90, 175, 230 rpm	50	110	Ø80
VBM 100 rpm	63	60	Ø70
VBM 190, 360 rpm	45	60	Ø70

All dimensions in millimetres

## Motor descriptions

FAM AC-drive	FDM DC-drive	VBM Brushless DC-drive
<ul style="list-style-type: none"> <li>● 1 Phase, 4 pole induction motor.</li> <li>● 220-230 VAC</li> <li>● Power: 40W</li> <li>● Nominal speed: 1450 pm@50Hz, 1750 rpm@60Hz</li> <li>● Reversible</li> <li>● With terminal box for easy and secure installation</li> <li>● Capacitor included (inside term. box)</li> <li>● Working temperature: -10 to +40 °C</li> <li>● Protection class: IP54</li> </ul>	<ul style="list-style-type: none"> <li>● Carbon brush DC motor.</li> <li>● 12 or 24 VDC</li> <li>● Power: 30 W</li> <li>● Motor speed (nominal): 1750 rpm</li> <li>● Reversible</li> <li>● Speed can be adjusted by altering the input voltage</li> <li>● Replaceable brushes (normal life 2500 to 4000 h)</li> <li>● Cable length 300 mm</li> <li>● Working temperature: -10 to +45 °C</li> <li>● Protection class: IP41</li> </ul>	<ul style="list-style-type: none"> <li>● Brushless variable speed motor</li> <li>● 24 VDC</li> <li>● Power: 35 W</li> <li>● Built in controller for speed regulation via external 0-4 V signal (10-100%)</li> <li>● Motor max speed: 4000 rpm</li> <li>● Reversible</li> <li>● No brushes yields an extremely long life with no maintenance required</li> <li>● Cable length 500 mm</li> <li>● Working temperature: -10 to +45 °C</li> <li>● Protection class: IP54</li> <li>● Frequency (36 ppr) tachometer output</li> </ul>

### Special note for the FAM drive:

The drives are delivered with a capacitor optimised for most applications. By altering the capacitor value one can achieve:

1. Increased starting torque in high torque applications
2. Reduced heat in long life continuous running applications

## Pumphead description

**313** and **314** pumpheads are fast loading and easy to use with the flip-top design.

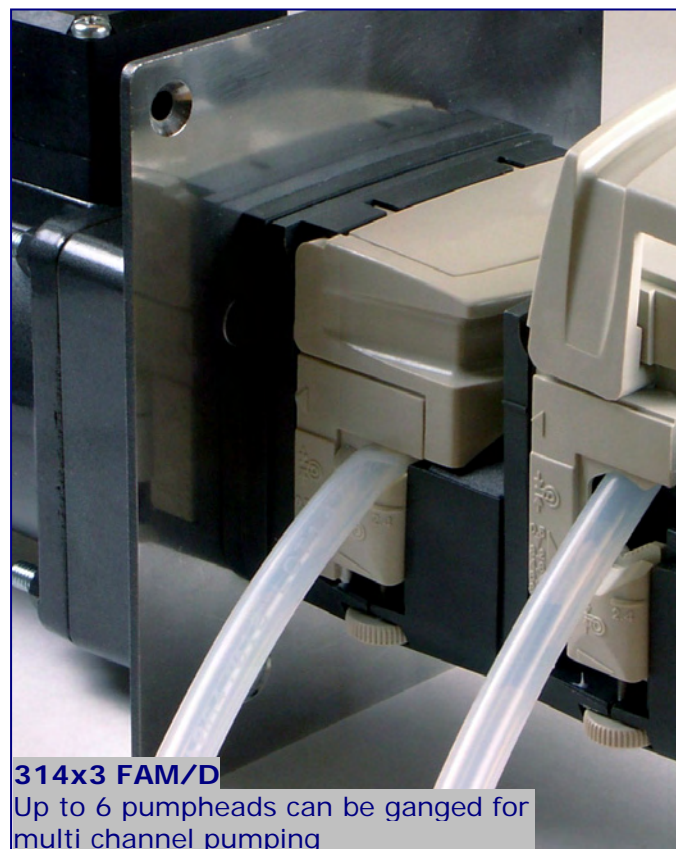
They attach to the drive with a bayonet fitting. Up to six pumpheads can be ganged to a drive for multi channel pumping.

313 pumpheads have three rollers and 314 pumpheads have four. The four roller design gives higher precision and less pulsation, but lower flow (85%) than with three rollers.

In standard configuration the pumpheads are for 1,6 mm wall tubing and come with adjustable tube clamps for 0.5 mm to 8.0 mm ID tubing.

For applications where thicker wall tubing is needed (typically higher pressure applications), pumpheads for 2.4 mm wall thickness are available, 313D2 and 314D2.

*Please use the pumphead data sheet for more information about material, pressure performance etc.*



**314x3 FAM/D**

Up to 6 pumpheads can be ganged for multi channel pumping

## 313 Flow Rates

Marprene tubing, 1,6mm wall, zero pressure and no suction height

Nominal flow rates, may vary  $\pm 10\%$ .

ml/min with tubing dimension:		0.5mm	0.8mm	1.6mm	3.2mm	4.8mm	6.4mm	8.0mm
FAM 50Hz	37 rpm	1,3	2,6	10	37	80	130	185
	75 rpm	2,6	5,4	20	75	165	270	375
	145 rpm	5	10	39	145	320	520	725
	290 rpm	10	21	79	290	640	1045	1450
FAM 60Hz	42 rpm	1,4	3	11	42	90	150	210
	85 rpm	3	6	23	85	190	305	425
	170 rpm	6	12	46	170	375	610	850
FDM 12/24VDC	45 rpm	1,5	3,2	12	45	100	160	225
	90 rpm	3	6,4	24	90	198	325	450
	175 rpm	6	13	48	175	385	630	875
	350 rpm	12	25	95	350	770	1260	1750
VBM 24VDC	100 rpm	3,4	7	27	100	220	360	500
	190 rpm	6,5	14	52	190	420	685	950
	360 rpm	12	26	100	360	790	1296	1800
	480 rpm	16	34	130	480	1050	1730	2400*

314 flowrates are approximately 85% of 313 flow rates.

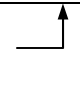
\* With Silicone tubing

## Product codes

313 FAM				313 FDM		
Supply voltage	Speed	313FAM/D	No of channels	Supply voltage	Speed	313FDM/D
230VAC, 50Hz	37	040.AG23.010	6	12VDC	45	040.CH23.010
			6	24VDC	45	040.DH23.010
115VAC, 60Hz	42	040.EH23.010	4	12VDC	90	040.CP23.010
230VAC, 50Hz	75	040.AN23.010	4	24VDC	90	040.DP23.010
115VAC, 60Hz	85	040.EP23.010	2	12VDC	175	040.CR23.010
230VAC, 50Hz	145	040.AQ23.010	2	24VDC	175	040.DR23.010
115VAC, 60Hz	170	040.ER23.010	1	12VDC	350	040.CV23.010
230VAC, 50Hz	290	040.AU23.010	1	24VDC	350	040.DV23.010

Standard options for all drives:

- For 314 pumphead, replace 3 by 4
- For 2.4 mm wall pumphead, /D2 replace 0 by 2



313 VBM			
No of channels	Supply voltage	Speed	313VBM/D
3	24VDC	100	040.NP23.010
2	24VDC	190	040.NS23.010
1	24VDC	360	040.NV23.010
1	24VDC	480*	040.NW23.010

\* 480rpm drive not for high torque applications (max 0.5Nm)

Silicone 8.0mm, no backpressure

Marprene max 6.4mm, no backpressure

## 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 drives can be supplied with alternative gear ratios and other motors such as variable speed AC and fan-cooled AC. The pumphead can be fitted on a customised face plate and more.

Please contact your Watson-Marlow sales office for price and lead time

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